



Ngujima-Yin FPSO Facility Operations Environment Plan

Production Division

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Revision 11

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1 INTRODUCTION

1.1 Overview

Woodside Energy Limited (Woodside), as Titleholder under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)* (referred to as the Environment Regulations), on behalf of the Joint Venture detailed in **Section 1.6**, is operator of the Ngujima-Yin Floating Production, Storage and Offloading (FPSO) facility (known hereafter as the NY facility).

The NY facility is located offshore, approximately 43 km north of Western Australia's North West Cape. The NY facility commenced operation in 2008. Well fluids are recovered from four fields via wells, a rigid flowline and subsea infrastructure. Crude oil produced from these reservoirs is processed on the FPSO, and the processed stabilised crude oil is then offloaded to offtake tankers direct for export.

The following activities are proposed to occur within Permit Area WA-28-L, WA-59-L and WA-28-PL:

- routine production and associated activities from 19 existing subsea wells
- routine production and associated activities from up to two future subsea wells
- crude oil offloading activities
- routine and non-routine inspection, monitoring, maintenance and repair (IMMR) of the FPSO and associated subsea infrastructure
- well unloading and clean-up of up to two new wells to the FPSO
- disconnection and sailaway of the NY FPSO with the submerged turret production (STP) mooring and subsea infrastructure remaining in place
- non-routine and unplanned activities and incidents associated with the above.

These activities will hereafter be referred to as the Petroleum Activities Program and form the scope of this Environment Plan (EP). A more detailed description of the activities is provided in **Section 3**.

This EP has been prepared as part of the requirements under the Environment Regulations, as administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). In accordance with the requirements of regulation 41 of the Environment Regulations, Woodside has submitted this revision of the Ngujima-Yin FPSO Facility Operations EP to NOPSEMA at least 14 days before the end of the five-year period from the previous acceptance under regulation 35 of the Environment Regulations.

1.2 Purpose of the Environment Plan

In accordance with the objectives of the Environment Regulations, the purpose of this EP is to demonstrate that:

- the potential environmental impacts and risks (planned (routine and non-routine) and unplanned) that may result from the Petroleum Activities Program are identified
- appropriate management controls are implemented to reduce impacts and risks to a level that is 'as low as reasonably practicable' (ALARP) and acceptable
- the Petroleum Activities Program is carried out in a manner consistent with the principles of ecologically sustainable development (as defined in Section 3A of the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act)).

This EP describes the process and resulting outputs of the risk assessment, whereby impacts and risks are managed accordingly.

The EP defines activity-specific environmental performance outcomes (EPOs), environmental performance standards (EPSs), and measurement criteria (MC). These form the basis for monitoring, auditing, and managing the Petroleum Activities Program to be undertaken by Woodside and its contractors. The implementation strategy (derived from the decision support framework tools) specified in this EP provides Woodside and NOPSEMA with the required level of assurance that impacts and risks associated with the activity are reduced to ALARP and are acceptable.

1.3 Scope of the Environment Plan

The scope of this EP covers the activities that define the Petroleum Activities Program, as described in **Section 3**, for a period of up to five years. The Operational Area, as defined in **Section 3.3**, defines the spatial boundary of the Petroleum Activities Program.

This EP addresses potential environmental impacts from planned activities and potential unplanned risks that originate from within the Operational Area. Transit to and from the Operational Area by project vessels, as well as port activities associated with these vessels, are not within the scope of this EP. Vessels supporting the Petroleum Activities Program operating outside the Operational Area (e.g. transiting to and from port) are subject to applicable maritime regulations and other requirements and are not managed by this EP.

1.4 Environment Plan Summary

An EP summary will be prepared based on the material provided in this EP. **Table 1-1** summarises the content that will be provided within the EP summary, as required by regulation 35(7).

Table 1-1: Environment Plan summary

EP summary material requirement	Relevant section of this EP containing EP summary material
The location of the activity	Section 3
A description of the receiving environment	Section 4
A description of the activity	Section 3
Details of the environmental impacts and risks	Section 6
The control measures for the activity	Section 6
The arrangements for ongoing monitoring of the titleholder’s environmental performance	Section 7.7
Response arrangements in the oil pollution emergency plan (OPEP)	Section 7.11
Consultation already undertaken and plans for ongoing consultation	Section 5
Details of the titleholder’s nominated liaison person for the activity	Section 1.7.2

1.5 Structure of the Environment Plan

The EP has been structured to reflect the process and requirements of the Environment Regulations, as outlined in Table 1-2.

Table 1-2: Environment Plan process phases, applicable environment regulations and relevant section of Environment Plan

Criteria for acceptance	Content Requirements/Relevant Regulations	Elements	Section of EP
Regulation 34(a): is appropriate for the nature and scale of the activity	Regulation 21: Environmental Assessment Regulation 22: Implementation strategy for the environment plan Regulation 24: Other information in the environment plan	The principle of 'nature and scale' applies throughout the EP	Section 2 Section 3 Section 4 Section 5 Section 6 Section 7
Regulation 34(b): demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable	Regulation 21(1)–21(7): 21(1) Description of the activity 21(2)(3) Description of the environment 21(4) Requirements 21(5)(6) Evaluation of environmental impacts and risks 21(7) Environmental performance outcomes and standards	Set the context (activity and existing environment) Define 'acceptable' (the requirements, the corporate policy, relevant persons) Detail the impacts and risks Evaluate the nature and scale Detail the control measures – ALARP and acceptable	Section 1 Section 2 Section 3 Section 4 Section 5 Section 6 Section 7
Regulation 34(c): demonstrates that the environmental impacts and risks of the activity will be of an acceptable level	Regulation 24(a)–24(c): A statement of the titleholder's corporate environmental policy A report on all consultations between the titleholder and any relevant person		
Regulation 34(d): provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria	Regulation 21(7): Environmental performance outcomes and standards	EPOs EPSs MC	Section 6
Regulation 34(e): includes an appropriate implementation strategy and monitoring, recording and reporting arrangements	Regulation 22: Implementation strategy for the environment plan	Implementation strategy, including: <ul style="list-style-type: none"> • systems, practices and procedures • performance monitoring • OPEP and scientific monitoring • ongoing consultation. 	Section 7

Criteria for acceptance	Content Requirements/Relevant Regulations	Elements	Section of EP
<p>Regulation 34(f): does not involve the activity or part of the activity, other than arrangements for environmental monitoring or for responding to an emergency, being undertaken in any part of a declared World Heritage property within the meaning of the EPBC Act</p>	<p>Regulation 21(1)–21(3): 21(1) Description of the activity 21(2) Description of the environment 21(3) Without limiting [Regulation 21(2)(b)], particular relevant values and sensitivities may include any of the following: (a) the world heritage values of a declared World Heritage property within the meaning of the EPBC Act (b) the national heritage values of a National Heritage place within the meaning of that Act (c) the ecological character of a declared Ramsar wetland within the meaning of that Act (d) the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act (e) the presence of a listed migratory species within the meaning of that Act (f) any values and sensitivities that exist in, or in relation to, part or all of: a Commonwealth marine area within the meaning of that Act, or Commonwealth land within the meaning of that Act.</p>	<p>No activity, or part of the activity, undertaken in any part of a declared World Heritage property</p>	<p>Section 3 Section 4 Section 6</p>
<p>Regulation 34(g): (i) the titleholder has carried out the consultations required by Section 25 (ii) the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate</p>	<p>Regulation 25: Consultation with relevant authorities, persons and organisations, etc. Regulation 24(b): A report on all consultations between the titleholder and any relevant person</p>	<p>Consultation in preparation of the EP</p>	<p>Section 5</p>
<p>Regulation 34(h): complies with the Act and the regulations</p>	<p>Regulation 23: Details of the Titleholder and liaison person Regulation 24(c): Details of all reportable incidents in relation to the proposed activity.</p>	<p>All contents of the EP must comply with the Act and the regulations</p>	<p>Section 1.6 Section 7.9</p>

1.6 Description of the Titleholder

Woodside is the Titleholder and operator for this activity on behalf of a Joint Venture including Woodside Energy Ltd and Mitsui E&P Australia Pty Ltd.

Woodside's mission is to deliver affordable energy solutions and superior outcomes for stakeholders by being society's trusted energy partner. Woodside's strategy is to provide the low cost, lower carbon energy our world needs. We have significant opportunities to prosper and grow. Our three pillars – oil, gas and new energy – each have a role to play in our future. Wherever Woodside works, it is committed to living its values of one team, we care, innovation, results matter, and we build and maintain trust.

Woodside's operations are characterised by strong safety and environmental performance in remote and challenging locations.

Through collaboration, Woodside leverages its capabilities to progress its growth strategy. Since 1984, the company has been operating the landmark Australian project, the North West Shelf (NWS), and it remains one of the world's premier liquefied natural gas (LNG) facilities. In 2012, Woodside added the Pluto LNG Plant to its onshore operating facilities.

Woodside has an excellent track record of efficient and safe production. Woodside strives for excellence in safety and environmental performance and continues to strengthen relationships with customers, partners, co-venturers, governments and communities. Further information about Woodside can be found at <http://www.woodside.com.au>.

1.7 Details of Titleholder, Liaison Person and Public Affairs Contact

In accordance with regulation 23 of the Environment Regulations, details of the titleholder and liaison person and arrangements for the notification of changes are described below.

1.7.1 Titleholder

Woodside Energy Limited
11 Mount Street
Perth, Western Australia
T: 08 9348 4000
ACN: 63 005 482 986

1.7.2 Nominated Liaison Person

Andrew Winter
Corporate Affairs Manager
11 Mount Street
Perth, Western Australia
T: 08 9348 4000
E: feedback@woodside.com.au

1.7.3 Arrangements for Notifying Change

If the titleholder, titleholder's nominated liaison person, or the contact details for the titleholder or the liaison person change, then NOPSEMA will be notified of the change in writing within two weeks or as soon as practicable.

1.8 Woodside Management System

The Woodside Management System (WMS) provides a structured framework of documentation to set common expectations governing how all employees and contractors at Woodside will work. Many of the standards presented in **Section 6** are drawn from the WMS documentation, which comprises four elements: Our Values and Policies; Expectations; Processes and Procedures; and Guidelines, as outlined below (and illustrated in **Figure 1-1**):

- **Our Values and Policies:** Set the enterprise-wide direction for Woodside by governing our behaviours, actions, and business decisions and ensuring we meet our legal and other external obligations.
- **Expectations:** Set essential activities or deliverables required to achieve the objectives of the Key Business Activities and provide the basis for developing processes and procedures.
- **Processes and Procedures:** Processes identify the set of interrelated or interacting activities that transforms inputs into outputs, to systematically achieve a purpose or specific objective. Procedures specify what steps, by whom, and when required to carry out an activity or a process.
- **Guidelines:** Provide recommended practice and advice on how to perform the steps defined in Procedures, together with supporting information and associated tools. Guidelines provide advice on: how activities or tasks may be performed; information that may be taken into consideration; or, how to use tools and systems.

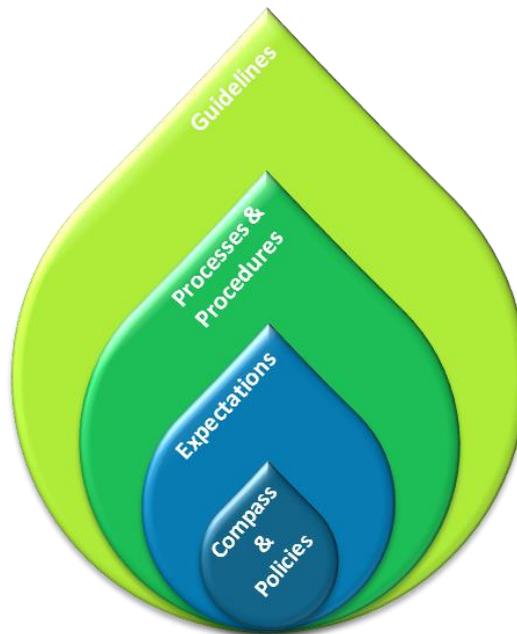


Figure 1-1: The four major elements of the Woodside Management System Seed

The WMS is organised within a Business Process Hierarchy based upon Key Business Activities to ensure the system remains independent of organisation structure, is globally applicable and scalable wherever required. These Key Business Activities are grouped into Management, Support, and Value Stream activities, as shown in **Figure 1-2**. The Value Stream activities capture, generate and deliver value through the exploration and production lifecycle. The Management activities influence all areas of the business, while Support activities may influence one or more value stream activities.

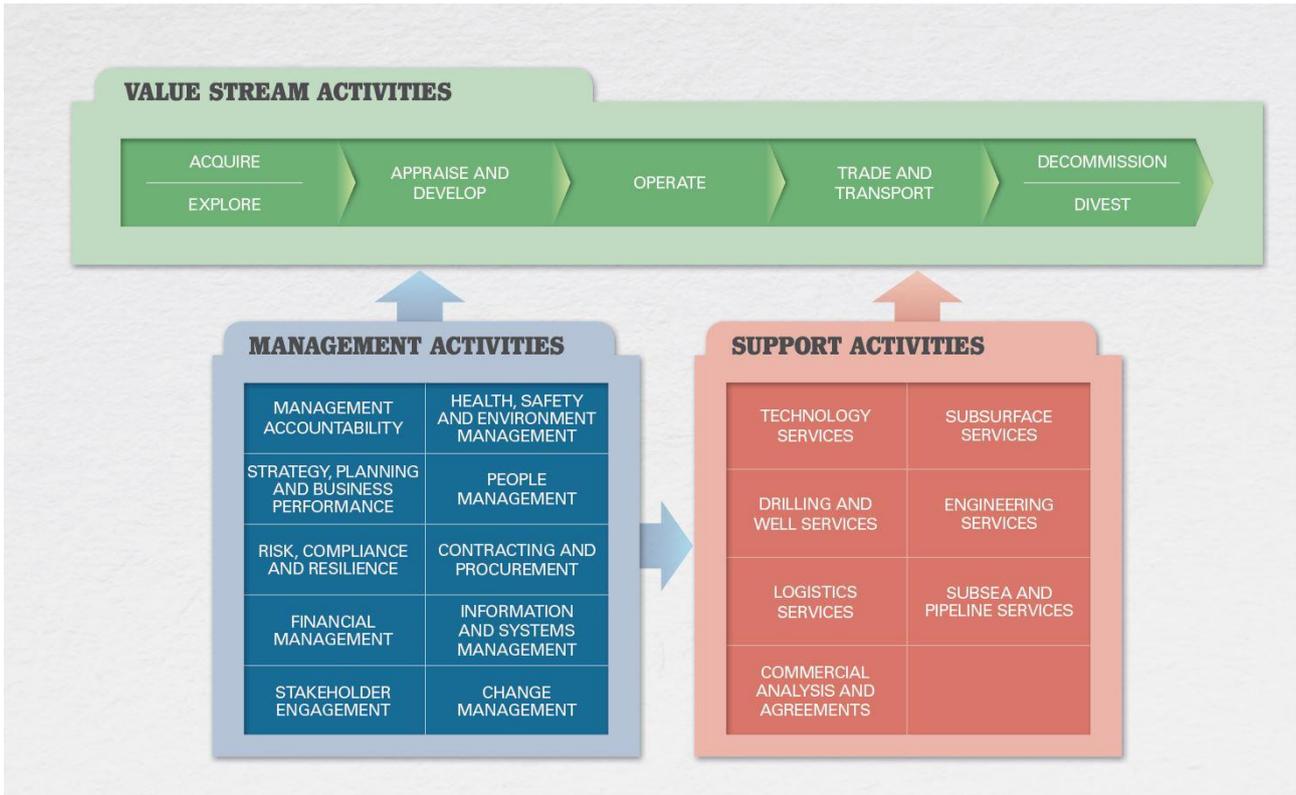


Figure 1-2: The Woodside Management System business process hierarchy

1.8.1 Environment and Biodiversity Policy

In accordance with regulation 24(a) of the Environment Regulations, Woodside’s Environment and Biodiversity Policy is provided in this EP.

1.9 Description of Relevant Requirements

In accordance with regulation 21(4) of the Environment Regulations, a description of requirements, including legislative requirements, that apply to the activity and are relevant to the management of risks and impacts of the Petroleum Activities Program are detailed in this EP. This EP will not be assessed under the Western Australia (WA) *Environment Protection Act 1986* as the activity does not occur on State land or within State Waters.

1.9.1 Offshore Petroleum and Greenhouse Gas Storage Act 2006

The Commonwealth *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) controls exploration and production activities beyond three nautical miles (nm) of the mainland (and islands) to the outer extent of the Australian Exclusive Economic Zone at 200 nm.

The relevant requirements in section 572 of the OPGGS Act are detailed in **Table 1-3**.

Table 1-4: Conditions from Greater Enfield (Vincent) Petroleum Field (EPBC 2005/2110) relevant to the Petroleum Activities Program

Condition Number	Condition	Relevant section of the EP
1 ¹	<p>The person taking the action must submit, for the Minister's approval, a plan (or plans) for managing the offshore impacts of the action. The plan (or plans) must include measures for:</p> <p>c) Operations:</p> <ul style="list-style-type: none"> - trading tanker vetting procedures - produced formation water and naturally occurring radioactive materials (NORMs) monitoring and management - interaction procedures for supply vessels and aircraft that are consistent with Part 8 of the Environment Protection and Biodiversity Conservation Regulations 2000 - monitoring of noise effects of operations on cetaceans - cetacean and whale shark sightings reporting - individual offshore activities may not commence until the plan (or plans) for that specific activity has been approved. The approved plan (or plans) must be implemented. 	<p>Section 7.1.5 and 7.7.4 Section 3.6.3 and 6.7.2 Section 6.6.3 and 6.7.3 Section 6.6.3 Section 7.7.1 and 7.9.3</p>
2	<p>The person taking the action must submit, for the Minister's approval, an oil spill contingency plan to mitigate the environmental effects of any hydrocarbon spills. The oil spill contingency plan must include:</p> <ul style="list-style-type: none"> • the types of dispersants, protective booms, clean up gear and related equipment to be used in an oil spill and the storage arrangements • a demonstrated capacity to deploy oil response equipment within 12 hours • training of staff in oil spill response measures • identification of sensitive areas, in particular Ningaloo Marine Park, and specific response measures for these areas • details of the insurance arrangements that have been made in respect of the costs associated with repairing any environmental damage arising from potential oil spills • the reporting of oil spill incidents. <p>Offshore construction may not commence until the plan is approved. The approved plan must be implemented.</p>	<p>Woodside's emergency preparedness and response arrangements (refer to Section 7.11, and associated documents).</p>
3	<p>Woodside Energy Limited must submit a decommissioning plan (or plans) for approval by the Minister one year prior to decommissioning the floating production, storage and offtake vessel, and three months prior to decommissioning any subsea wells, flowlines or any associated infrastructure. The plan (or plans) must consider the complete removal of all structures and components above the sea floor. The approved plan must be implemented.</p>	<p>Decommissioning beyond the scope of the EP.</p>

¹ Condition 1a) and 1b) (not shown) have been met through previous plans.

Condition Number	Condition	Relevant section of the EP
6	If the person taking the action proposes to undertake any subsea tie-in not included in approved plans pursuant to conditions 1, 2 and 3, the person taking the action must revise such plans or submit a new plan or plans so as to address the activities associated with, and potential environmental impacts of, the subsea tie-in. Activities associated with subsea tie-ins may not be commenced until each such plan or revised plan has been approved by the Minister. Each plan or revised plan that has been approved by the Minister must be implemented.	The implementation of this EP is considered to meet this Condition (i.e. this EP is submitted as the 'revised plan' to address aspects of conditions 1, 2 and 3 applicable to the subsea tie-in operation).
10	A plan required by condition 1, 2, 3 or 6 is automatically deemed to have been submitted to, and approved by, the Minister if the measures (as specified in the relevant condition) are included in an environment plan (or environment plans) relating to the taking of the action that: <ul style="list-style-type: none"> • was submitted to NOPSEMA after 27 February 2014 and either: <ul style="list-style-type: none"> • is in force under the OPGGS Environment Regulations, or • has ended in accordance with regulation 25A of the OPGGS Environment Regulations. 	The implementation of this EP is considered to meet this Condition.
10A	Where a plan required by condition 1, 2 or 6 has been approved by the Minister and the measures (as specified in the relevant condition) are included in an environment plan (or environment plans) that: <ul style="list-style-type: none"> • was submitted to NOPSEMA after 27 February 2014 and either: <ul style="list-style-type: none"> • is in force under the OPGGS Environment Regulations, or • has ended in accordance with regulation 25A of the OPGGS Environment Regulations. The plan approved by the Minister no longer needs to be implemented	The implementation of this EP is considered to meet this Condition and supersedes previously approved plans.
10B	Where an environment plan, which includes measures specified in the conditions referred to in conditions 10 and 10A above, is in force under the OPGGS Environment Regulations that relates to the taking of the action, the person taking the action must comply with those measures as specified in that environment plan.	The implementation of this EP is considered to meet this Condition.

1.9.2.1 Offshore Project Proposal

An OPP is not required for operating the NY facility as it has already received approval under the EPBC Act (see **Section 1.9.2** (EPBC Act)).

The EPBC referral 2005/2110 and EIS includes provision for future expansion activities including additional production wells and possible tie-backs within the Greater Enfield (Vincent) development area. The accepted development approach includes an initial development of six production wells as well as one to two water re-injection and one to two gas re-injection wells, followed by future expansion comprising around 14 to 28 additional production wells, as well as two to four additional water re-injection wells and one to two additional gas re-injection wells. The proposed additional two new wells fall within this approved development description as currently there are 19 production wells.

The notional Greater Enfield (Vincent) development area is defined in EPBC 2005/2110 as a 25 km radius surrounding the Vincent-1 well site. The two new wells would be within this area. The two new wells are therefore within the scope of the EPBC referral and EIS approved by the Minister for the Environment and an OPP is not required. The drilling, installation, tie-back and cold commissioning activities of the two new well(s), if developed, would be the subject of a separate EP. Well start-up and hot commissioning activities are described within this EP.

1.9.2.2 Recovery Plans and Threat Abatement Plans

Under s139(1)(b) of the EPBC Act, the Environment Minister must not act inconsistently with a recovery plan for a listed threatened species or ecological community or a threat abatement plan for a species or community protected under the Act. Similarly, under s268 of the EPBC Act:

“A Commonwealth agency must not take any action that contravenes a recovery plan or a threat abatement plan.”

In relation to offshore petroleum activities in Commonwealth waters, these requirements are now administered by NOPSEMA in accordance with commitments set out in the Programs. Relevant recovery plans or threat abatement plans relevant to the scope of this EP have been assessed in **Section 6.9**.

1.9.2.3 Australian Marine Parks

Under the EPBC Act, Australian Marine Parks (AMPs), formally known as Commonwealth Marine Reserves, are recognised for conserving marine habitats and the species that live and rely on these habitats. The Director of National Parks (DNP) is responsible for managing AMPs (supported by Parks Australia) and is required to publish management plans for them. Other parts of the Commonwealth Government must not perform functions or exercise powers in relation to these parks that are inconsistent with management plans (s362 of the EPBC Act). Relevant AMPs are listed in **Section 4.8**. The North-west Marine Parks Network Management Plan describes the requirements for management.

1.9.2.4 World Heritage Properties

Australian World Heritage management principles are prescribed in Schedule 5 of the EPBC Regulations 2000. Management principles that are considered relevant to the scope of this EP are provided in **Table 1-5**.

Table 1-5: Relevant management principles under Schedule 5 – Australian World Heritage management principles of the Environment Protection and Biodiversity Conservation Act

Number	Principle	Relevant Section of the EP
3	<p>Environmental impact assessment and approval</p> <p>3.01 This principle applies to the assessment of an action that is likely to have a significant impact on the World Heritage values of a property (whether the action is to occur inside the property or not).</p> <p>3.02 Before the action is taken, the likely impact of the action on the World Heritage values of the property should be assessed under a statutory environmental impact assessment and approval process.</p> <p>3.03 The assessment process should:</p> <ul style="list-style-type: none"> • identify the World Heritage values of the property that are likely to be affected by the action • examine how the World Heritage values of the property might be affected • provide for adequate opportunity for public consultation. <p>3.04 An action should not be approved if it would be inconsistent with the protection, conservation, presentation or transmission to future generations of the World Heritage values of the property.</p> <p>3.05 Approval of the action should be subject to conditions that are necessary to ensure protection, conservation, presentation or transmission to future generations of the World Heritage values of the property.</p> <p>3.06 The action should be monitored by the authority responsible for giving the approval (or another appropriate authority) and, if necessary, enforcement action should be taken to ensure compliance with the conditions of the approval.</p>	<p>3.01 and 3.02: Assessment of significant impact on World Heritage values is included in Section 6. Principles are met by the submitted EP.</p> <p>3.03 (a) and (b): World Heritage values are identified in Section 4 and considered in the assessment of impacts and risks for the Petroleum Activity in Section 6.</p> <p>3.03 (c): Relevant stakeholder consultation and feedback received in relation to impacts and risks to the Ningaloo World Heritage Property are outlined in Section 5.</p> <p>3.04, 3.05 and 3.06: Principles are considered to be met by the acceptance of this EP.</p>

Note that sections 1 – General Principles and 2 – Management Planning of schedule 5 are not considered relevant to the scope of this EP and, therefore, have not been included.

2 ENVIRONMENT PLAN PROCESS

2.1 Overview

This section outlines the process taken by Woodside to prepare this EP, once the activity was defined as a petroleum activity. The process describes the activity, the existing environment, followed by the environmental risk management methodology used to identify, analyse and evaluate risks to meet ALARP levels and acceptability requirements, and develop EPOs and EPSs. This section also describes Woodside's risk management methodologies as applied to implementation strategies for the activity.

Regulation 21(5) of the Environment Regulations requires the EP to include details of the environmental impacts and risks for the Petroleum Activities Program, and an evaluation of all the impacts and risks, appropriate to the nature and scale of each impact and risk. The objective of the risk assessment process described in this section is to identify risks and associated impacts of an activity, so they can be assessed, and appropriate control measures applied to eliminate, control or mitigate the impact/risk to ALARP, and to determine if the impact or risk level is acceptable.

Environmental impacts and risks include those directly and indirectly associated with the Petroleum Activities Program, and include potential emergency and accidental events:

- **Planned activities** have the inherent potential to cause environmental impacts.
- **Environmental risks** are unplanned events with the potential for environmental impact (termed risk 'consequence').

In this section, potential impacts from planned activities are termed 'impacts', and 'risks' are associated with unplanned events with the potential for environmental impact (should the risk be realised), with such impacts termed potential 'consequences'.

2.2 Environmental Risk Management Methodology

2.2.1 Woodside Risk Management Process

Woodside recognises risk is inherent to its business and effective management of risk is vital to delivering on company objectives, success and continued growth. Woodside is committed to managing risk proactively and effectively. The objective of Woodside's risk management system is to provide a consistent process for recognising and managing risks across Woodside's business. Achieving this objective includes ensuring risks consider impacts across these key areas of exposure: health and safety, environment, finance, reputation and brand, legal and compliance, and social and cultural.

The environmental risk management methodology used in this EP is based on Woodside's Risk Management Procedure. This procedure aligns to industry standards, such as International Organization for Standardization (ISO) 31000. Woodside's WMS risk management procedures, guidelines and tools provide guidance of specific techniques for managing risk, tailored for particular areas of risk within certain business processes. Procedures applied for environmental risk management include:

- Health, Safety and Environment Management Procedure
- Impact Assessment Procedure
- Process Safety Management (PSM) Procedure.

The risk management methodology provides a framework to demonstrate that risks and impacts are continually identified, reduced to ALARP and assessed to be at an acceptable level, as required by the Environment Regulations. The key steps of Woodside's risk management process are shown in

Figure 2-1. A description of each step and how it is applied to the scopes of this activity is provided in **Section 2.2** to **Section 2.11**.



Figure 2-1: Woodside’s risk management process

2.2.2 Health, Safety and Environment Management Procedure

The Health, Safety and Environment Management Procedure provides the structure for managing health, safety and environment (HSE) risks and impacts across Woodside, defines the decision authorities for company-wide HSE management activities and deliverables, and supports continuous improvement in HSE management.

2.2.3 Impact Assessment Procedure

To support effective environmental impact and risk assessment, Woodside’s Impact Assessment Procedure (**Figure 2-2**) provides the steps to meet the required environment, health and social standards by ensuring impact assessments are undertaken appropriate to the nature and scale of the activity, the regulatory context, the receiving environment, interests, concerns and rights of stakeholders, and the applicable framework of standards and practices.

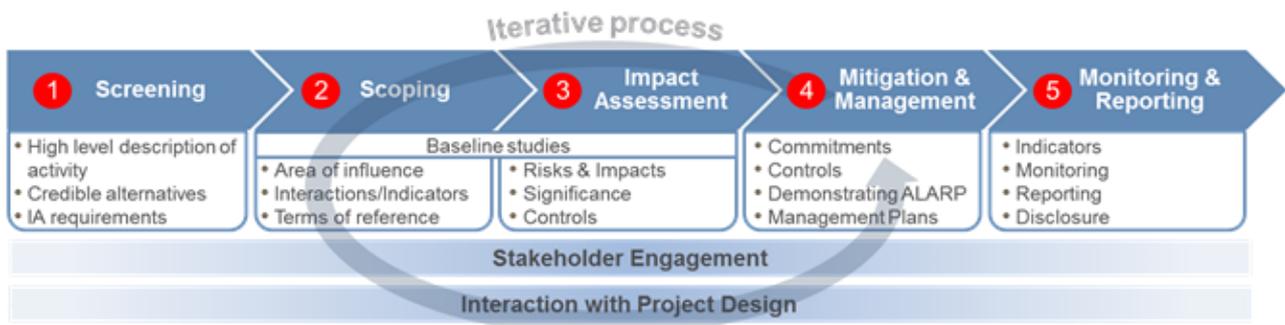


Figure 2-2: Woodside’s impact assessment process

2.2.4 Process Safety Management Procedure and Process Safety Risk Assessment Procedure

Due to the nature and scale of petroleum activities, Woodside’s PSM Procedure establishes Woodside’s framework for PSM (**Section 7.1.3**). This framework includes the Process Safety Risk Assessment Procedure (PSRA). The PSRA is a key part of Woodside’s PSM framework for

managing the integrity of systems and processes that handle hazardous substances over the exploration and production lifecycle. The PSRA sets out methods to ensure that process safety risks are understood and controlled, including that all process safety hazards are systematically identified, assessed and treated so that the associated risks are reduced to a level that is tolerable and ALARP.

2.3 Environment Plan Development Process

The EP development process is illustrated in **Figure 2-3**. Each element of this process is discussed further in **Section 2.5** to **Section 2.10**.

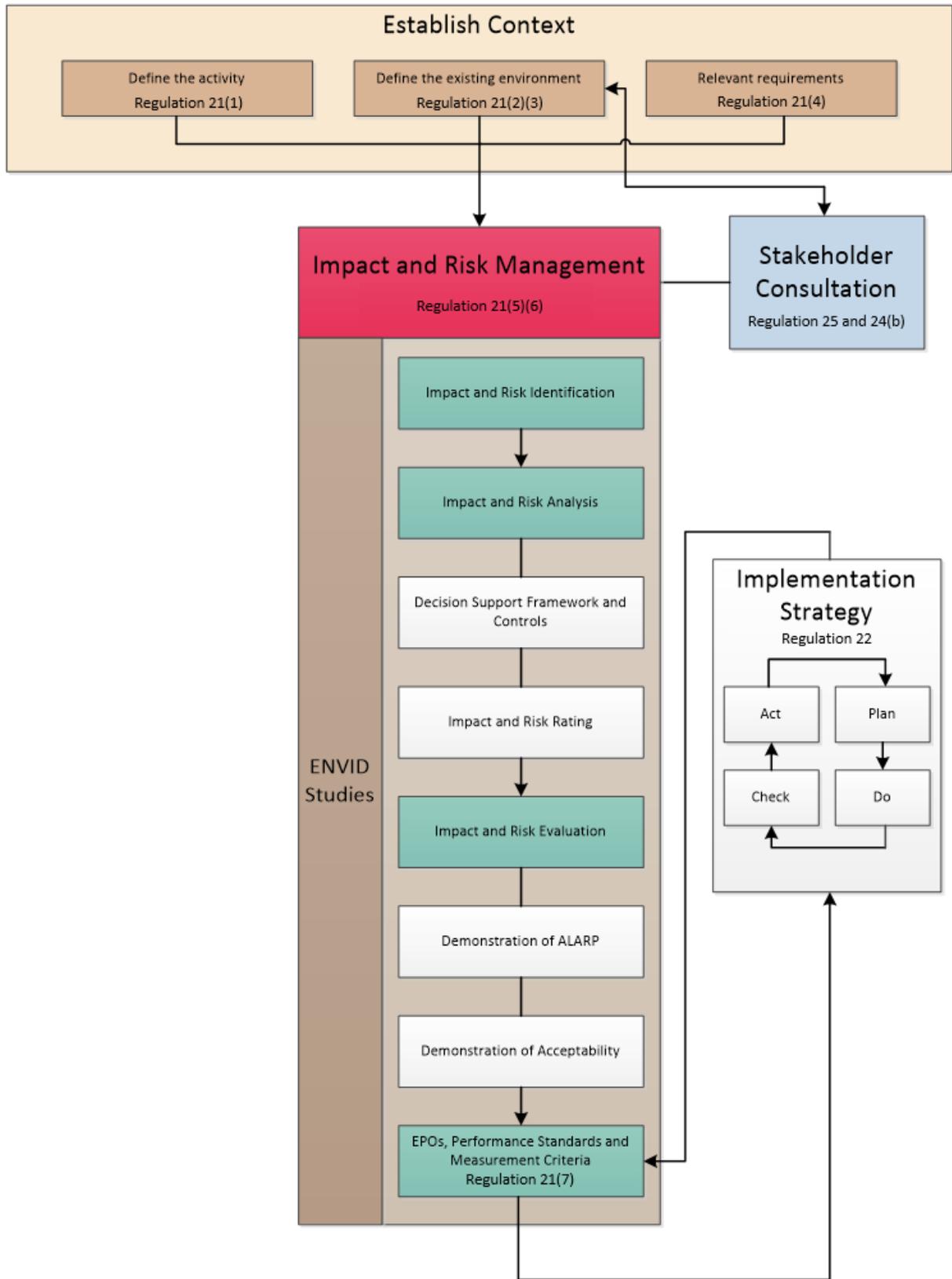


Figure 2-3: Environment Plan development process

2.4 Establish the Context

2.4.1 Define the Activity

This first stage involves evaluating whether the activity meets the definition of a 'petroleum activity' as defined in the Environment Regulations. The activity is described in relation to:

- the location
- what is to be undertaken
- how it is planned to be undertaken, including outlining operational details of the activity and proposed timeframes.

The 'what' and 'how' are described in the context of 'environmental aspects'² to inform the risk and impact assessment for planned (routine and non-routine) and unplanned (accidents, incidents and emergency conditions) activities.

The activity is described in **Section 3** and is referred to as the Petroleum Activities Program.

2.4.2 Define the Existing Environment

The context of the existing environment is described and determined by considering the nature and scale of the activity (size, type, timing, duration, complexity, and intensity of the activity), as described in **Section 3**. The purpose is to describe the existing environment that may be impacted by the activity, directly or indirectly, by planned or unplanned³ events.

The Existing Environment (**Section 4**) is structured into subsections defining the physical, biological, socio-cultural and cultural attributes of the area of interest, in accordance with the definition of environment in regulation 5(a) of the Environment Regulations. These subsections make particular reference to:

- The environmental, and social and cultural consequences as defined by Woodside (refer to **Table 2-3**), which address key physical and biological attributes, as well as social and cultural values of the existing environment. These consequence definitions are applied to the impact and risk analysis (refer **Section 2.2**) and rated for all planned and unplanned activities. Additional detail is provided for unplanned hydrocarbon spill risk evaluation.
- EPBC Act MNES, including listed Threatened species and ecological communities and listed Migratory species. Defining the spatial extent of the existing environment is guided by the nature and scale of the Petroleum Activities Program (and associated sources of environmental risk). This considers the Operational Area and wider environment that may be affected (EMBA), as determined by the hydrocarbon spill risk assessments presented in **Section 6.8**. MNES, as defined under the EPBC Act, are addressed through Woodside's impact and risk assessment (**Section 6**).
- Relevant values and sensitivities, which may include world or national heritage listed areas, listed Threatened species or ecological communities, listed Migratory species, or sensitive values.

By grouping potentially impacted environmental values by aspect (as presented in **Table 2-1**), the presentation of information about the receiving environment is standardised. This information is then

² An environmental aspect is an element of the activity that can interact with the environment.

³ For each source of risk, the credible worst-case scenario in conjunction with impact thresholds is used to determine the spatial extent of the EMBA. The worst-case unplanned event is considered to be an unplanned hydrocarbon release, further defined for each activity through the risk assessment process. Interpretation of stochastic oil spill modelling determines the EMBA for the release, which defines the spatial scale of the environment that may be potentially impacted by the Petroleum Activities Program and in turn provides context to the 'nature and scale' of the existing environment.

consistently applied to the risk evaluation section to provide a robust approach to the overall environmental risk evaluation and its documentation in the EP.

Table 2-1: Example of the environment values potentially impacted which are assessed within the Environment Plan

Environmental Value Potentially Impacted						
Regulations 13(2)(3)						
Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitats	Species	Socio-economic

2.4.3 Relevant Requirements

The relevant requirements in the context of legislation, other environmental approval requirements, conditions and standards that apply to the Petroleum Activities Program are identified and reviewed.

2.5 Impact and Risk Identification

Relevant environmental aspects and hazards were identified that support the process to define environmental impacts and risks associated with an activity.

The environmental impact and risk assessment presented in this EP has been informed by recent and historic hazard and environmental risk identification studies (e.g. HAZID/ENVID), consequence modelling studies for high consequence, low probability environmental risks, bowtie risk assessments for Major Environmental Events (MEEs) as required by Woodside’s PSRA processes, desktop reviews and studies associated with the Petroleum Activities Program. Impacts, risks and potential consequences were identified based on planned and potential interaction with the activity (based on the description in **Section 3**), the existing environment (**Section 4**) and the outcomes of Woodside’s stakeholder engagement process (**Section 5**). The environmental outputs of applicable risk and impact workshops and associated studies are referred to as ENVID in this EP.

An environmental impacts and risks identification and assessment workshop was undertaken by multidisciplinary teams comprising relevant operational and environmental personnel with sufficient breadth of knowledge, training and experience to reasonably assure that risks and impacts were identified, and their potential environmental consequences assessed. Impacts and risks were identified, during the workshop, for both planned (routine and non-routine) activities and unplanned (accidents/incidents/emergency conditions) events. During this process, risks identified as not applicable (not credible) were removed from the assessment.

Impacts and risks were evaluated and tabulated for each planned activity and unplanned events respectively. Environmental impacts and risks were recorded in an environmental impacts and risk register. The output of the workshop is used to present the risk assessment and form the basis of EPOs, EPSs, and MC. This information is presented in **Section 6**, following the format presented in **Table 2-2**.

Table 2-2: Example of layout of identification of risks and impacts in relation to risk sources

Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-cultural	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Summary of source of impact/risk														

2.6 Impact and Risk Analysis

Risk analysis further develops the understanding of a risk by defining the impacts and assessing appropriate controls, as well as considering previous risk assessments for similar activities, relevant studies, past performance, consultation feedback, and the existing environment.

These key steps were undertaken for each identified risk during the risk assessment:

- Identify the Decision Type in accordance with the decision support framework.
- Identify appropriate control measures (preventive and mitigation) aligned with the Decision Type.
- Assess the risk rating.

2.6.1 Decision Support Framework

To support the risk assessment process and Woodside’s determination of acceptability (**Section 2.8.2**), Woodside’s HSE risk management procedures include the use of a decision support framework based on principles set out in the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This concept is integrated into the environmental impacts and risks identification and assessment workshop to determine the level of supporting evidence that may be required to draw sound conclusions regarding risk level and whether the risk is acceptable and ALARP (**Figure 2-4**). Application of the decision support framework confirms:

- activities do not pose an unacceptable environmental risk
- appropriate focus is placed on activities where the impact or risk is anticipated to be acceptable and demonstrated to be ALARP
- appropriate effort is applied to manage risks and impacts based on the uncertainty of the risk, the complexity and risk rating (i.e. potential higher order environmental impacts are subject to further evaluation/assessment).

The framework provides appropriate tools commensurate to the level of uncertainty or novelty associated with the risk/impact (referred to as Decision Type A, B, or C). The Decision Type is selected based on an informed discussion around the uncertainty of the risk/impact and is documented in impact and risk register worksheets.

This framework enables Woodside to appropriately understand a risk and determine if the risk or impact is acceptable and can be demonstrated to be ALARP.

2.6.1.1 Decision Type A

Decision Type A risks and impacts are well understood and established practice. They are generally recognised as good industry practice and are often embodied in legislation, codes and standards, and utilise professional judgment.

2.6.1.2 Decision Type B

Decision Type B risks and impacts typically involve greater uncertainty and complexity; and can include potential higher-order impacts/risks. These risks may deviate from established practice or have some lifecycle implications and therefore require further engineering risk assessment to support the decision and ensure that the risk is ALARP. Engineering risk assessment tools may include:

- risk-based tools such as cost-based analysis or modelling
- consequence modelling
- reliability analysis
- company values.

2.6.1.3 Decision Type C

Decision Type C risks and impacts typically have significant risks related to environmental performance. Such risks typically involve greater complexity and uncertainty therefore requiring the adoption of the precautionary approach. The risks may result in significant environmental impact, significant project risk/exposure, or may elicit negative stakeholder concerns. For these risks or impacts, in addition to Decision Type A and B tools, company and societal values need to be considered by undertaking broader internal and external consultation as part of the risk assessment process.

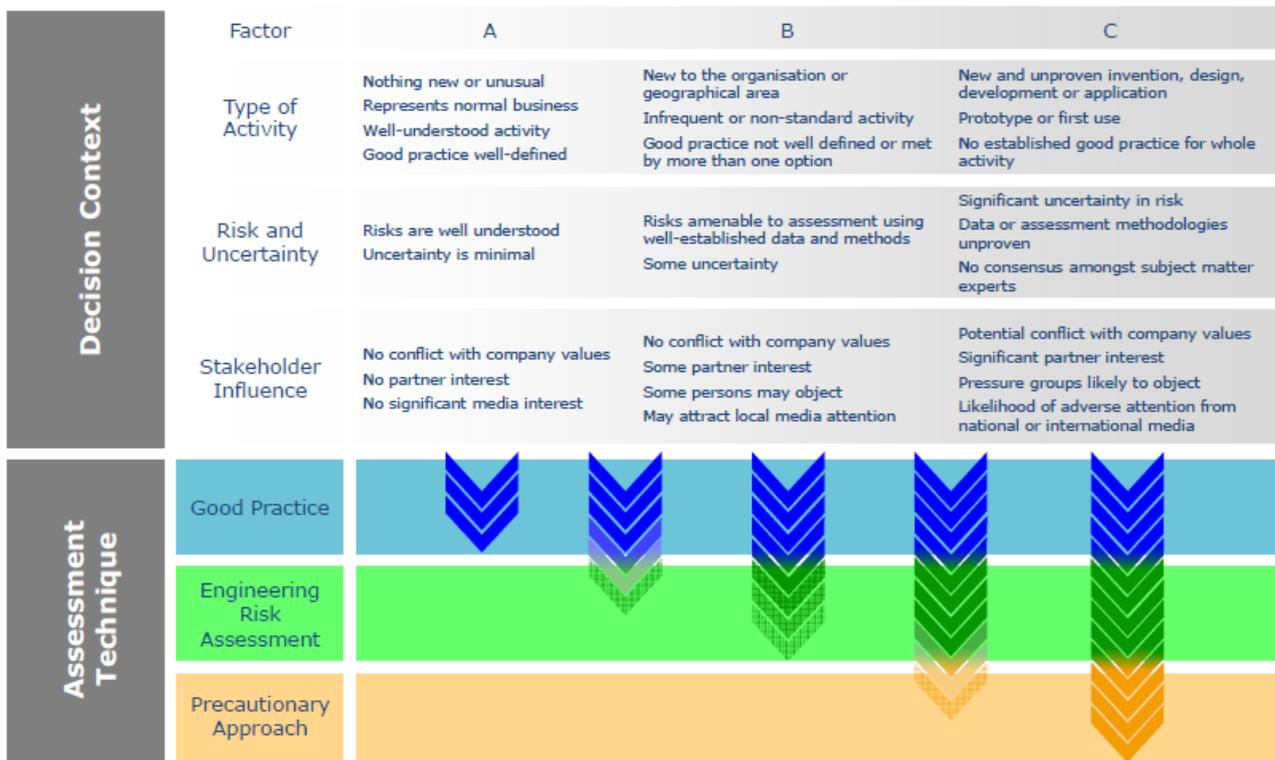


Figure 2-4: Risk-related decision-making framework (Oil and Gas UK, 2014)

2.6.1.4 Decision Support Framework Tools

These framework tools are applied, as appropriate, to help identify control measures based on the Decision Type described above:

- **Legislation, Codes and Standards (LCS)** – identifies the requirements of legislation, codes and standards that are to be complied with for the activity.
- **Good Industry Practice (GP)** – identifies further engineering control standards and guidelines that may be applied by Woodside above that required to meet the LCS.
- **Professional Judgement (PJ)** – uses relevant personnel with the knowledge and experience to identify alternative controls. Woodside applies the hierarchy of control as part of the risk assessment to identify any alternative measures to control the risk.
- **Risk-based Analysis (RBA)** – assesses the results of probabilistic analyses such as modelling, quantitative risk assessment and/or cost–benefit analysis to support the selection of control measures identified during the risk assessment process.
- **Company Values (CV)** – identifies values in Woodside’s code of conduct, policies and Our Values. Views, concerns and perceptions are to be considered from internal Woodside stakeholders directly affected by the planned impact or potential risk.
- **Societal Values (SV)** – identifies the views, concerns and perceptions of relevant stakeholders and addresses relevant stakeholder views, concerns and perceptions.

2.6.1.5 Decision Calibration

To determine that the alternatives selected and control measures applied are suitable, these tools may be used for calibration (i.e. checking) where required:

- **LCS/Verification of Predictions** – Verification of compliance with applicable LCS and/or good industry practice.
- **Peer Review** – Independent peer review of PJs, supported by RBA, where appropriate.
- **Benchmarking** – Where appropriate, benchmarking against a similar facility or activity type or situation that has been deemed to represent acceptable risk.
- **Internal Consultation** – Consultation undertaken within Woodside to inform the decision and verify company values are met.
- **External Consultation** – Consultation undertaken to inform the decision and verify societal values are considered.

Where appropriate, additional calibration tools may be selected specific to the Decision Type and the activity.

2.6.2 Control Measures (Hierarchy of Controls)

Risk reduction measures are prioritised and categorised in accordance with the hierarchy of controls, where risk reduction measures at the top of the hierarchy take precedence over risk reduction measures further down:

- **Elimination** of the risk by removing the hazard.
- **Substitution** of a hazard with a less hazardous one.
- **Engineering Controls** include design measures to prevent or reduce the frequency of the risk event, or detect or control the risk event (limiting the magnitude, intensity and duration) such as:
 - prevention: design measures that reduce the likelihood of a hazardous event occurring

- detection: design measures that facilitate early detection of a hazardous event
 - control: design measures that limit the extent/escalation potential of a hazardous event
 - mitigation: design measures that protect the environment if a hazardous event occurs
 - response equipment: design measures or safeguards that enable clean-up/response after a hazardous event occurs.
- **Procedures and Administration** includes management systems and work instructions used to prevent or mitigate environmental exposure to hazards.
 - **Emergency Response and Contingency Planning** includes methods to enable recovery from the impact of an event (e.g. protection barriers deployed near the sensitive receptor).

2.6.3 Impact and Risk Classification

Environmental impacts and risks are assessed to determine the potential impact significance/consequence. The impact significance/consequence considers the magnitude of the impact or risk and the sensitivity of the potentially impacted receptor (**Figure 2-5**).

The impact and risk information, including classification and evaluation information as shown in the example (**Table 2-2**), are tabulated for each planned activity and unplanned event.

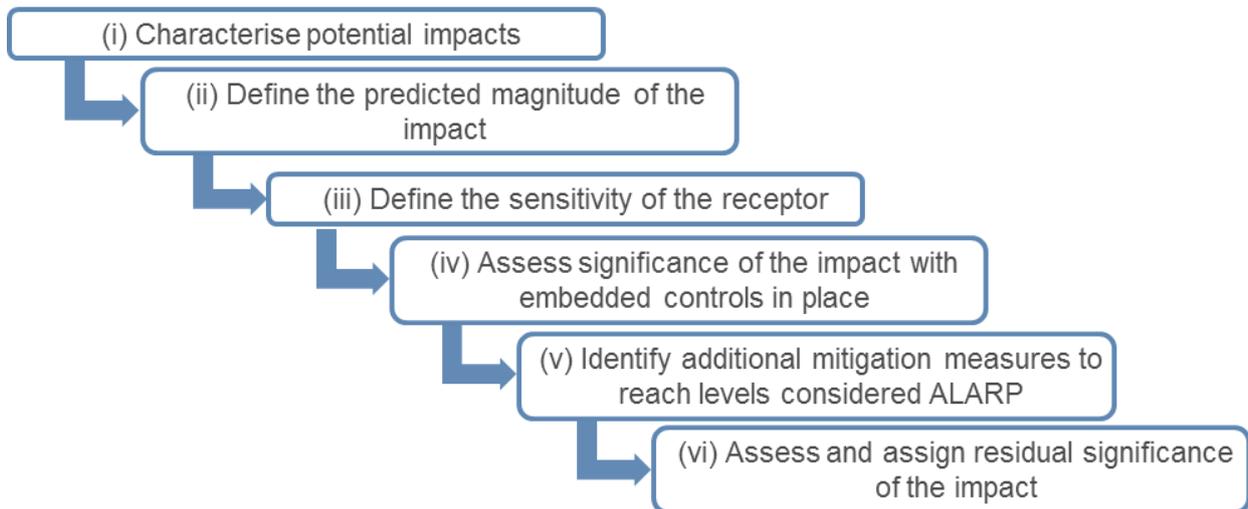


Figure 2-5: Environmental risk and impact analysis

2.6.3.1 Impact Rating Process

Impacts are classified in accordance with the consequence (**Table 2-3**) outlined in Woodside’s Risk Management Procedure.

Table 2-3: Woodside Risk Matrix (environment and social and cultural) consequence descriptions

Environment	Social and Cultural	Consequence Level
Catastrophic, long-term impact (>50 years) on highly valued ecosystem, species, habitat or physical or biological attribute.	Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued area/item of international cultural significance.	A
Major, long-term impact (10 to 50 years) on highly valued ecosystem, species, habitat or physical or biological attribute.	Major, long-term impact (5 to 20 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	B
Moderate, medium-term impact (2 to 10 years) on ecosystem, species, habitat or physical or biological attribute.	Moderate, medium-term impact (2 to 5 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	C
Minor, short-term impact (1 to 2 years) on species, habitat (but not affecting ecosystem function), physical or biological attribute.	Minor, short-term impact (1 to 2 years) to a community or highly valued area/item of cultural significance.	D
Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attribute.	Slight, short-term impact (<1 year) to a community or area/item of cultural significance.	E
No lasting effect (<1 month). Localised impact not significant to environmental receptor.	No lasting effect (<1 month). Localised impact not significant to area/item of cultural significance.	F

2.6.3.2 Risk Rating Process

The risk rating process assigns a level of risk to each risk event, measured in terms of consequence and likelihood. The assigned risk rating is determined with controls in place, therefore; the risk rating is determined after identifying the Decision Type and appropriate control measures.

The risk rating process considers the potential environmental consequences and, where applicable, the social and cultural consequences of the risk. The risk ratings are assigned using the Woodside Risk Matrix (refer to **Figure 2-6**). Risks are assessed qualitatively and/or quantitatively in terms of both likelihood and consequence in accordance with this matrix.

The risk rating process is undertaken using the steps described in the subsections below.

2.6.3.3 Select the Consequence Level

Determine the worst-case credible consequence (**Table 2-3**) associated with the selected event, assuming all controls (preventive and mitigative) are absent or have failed. If more than one potential consequence applies, select the highest severity consequence level.

2.6.3.4 Select the Likelihood Level

Determine the description that best fits the chance of the selected consequence occurring, assuming reasonable effectiveness of the prevention and mitigation controls (**Table 2-4**).

Table 2-4: Woodside Risk Matrix likelihood levels

Likelihood Description						
Frequency	1 in 100,000 to 1,000,000 years	1 in 10,000 to 100,000 years	1 in 1000 to 10,000 years	1 in 100 to 1000 years	1 in 10 to 100 years	>1 in 10 years
Experience	Remote: Unheard of in the industry	Highly Unlikely: Has occurred once or twice in the industry	Unlikely: Has occurred many times in the industry but not at Woodside	Possible: Has occurred once or twice in Woodside or may possibly occur	Likely: Has occurred frequently at Woodside or is likely to occur	Highly Likely: Has occurred frequently at the location or is expected to occur
Likelihood Level	0	1	2	3	4	5

2.6.3.5 Calculate the Risk Rating

The risk rating is derived from the consequence and likelihood levels above, in accordance with the Woodside Risk Matrix shown in **Figure 2-6**. A likelihood and risk rating are only applied to environmental risks, not environmental impacts from planned activities.

This risk rating is used as an input into the risk evaluation process and ultimately for prioritising further risk reduction measures. Once each risk is treated to ALARP, the risk rating articulates the ALARP baseline risk as an output of the ENVID studies.

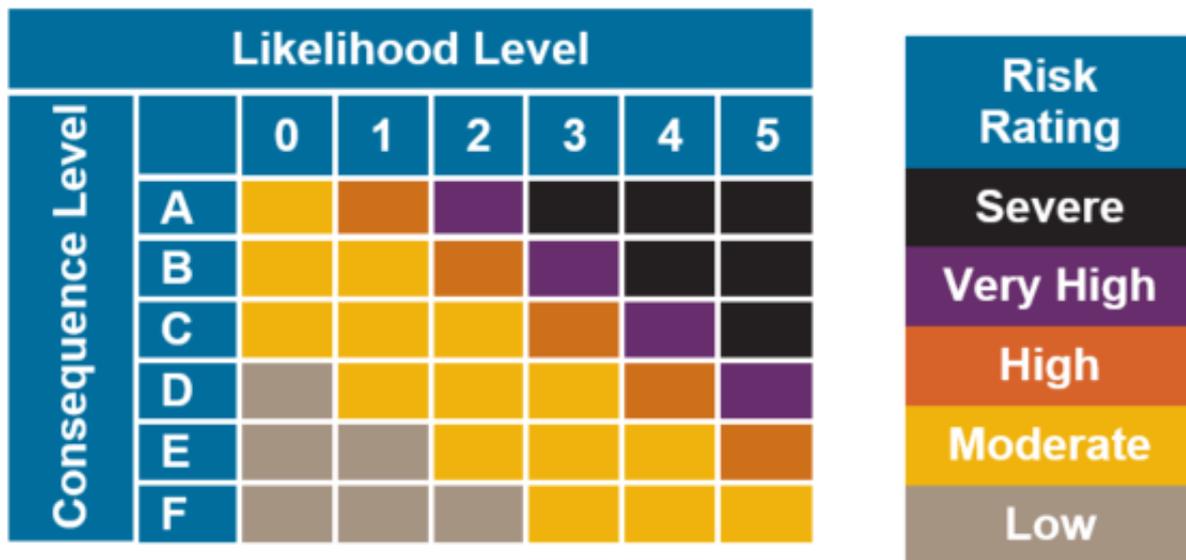


Figure 2-6: Woodside Risk Matrix risk rating

To support ongoing risk management (as a key component of Woodside’s PSM Framework – refer to the implementation strategy in **Section 7**), Woodside uses the concept of ‘current risk’ and applies a Current Risk Rating to indicate the current or ‘live’ level of risk, considering controls that are currently in place and effective on a day-to-day basis. The Current Risk Rating is effective in articulating potential divergence from baseline risk, such as if certain controls fail or could potentially be compromised. Current Risk Ratings aid in communicating and making visible the risk events and ensure the continual management of risk to ALARP by identifying risk reduction measures and assessing acceptability.

2.7 Classification and Analysis of Major Environment Events

For Woodside’s production facilities, a further level of analysis is undertaken to identify, classify and analyse MEEs. This extra level of rigour is applied to ensure sufficient controls are in place for risks with potential Level B and above consequences. In the health and safety area, Major Accident Events (MAEs) are identified using a similar process, which supports consistency in managing key risks within Woodside in accordance with Process Safety Risk Management Procedures.

Woodside defines a MEE as an event with potential environment, reputation (pertaining to environment events), social or cultural consequences of level B or higher as per Woodside’s Risk Matrix (**Figure 2-6**). MEEs are evaluated against credible worst-case scenarios that may occur when all controls are absent or have failed.

2.7.1 Major Environment Event Identification

The ENVID process identifies numerous sources of risk with differing consequence levels. These risks are screened for those risk events that meet the MEE criteria, and MEE risks are analysed further through detailed consequence modelling and probability/frequency studies and examined for ‘appropriateness’ of controls in a bowtie risk assessment.

Environmental risks that do not meet the MEE definition, although screened out of the MEE process, are still evaluated for ALARP and risk acceptability using the methodology described in **Section 2.8**. Some low/moderate consequence events that do not meet the MEE consequence threshold may still undergo additional consequence and probability assessment where they could have a high adverse impact on the company’s reputation or relationships with stakeholders, beyond requirement to demonstrate ALARP and acceptable risk levels following application of controls.

2.7.2 Major Environment Event Classification

A standard naming convention has been established for MEEs which is based around ensuring the MEE titles reflect the cause of the event (e.g. ‘subsea system loss of containment’) rather than the event itself (e.g. significant hydrocarbon spill to the marine environment). The MEEs are assigned a unique identification code (e.g. MEE-01, MEE-02, etc).

2.7.3 Bowtie Analysis

MEEs are subject to more detailed analysis using the bowtie risk assessment technique, which illustrates cause outcome pathways for each MEE and controls in place to prevent the ‘top event’ or mitigate the consequences (outcomes). The key drivers for adopting the bowtie technique for MEEs are that it:

- identifies the controls (prevention and mitigation barriers) necessary to ensure the risk is acceptable and ALARP
- supports the process of demonstrating ALARP (described in **Section 2.8.1**)
- enables verification of and linking to the relevant sections of the WMS that supports barriers
- improves the capacity for lessons learnt and incident prevention by being able to directly relate causes of an incident to those controls that failed
- ensures greater visibility and granularity in the assessment process and enables complex risk scenarios to be presented in an easy-to-understand format.

The bowtie technique (an example bowtie diagram is shown in **Figure 2-7**) shows the relationships between the ‘Causes’ that may lead to a particular unwanted event (‘Top Event’), together with the range of potential escalation paths that can lead to a variety of ‘Outcomes’ (or consequences). A bowtie also shows the preventive barriers that may prevent a Top Event from occurring specific to each Cause, and the mitigation barriers in place to limit the potential effects once the Top Event has been realised, specific to each credible MEE Outcome.

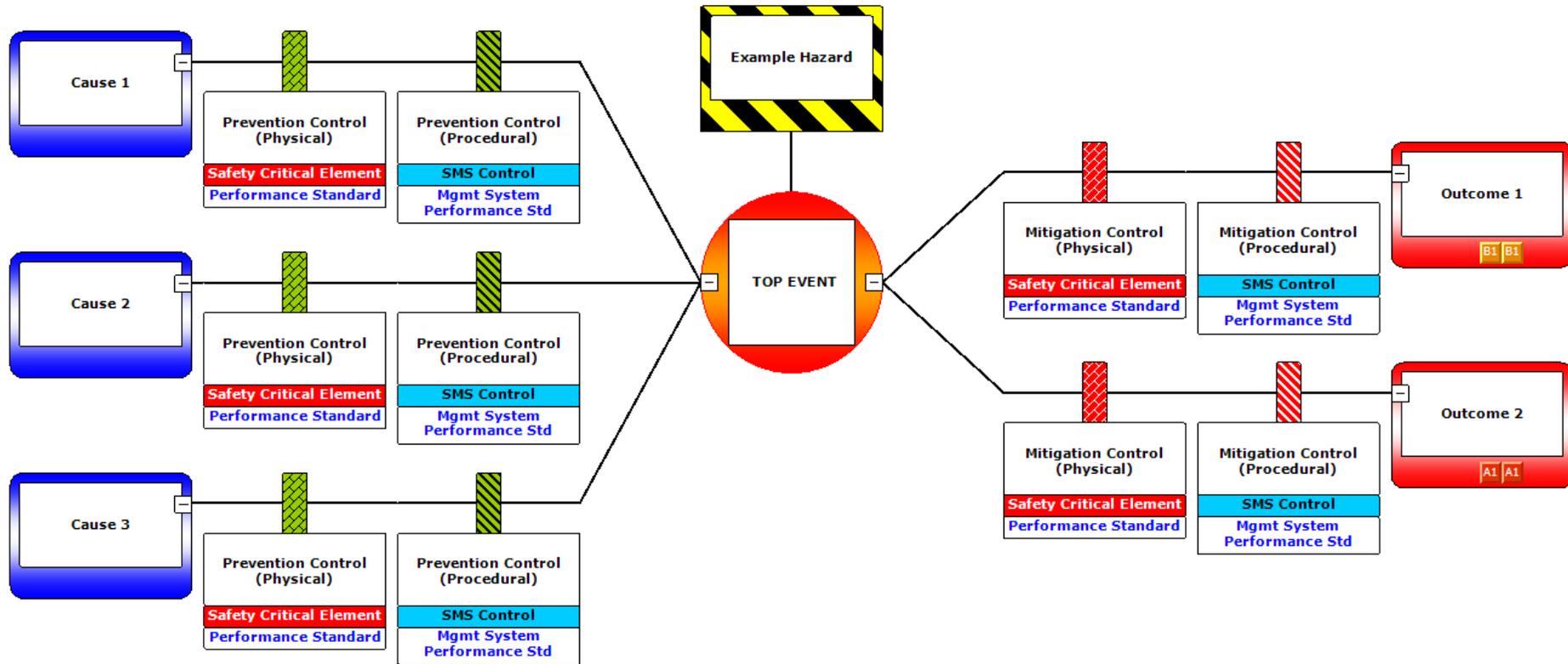


Figure 2-7: Example of bowtie diagram structure

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2.7.4 Major Environment Event Register

A MEE Register is prepared for each production facility after completing the bowtie diagrams. The purpose of the MEE Register is to record the MEE identification process, groupings, bowtie diagrams and datasheets in a consolidated format. Datasheets are prepared for each MEE, which summarise the hazard description, hazard management, emergency response, ALARP summary and a list of critical barriers identified on the bowties (known as safety and environment critical elements (SCEs)).

Potential common causes that contribute to MAEs/MEEs, or that can result in failure or degradation of the controls in place to protect against MAEs/MEEs, include some generic mechanisms of SCE failure and generic human error. These are represented in bowties applicable to multiple MEEs and identified in the MEEs applicable to this EP.

2.7.5 Safety and Environment Critical Elements and Technical Performance Standards

Woodside identifies and manages SCE technical and management system performance standards (MSPS) in accordance with PSM Procedures, Risk Management Procedures and Change Management Procedures (further described in the implementation strategy in **Section 7**). SCEs are identified for MAEs and MEEs. An SCE is a hardware control, the failure of which could cause or contribute substantially to, or the purpose of which is to prevent or limit the effect of a MAE, MEE or Process Safety Event. In addition, Woodside defines Safety and Environment Critical Component (SCC) as an item of equipment or structure forming part of a hardware SCE that supports the SCE in achieving the safety function⁴.

Once an SCE is identified as an MEE barrier for the operated facility, technical performance requirements are developed for the facility SCE in accordance with the Global SCE Performance Standards and process described in the SCE Management Procedure and form the SCE Facility Performance Standard. Each SCE Performance Standard represents a statement of the performance required of an SCE (e.g. functionality, availability, reliability, survivability). SCE Performance Standard requirements are used to establish agreed assurance tasks for each SCE, support the management of operations within acceptable safety and/or environment risk levels, and ensure continuous management of risk to ALARP. An assurance task is an activity carried out by the operator to confirm that the SCE meets, or will meet, its SCE Performance Standard. Examples of assurance tasks include inspection routines, maintenance activities, test routines, instrumentation calibration, and reliability monitoring.

SCE Facility Performance Standards do not always align directly with EPSs. They are used in conjunction with the WMS to identify and treat potential step-outs from expected controls performance or integrity envelopes and ensure SCE performance can be optimised. Woodside's HSE Event Reporting Guideline describes the process for identifying 'Failure to meet Facility Performance Standard', which is when the SCE does not meet the goal as stated in the relevant Performance Standard. (see **Section 7.1.18**). Situations where SCEs fail to meet Facility Performance Standards represent a potential increase in risk that, if not addressed immediately, have the potential to result in a process safety event, or worsen the consequences of one. Recording SCE Failure to Meet Performance Standard Events into the Event Reporting Database is important to highlight risk, investigate causes, ensure risks are managed and meet potentially applicable external reporting requirements. For applicable SCEs, 'Failure to meet Facility Performance Standard' represent scenarios that may fail to achieve an EPS presented in this EP.

The results of the MEE classification and analysis for NY facility operations are presented in **Section 6.8** of this EP. More detail on the SCE and Performance Standards process, and the interrelationships to other parts of the SCE Management Procedures, is described in **Section 7.1.18**.

⁴ Note: Not all individual equipment items that comprise a SCE are safety-critical.

2.7.6 Safety-critical Management System Barriers

For each MEE, Safety-critical Management System specific measures are also identified. These are management system components (generally WMS processes) that are key barriers to, or measures for, managing MEEs.

2.8 Impact and Risk Evaluation

Environmental impacts and risks cover a wider range of issues, differing species, persistence, reversibility, resilience, cumulative effects, and variability in severity than safety risks. Determining the degree of environmental risk, and the corresponding threshold for whether a risk/impact has been reduced to ALARP and is acceptable, is evaluated to a level appropriate to the nature and scale of each impact or risk. Evaluation includes considering the:

- decision type
- principles of ecological sustainable development – as defined under the EPBC Act
- internal context – ensuring the proposed controls and risk level are consistent with Woodside policies, procedures and standards (**Section 7**)
- external context – the environment consequence (**Section 6**) and stakeholder acceptability (**Section 5**)
- other requirements – ensuring the proposed controls and risk level are consistent with national and international standards, laws and policies.

In accordance with regulation 34(a), 34(b), 34(c) and 21(5)(b), Woodside applies the process described in the subsections below to demonstrate ALARP and acceptability for environmental impacts and risks, appropriate to the nature and scale of each impact or risk.

2.8.1 Demonstration of As Low As Reasonably Practicable

The descriptions in **Table 2-5** articulate how Woodside demonstrates that different risks, impacts and Decision Types identified within the EP are ALARP.

Table 2-5: Summary of Woodside’s Criteria for ALARP Demonstration

Risk	Impact	Decision Type
<i>Low and Moderate</i>	<i>Negligible, Slight, or Minor (D, E or F)</i>	<i>A</i>
Woodside demonstrates these risks, impacts and Decision Types are reduced to ALARP if: <ul style="list-style-type: none"> • identified controls meet legislative requirements, industry codes and standards, applicable company requirements and industry guidelines, or • further effort towards impact/risk reduction (beyond using opportunistic measures) is not reasonably practicable without sacrifices that are grossly disproportionate to the benefit gained. 		
<i>High, Very High or Severe</i>	<i>Moderate and above (C, B or A)</i>	<i>B and C</i>
Woodside demonstrates these higher-order risks, impacts and Decision Types are reduced to ALARP where it can be shown good industry practice and RBA have been employed, if legislative requirements are met, societal concerns are accounted for, and the alternative control measures are grossly disproportionate to the benefit gained.		

2.8.2 Demonstration of Acceptability

The descriptions in **Table 2-6** articulate how Woodside demonstrates how different impacts and risks are identified with this EP are Acceptable.

Table 2-6: Summary of Woodside’s criteria for acceptability

Risk	Impact	Decision Type
<i>Low and Moderate</i>	<i>Negligible, Slight, or Minor (D, E or F)</i>	<i>A</i>
Woodside demonstrates these risks, impacts and Decision Types are 'Broadly Acceptable' if they meet legislative requirements, industry codes and standards, applicable company requirements and industry guidelines. Further effort towards risk reduction (beyond using opportunistic measures) is not reasonably practicable without sacrifices that are grossly disproportionate to the benefit gained.		
<i>High, Very High or Severe</i>	<i>Moderate and above (C, B or A)</i>	<i>B and C</i>
Woodside demonstrates these higher order Risks, Impacts and Decision Types are 'Acceptable if ALARP' if it can be demonstrated using good industry practice and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained. In undertaking this process for Moderate and High risks, Woodside evaluates: <ul style="list-style-type: none"> • the Principles of ecological sustainable development as defined under the EPBC Act • the internal context – the proposed controls and consequence/risk level are consistent with Woodside policies, procedures and standards • the external context – consideration of the environment consequence (Section 6) and stakeholder acceptability (Section 5) are considered • other requirements – the proposed controls and consequence/risk level are consistent with national and international industry standards, laws and policies and consideration of applicable plans for management and conservation advices, conventions and significant impact guidelines (e.g. MNES). Additionally, Very High and Severe risks require 'Escalated Investigation' and mitigation. If after further investigation the risk remains in the Very High or Severe category, the risk requires appropriate business engagement with increasing involvement of senior management in accordance with Woodside’s Risk Management Procedure to accept the risk. This includes due consideration of regulatory requirements.		

2.9 Recovery Plan and Threat Abatement Plan Assessment

To support the demonstration of acceptability, a separate assessment is undertaken to demonstrate that the EP is not inconsistent with any relevant recovery plans or threat abatement plans (refer **Section 1.9.2.2**). The steps in this process are:

- Identify relevant listed threatened species and ecological communities (**Table 6-22**).
- Identify relevant recovery plans and threat abatement plans (**Section 6.9**).
- List all objectives and (where relevant) the action areas of these plans, and assess whether these objectives/action areas apply to government, the Titleholder, and the Petroleum Activities Program (**Section 6.9**).
- For those objectives/action areas applicable to the Petroleum Activities Program, identify the relevant actions of each plan, and evaluate whether impacts and risks resulting from the activity are clearly not inconsistent with that action (**Section 6.9**).

2.10 Environmental Performance Outcomes, Environmental Performance Standards, and Measurement Criteria

EPOs, EPSs and MC are defined to address the potential environmental impacts and risks. These are explored in **Section 6**.

2.11 Implement, Monitor, Review and Report

An implementation strategy for the Petroleum Activities Program describes the specific measures and arrangements to be implemented for the duration of the program. The strategy is based on the principles of Australian Standard/New Zealand Standard (AS/NZS) ISO 14001 Environmental Management Systems, and demonstrates:

- control measures are effective in reducing the environmental impacts and risks of the Petroleum Activities Program to ALARP and Acceptable levels
- EPOs and EPSs set out in the EP are met through monitoring, recording, auditing, managing non-conformance, and reviewing
- all environmental impacts and risks of the Petroleum Activities Program are periodically reviewed in accordance with Woodside's risk management procedures
- roles and responsibilities are clearly defined, and personnel are competent and appropriately trained to implement the requirements set out in this EP, including in emergencies or potential emergencies
- arrangements are in place for oil pollution emergencies, to respond to and monitor impacts
- environmental reporting requirements are met, including 'reportable incidents'
- appropriate consultation is undertaken throughout the activity.

The implementation strategy is presented in **Section 7**.

2.12 Consultation

A stakeholder assessment is undertaken to identify relevant people (as defined under regulation 25 of the Environment Regulations) to whom an activity update is issued electronically. Reasonable consultation periods are included. Further details and information are provided to a stakeholder if requested.

A summary and assessment of each stakeholder response is undertaken and a response, where appropriate, is provided by Woodside.

The consultation completed in the preparation of the EP, along with the process for ongoing engagement and consultation throughout the activity, is presented in **Section 5**. A copy of the full text correspondence with relevant people is provided.

3 DESCRIPTION OF THE ACTIVITY

3.1 Overview

This section has been prepared in accordance with regulation 21(1) of the Environment Regulations, and describes the activities to be undertaken as part of the Petroleum Activities Program under this EP. It includes the location of the Petroleum Activities Program, general details of the facility's layout, the operational details of the Petroleum Activities Program, and additional information relevant to consideration of environmental risks and impacts.

The NY FPSO (**Figure 3-1**) is a conversion of the Ellen Maersk, a very large crude carrier from the Maersk fleet (type E). It was constructed in 2000 then converted to an FPSO facility at Keppel shipyard in Singapore during 2007–2008. It has a double hull, with dimensions 332 m long and 58 m wide, and a displacement of 308,490 dwt.

The NY FPSO topside processing facilities include oil, water and gas separation systems, water injection and gas compression, plus injection equipment. The topsides are designed to process 120,000 bbl/d oil, 230,000 bbl/d water, 250,000 bbl/d total liquids and up to 55 million standard cubic feet per day (MMscfd) of free gas production.

The NY facility produces crude oil from the Vincent reservoir (VIN), Norton over Laverda (NOL), Laverda Canyon Reservoir (LAV) and Cimatti fields (CIM). The three NOL, LAV and CIM fields are collectively referred to as the Greater Enfield Development. The NY facility consists of processing and separation facilities for oil, water and gas, and gas compression facilities. Under normal operations, surplus gas and produced water (PW) is disposed by reinjection back into the reservoir. Gas reinjection also provides artificial lift for the CIM field. For the Greater Enfield (GE) wells, treated sea water produced by topsides via a dedicated treatment system is reinjected via dedicated water injection wells for pressure support. After processing, the stabilised crude oil is offloaded to trading tankers for export.

Future activities for this field may include production from up to an additional two wells targeting the Vincent reservoir and tied back to Drill Centre B (DCB).



Figure 3-1: Ngujima-Yin floating production, storage and offloading facility

3.2 Location

The NY FPSO and subsea infrastructure is located in Commonwealth waters of the Exmouth Sub-Basin of Western Australia (WA), in Production Licence Areas WA-28-L and WA-59-L. The Greater Enfield rigid production flowline operates under pipeline licence WA-28-PL. The NY FPSO is located approximately 43 km north of the North West Cape of Western Australia (**Figure 3-2**).

The NY FPSO is marked on nautical maps and is surrounded by a 500 m petroleum safety zone (PSZ). The subsea infrastructure is also marked on nautical charts. The coordinates, water depths and permit areas of the NY FPSO and associated infrastructure are presented in **Table 3-1**.

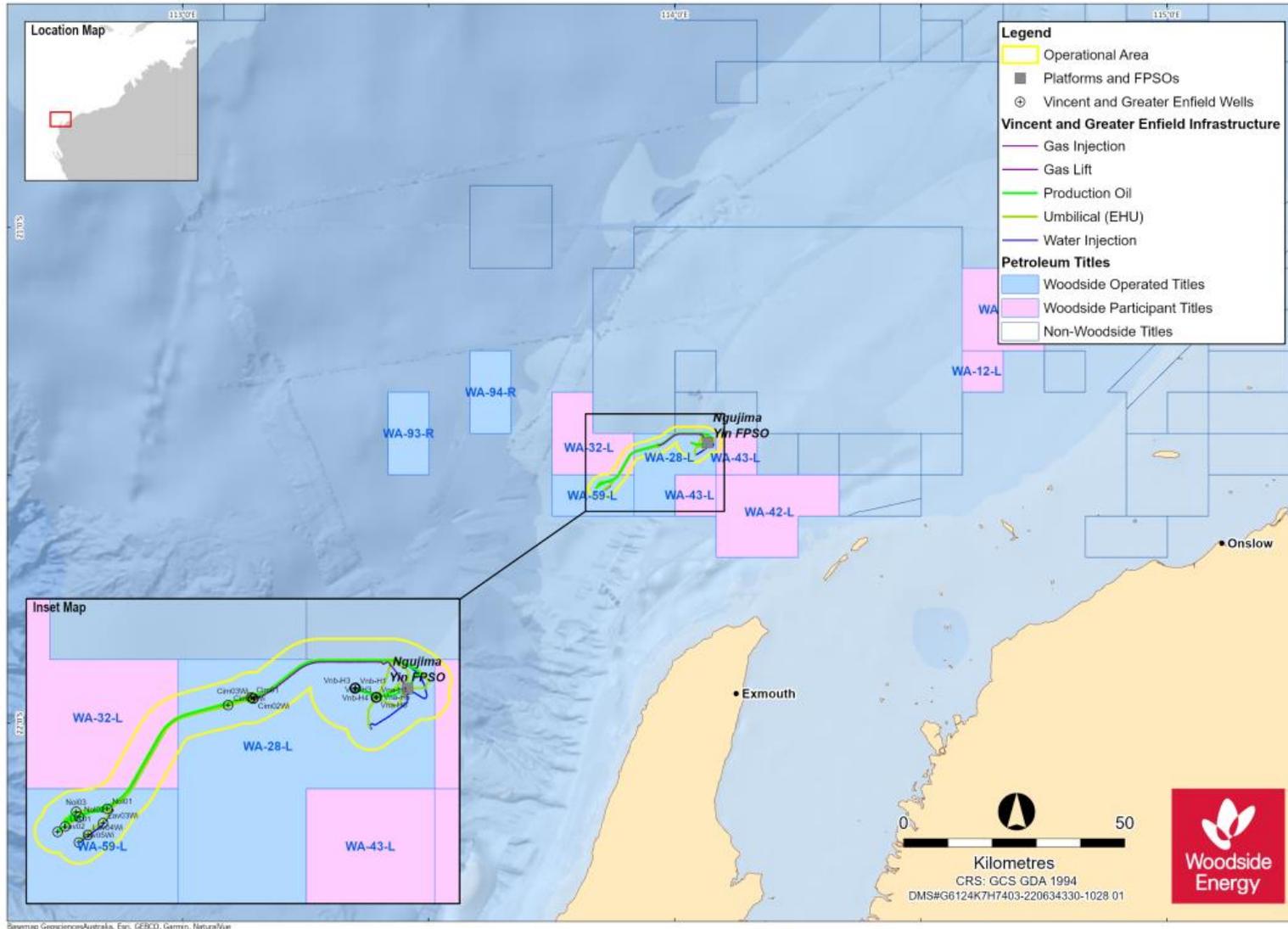


Figure 3-2: Ngujima-Yin facility location and Operational Area

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Table 3-1: Approximate location details for the Petroleum Activities Program, including all relevant infrastructure

Infrastructure	Water Depth (approx. m LAT)	Latitude (WGS84)	Longitude (WGS84)	Title
Ngujima-Yin FPSO	340	-21° 26' 02.661"	114° 04' 01.325"	WA-28-L
Production Wells (Sidetrack and Lateral Wells)				
CIM01	529	-21°26'23.354"	113°57'56.159"	WA-59-L
LAV01 (ST1)	845	-21°31'22.872"	113°50'39.948"	WA-59-L
LAV02 (ST2)	849	-21°31'35.596"	113°50'22.416"	WA-59-L
NOL01	804	-21°30'41.999"	113°52'18.573"	WA-59-L
NOL02	823	-21°31'0.740"	113°51'13.304"	WA-59-L
NOL03	826	-21°30'48.587"	113°51'5.697"	WA-59-L
VNA-H1 (ST2)	362	-21°26'23.310"	114°2'48.390"	WA-28-L
VNA-H2 (L1ST3)	362	-21°26'22.630"	114°2'47.670"	WA-28-L
VNA-H3 (ST2)	362	-21°26'22.160"	114°2'48.120"	WA-28-L
VNA-H4 (L1)	362	-21°26'22.850"	114°2'48.850"	WA-28-L
VNA-H5 (ST1)	362	-21°26'22.232"	114°2'49.346"	WA-28-L
VNA-H6A (L1 & L2ST1)	362	-21°26'23.670"	114°2'47.824"	WA-28-L
VNB-H1 (L1ST2)	392	-21°26'2.290"	114°1'59.070"	WA-28-L
VNB-H2 (ST3)	392	-21°26'1.760"	114°1'58.259"	WA-28-L
VNB-H3 (L1)	392	-21°26'1.150"	114°1'58.590"	WA-28-L
VNB-H4 (L1ST3 & L2ST1)	392	-21°26'1.660"	114°1'59.410"	WA-28-L
VNB-H5 (L1ST3 & L2ST1)	392	-21°26'1.215"	114°2'0.073"	WA-28-L
VNA-H5 (ST1)	362	-21°26'22.232"	114°2'49.347"	WA-28-L
VNA-H6A (L1 & L2ST1)	362	-21°26'23.670"	114°2'47.824"	WA-28-L
New well (1)	395	-21°26'1.57"	114°01'53.72"	WA-28-L
New well (2) ²	395	-21° 26' 1.72"	114° 01' 58.86"	WA-28-L
VN-G1	371	-21°25'1.940"	114°3'16.950"	WA-28-L
Customised Water Flood Injection Wells				
CIM02WI	527	-21°26'25.038"	113°58'0.284"	WA-59-L
CIM03WI	526	-21°26'25.842"	113°58'0.530"	WA-59-L
CIM04WI	562	-21°26'41.202"	113°57'1.305"	WA-59-L
LAV03WI	805	-21°31'15.075"	113°52'8.851"	WA-59-L
LAV04WI	805	-21°31'42.630"	113°51'33.425"	WA-59-L
LAV05WI	820	-21°32'0.107"	113°51'12.102"	WA-59-L
Produced Water Injection Wells				
VNC-W2	346	-21°27'33.210"	114°2'32.530"	WA-28-L
VNC-W3	346	-21° 27' 31.09"	114° 02' 33.67"	WA-28-L

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Infrastructure	Water Depth (approx. m LAT)	Latitude (WGS84)	Longitude (WGS84)	Title
Water Injection Wells & Production Wells Permanently Plugged with Wellhead in Place				
VNC-W1	346	-21°27'32.070"	114°2'33.770"	WA-28-L
VNA H6	363	-21° 26' 23.203"	114° 02' 47.289"	WA-28-L
Key Production Subsea Infrastructure				
GE Production Flowline (from production FLET (MPP) to Production FLET (FPSO))	341	-21° 25' 22.653"	114° 04' 27.917"	WA-28-PL
	846	-21° 31' 08.730"	113° 50' 38.907"	
GE Water Injection Flowline (WI FLET LAV01 (NOL01) to WI FLET (FPSO))	805	-21° 30' 42.036"	113° 52' 22.539"	WA-28-PL
	317	-21° 26' 21.346"	114° 04' 47.248"	
DCA Manifold	364	-21°26'22.729"	114°02' 48.307"	WA-28-L
DCB Manifold	392	-21°26'01.705"	114°01'58.869"	WA-28-L
Vincent UTA 1	362	-21°26'21.663"	114° 02' 52.538"	WA-28-L
Water Injection FLET NOL Drill Centre	805	-21°30'42.036"	113° 52' 22.539"	WA-59-L
Gas Lift FLET CIM Drill Centre	529	-21° 26' 22.734"	113° 57' 57.464"	WA-28-L
Production FLET LAV Drill Centre	846	-21° 31' 08.730"	113° 50' 38.907"	WA-59-L
ILTA on Production Flowline near CIM01	531	-21° 26' 22.198"	113° 57' 53.852"	WA-28-L
ILTA on Water Injection Flowline near CIM03	527	-21° 26' 21.340"	113° 57' 59.964"	WA-28-L
ILTA on Water Injection Flowline near CIM04	564	-21° 26' 38.491"	113° 56' 59.603"	WA-28-L
Multiphase Pumping Station	845	-21° 31' 10.420"	113° 50' 41.788"	WA-59-L
CIM01 Subsea Distribution Assembly (SDA)	528	-21° 26' 25.145"	113° 57' 57.771"	WA-28-L
UTA at LAV03	808	-21° 31' 14.507"	113° 52' 08.023"	WA-59-L
UTA at NOL02	827	-21° 30' 59.305"	113° 51' 13.171"	WA-59-L
UTA at NOL01	806	-21° 30' 42.899"	113° 52' 19.061"	WA-59-L
UTA near CIM02WI and CIM03WI	527	-21° 26' 25.863"	113° 57' 58.152"	WA-28-L
Power Umbilical Termination Assembly at MPP	846	-21° 31' 11.086"	113° 50' 40.255"	WA-59-L
UTA at LAV01	848	-21° 31' 22.288"	113° 50' 41.152"	WA-59-L
UTA at LAV04	807	-21° 31' 41.737"	113° 51' 33.614"	WA-59-L

1: This table was correct at the time of EP submission.

2: Location for second new well is unconfirmed at the time of submission and location provided is based on DCB manifold. Actual location of the well may be within ~500 m. Location will be within the Operational Area described below.

3.3 Operational Area

The Operational Area defines the spatial boundary of the Petroleum Activities Program, as described, risk-assessed and managed by this EP.

The area includes:

- the NY FPSO and an area extending out to 1500 m to allow for offtake activities
- the subsea infrastructure, including wells, flowlines and associated infrastructure, and an area within 1500 m around the infrastructure
- an area of 3000 m around the DCB, to allow for the proposed location of up to two new wells.

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Vessels conducting related activities within the Operational Area are required to comply with this EP. Vessels supporting the Petroleum Activities Program when outside the Operational Area adhere to applicable maritime regulations and other requirements. The Operational Area is presented in **Figure 3-2**.

3.4 Timing

The NY facility commenced production in 2008. The facility operates 24 hours a day, 365 days a year. Supporting activities, such as inspection, maintenance, monitoring and repair (IMMR), take place as required.

The Petroleum Activities Program currently has an estimated end of field life (EoFL) anticipated for 2028 subject to reservoir performance and life extension studies.

Tie-back opportunities are continuously being reviewed for Woodside's offshore facilities, which have the potential to extend the life of the field. One opportunity has been identified, with up to two new wells potentially being drilled and tied back to the existing infrastructure within the life of this EP.

The two new wells are likely to be drilled over two separate campaigns with nominal timing for the first well targeting 2025, and the second well in 2026-2028. Drilling, installation, cold commissioning, tie-back activities associated with the two wells would be the subject of separate EP(s). This EP covers well start-up and hot commissioning of each of the wells.

This EP is intended to remain in force for up to five years from EP acceptance by the regulator.

3.5 Facility Layout and Description

This section provides a high-level overview of the NY FPSO and associated infrastructure as relevant to consideration of the environmental risks and impacts of the Petroleum Activities Program.

3.5.1 Topsides

The NY FPSO has an overall length of 332 m and breadth of 58 m. The topsides comprise 11 pre-assembled primary process modules elevated above the NY FPSO deck, with a plated lower deck and grated upper decks. Each module has its own primary structure, equipment, associated piping, valves and instrumentation. The topsides consist of seven main modules and some skid-based modules. The topside module designations that have been used are:

- M10: HP oil separation
- M11: LP oil separation and water injection
- M20: Manifold
- M30: HP flare
- M40: Customised water flood (CWF)
- M60: HP gas compressor and dehydration (HPC)
- M70: LP gas compressor and utility (LPC)
- M71: LP flare and drain skid
- M72: Sand cleaning skid
- M85: Power generation
- M99: Pipe rack.

In addition to these primary processing modules, there are several more modules in the topsides areas. The process control module (PCM) is located above the starboard side forward of module M60, and contains the control systems for the subsea multiphase pumping stations (MPPs) including the variable speed drives, and control and barrier fluid systems. In addition, the submerged turret production (STP) utility container is located on the port side of the STP compartment, forward of module M20, and contains the hydraulic power units and control equipment for the STP system. A

production laboratory, stores and electrical and mechanical workshops are located aft of the main laydown area on the port side.

3.5.2 Wells and Reservoirs

The wells from the four reservoirs (VIN, NOL, LAV and CIM) are managed in accordance with the Ngujima-Yin Well Operations Management Plan (WOMP). The WOMP describes control measures in place to ensure the risks to the well integrity are reduced to ALARP, including during periods of non-operation, before permanent abandonment.

3.5.2.1 Vincent Reservoir

Oil from the VIN reservoir is produced through 13 subsea production wells. The VIN reservoir is characterised by low pressure and strong aquifer support, as a result production is supported by reinjection of produced water and gas into dedicated wells via two production manifolds (Drill Centre A (DCA) and Drill Centre B (DCB)) connected to the NY FPSO. The additional two new wells are currently targeted to be drilled into the VIN reservoir and connected back to DCB.

The two water re-injection wells are daisy-chained configuration on a dedicated flexible flowline from the NY FPSO. An umbilical runs between the water reinjection wells and the DCA manifold.

The single gas re-injection well also has a dedicated flexible flowline from the NY FPSO, and an umbilical runs between the well and the DCA manifold.

3.5.2.2 Laverda Canyon Reservoir

Fluids from the LAV reservoir are produced from two subsea production wells and pumped to the NY FPSO via the rigid production flowline. A gas cap is present in the upper sand of the LAV reservoir, and both the upper and lower sands are connected to a small aquifer, inadequate to provide pressure support, thereby necessitating water injection for maximum recovery.

Three customised water flood injection wells are daisy chained via flexible flowlines, with injection water supplied from the NY FPSO by the rigid water injection flowline.

3.5.2.3 Norton-over-Laverda Reservoir

Fluids from the NOL reservoir are produced from three subsea production wells and pumped to the NY FPSO via the rigid production flowline (also used for fluids from the LAV and CIM reservoirs). A gas cap is also present in the NOL reservoir, with strong pressure support expected from a large subcropping aquifer. As a result, no water is injected into the NOL reservoir.

3.5.2.4 Cimatti Reservoir

Fluids from the CIM reservoir are produced from a single subsea production well and transported to the NY FPSO via a tie-in to the rigid production flowline (also used for fluids from the LAV and NOL reservoirs). No significant pressure support is expected from the CIM aquifer; therefore, water injection is required for pressure maintenance, sweep and maximising recovery.

Three customised water flood water injection wells supplied by the rigid water injection flowline are used to inject water into the CIM reservoir.

3.5.2.5 Well Configuration

Each well is completed with a subsea X-mas tree (XT) incorporating wellhead controls for opening and closing the valves to isolate and regulate flow. The primary down-hole safety system is surface controlled subsurface safety valves (SCSSVs) on each well, which are installed in the production tubing at approximately 100 m below the seabed.

The facility Integrated Control and Safety System operates all subsea XT and manifold valve functions. It also monitors all XT mounted instrumentation and the multi-phase flow meter (MPFM) located at each manifold.

3.5.2.6 **Water Injection Wells & Production Wells Permanently Plugged with Wellhead in Place**

There are two wells with wellheads identified in **Table 3-1** that are not tied back to the NY facility and have no associated infrastructure (i.e. no xmas tree (XT)). The wells are permanently plugged and abandoned, and therefore are no longer the subject of a WOMP. The wellheads remain in-situ and flagged for removal (base case) at the end of field life. Removal of the wellheads during operational life is not considered to be ALARP as they are within close proximity to live subsea infrastructure:

- VNC-W1 is located approximately 30 m from live well VNC-W3 and approximately 50 m from live well VNC-W2.
- VNA H6 is located approximately 20 m from live well VHA-H6A and approximately 20 m from live well VNA-H2.

3.5.3 Flowline and Riser System

3.5.3.1 **Vincent**

For the VIN production system, there are two 1.7 km, 10-inch' flowlines extending from the wells to the risers connected to the NY FPSO. There is also one 3.8 km, 10-inch water reinjection flowline with riser and one 1.9 km 6" gas injection flowline with riser.

3.5.3.2 **Greater Enfield**

The Greater Enfield system (for the LAV, NOL and CIM reservoirs) consists of a ~31 km, 16-inch carbon steel rigid production flowline (the GE production flowline) and associated 14-inch flexible and 10-inch flexible production riser. The GE production flowline runs between the MPP station (which provides pressure boost) to the riser base and riser connecting to the FPSO STP buoy.

A ~31.6 km, 10-inch carbon steel rigid water injection flowline and an 8-inch inner diameter (ID) flexible riser provides water injection for pressure support. The system also includes:

- a six-inch ID flexible gas lift flowline for artificial lift of CIM well
- eight-inch ID flexible production flowlines connecting production wells to the MPP Station (LAV and NOL), and six-inch flexible from CIM well to the rigid flowline inline tee
- eight-inch flexible flowlines for water injection
- eight-inch ID flexible flowlines to facilitate flowback of water injection wells via the production system.

3.5.4 Subsea Infrastructure

The main components of subsea infrastructure include wells, wellheads, manifolds, flowlines and umbilicals, collectively referred to as 'the NY facility subsea infrastructure'. The layout of the NY facility subsea infrastructure is shown in **Figure 3-3**.

The NY facility subsea infrastructure consists of:

- trees/wells (**Section 3.5.2**)
- manifolds
- rigid spools

- flying leads
- power and control umbilicals
- flowlines and risers (**Section 3.5.3**)
- umbilical termination assembly (UTA)
- turret and mooring system
- MPPs
- subsea pig launch and receipt facility
- subsea support structures (e.g. parking stands, anti-walking structures).

The NY facility subsea infrastructure is typically controlled from the NY FPSO through the following components:

- umbilicals which provide hydraulic services, electrical power and control services, and chemical injection services as required
- valves which control subsea operations and processes
- chokes which control pressure and flow rates from the production and water injection wells
- subsea control modules (SCM), which are sealed and pressure compensated electro hydraulic units (typically found on the manifolds and/or XT) and link the surface and subsea controls.

A number of subsea valves may be overridden manually from a remotely operated vehicle (ROV).

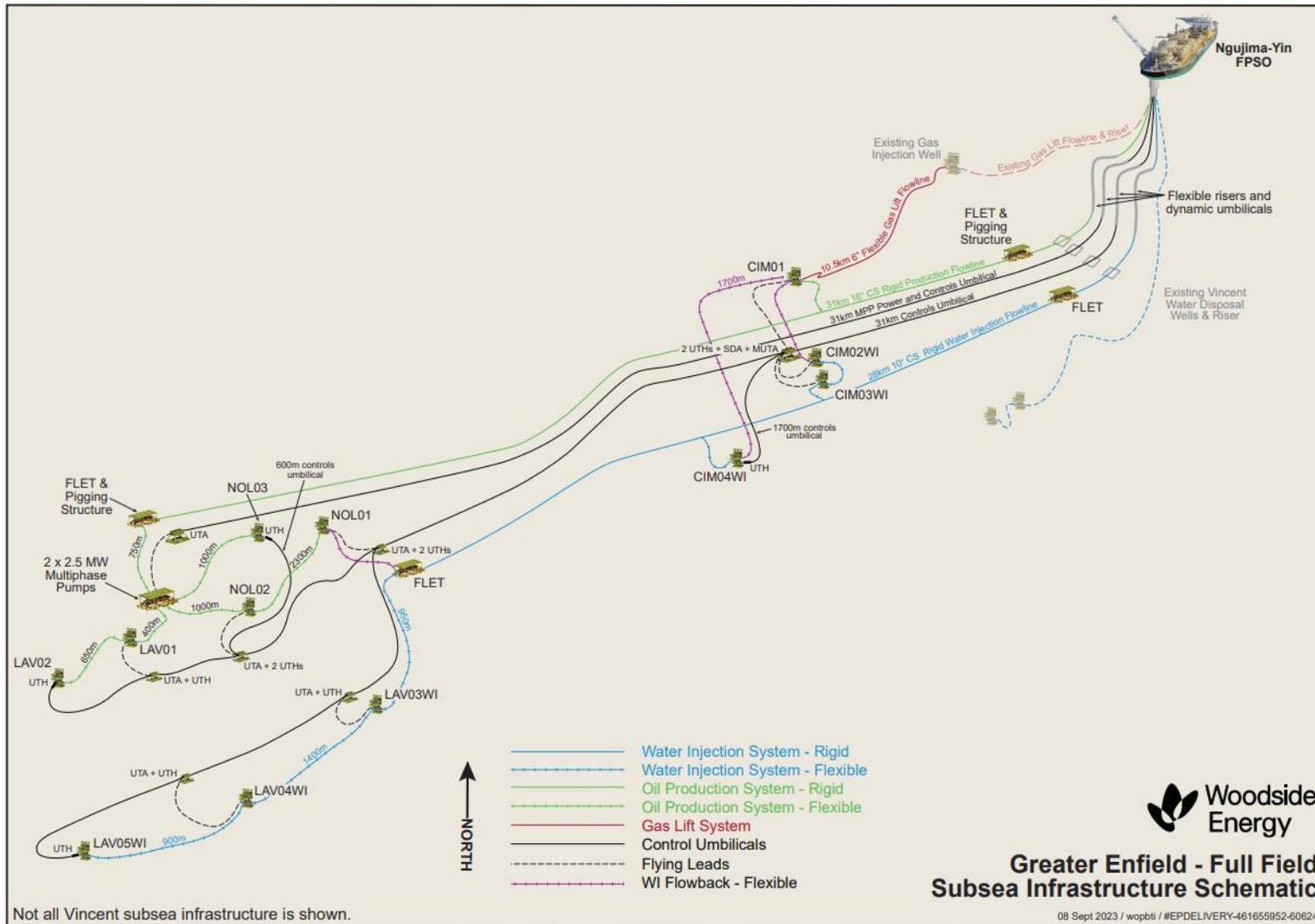


Figure 3-3: Ngujima-Yin facility subsea infrastructure layout (not to scale)

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3.5.5 Submerged Turret Production and Mooring System

The NY FPSO is moored to the east of the Vincent field centre. The STP and mooring system enables the NY FPSO to freely weathervane, while allowing production from the reservoirs through the fluid swivel stack. In weather conditions which may exceed the design limits for the connected system, or planned maintenance is required at a shipyard, the NY FPSO can be disconnected from the risers, umbilicals and mooring system to enable sail away from the field under its own power.

The mooring system comprises three groups of three mooring lines. Each mooring line is composed of chain and wire segments, and a mooring line buoyancy element is located between the upper and lower wire rope segments. Clump weights are attached to the chain segment of the three most loaded lines to reduce vessel offset and line and anchor tension during extreme weather.

Production fluids from the reservoirs are transferred from the risers to the topsides processing system via the swivel stack fluid transfer system. This also allows PW, CWF water and gas from the topsides to be re-injected into reservoirs. The swivel also provides electrical power hydraulics and chemicals to the subsea infrastructure.

The NY FPSO's disconnectable STP system comprises the:

- STP buoy, which provides the interface between the NY FPSO hull and the mooring system and risers. The STP buoy comprises a buoyancy cone and turret, through which pass the risers and umbilicals. The STP buoy is moored to the seabed by mooring chains and anchors which are fixed to the lower turret structure and connected to the hull by the locking mechanisms in the STP compartment.
- STP compartment, which is cylindrical in shape and built into the NY FPSO's former cargo tank No. 1 centre. The compartment houses the STP equipment, including the swivel system and the locking mechanisms and chemical distribution panels. The lower part of the STP compartment is the 'mating cone module' and forms the interface between the hull and the outer part of the STP buoy. The STP compartment is shown in **Figure 3-4**.

The turret structure is geostationary (i.e. fixed in position relative to the seabed). The risers and umbilicals are also fixed to the seabed and pass through the turret structure. The turret comprises the lower turret and the upper turret. The lower turret is the external structure below the buoyancy cone. The upper turret passes through the void in the centre of the buoyancy cone. The buoyancy cone is designed to rotate around the turret structure through the upper and lower turret bearings.

When the NY FPSO is connected to the mooring, the STP buoy is located inside the mating cone module in the lower part of the STP compartment (**Figure 3-4**). The buoyancy cone is fixed to the cone module by locking mechanisms, and in this configuration is fixed to the NY FPSO, with the FPSO and buoyancy cone rotating around the turret structure to weathervane.

When disconnected from the NY FPSO, the STP buoy floats at approximately 28 m below the sea surface.



Figure 3-4: Representation of the Ngujima-Yin hull with the submerged turret production compartment cut away

3.5.5.1 *Disconnection of Floating Production, Storage and Offloading Facility from the Submerged Turret Protection Mooring*

The connection and disconnection of the NY FPSO from the STP buoy is conducted in accordance with specific procedures. To prepare for disconnection, production is shut down and the topsides, risers and flowlines are depressurised via the flare system. The risers are depressurised to a nominated safe pressure before closing the riser emergency shutdown valves (ESDVs) and isolation valves. The piping within the STP compartment and swivel are drained, flushed and purged before disconnection.

The risers and umbilicals are disconnected from the swivel, and the swivel stack is moved on the swivel trolley. This is to allow free access to the top of the buoy and a clear route for the pull-in rope connection between the buoy and the winch. The STP buoy is then released and lowered from the hull.

To complete a disconnection, the STP compartment is flooded with seawater to equalise water level prior to disconnection. Individual hydraulically operated locking mechanisms installed around the circumference of the upper mating ring are then released, and the vessel sails away under its own power.

3.5.5.2 *Reconnection of Floating Production, Storage and Offloading Facility from the Submerged Turret Protection Mooring*

The first stage of the reconnection procedure involves pulling in the STP buoy using the STP winch. Cameras in the STP compartment are then used to monitor position during the pull-in, as well as a

satellite navigation positioning system which provides the relative position of the mating cone and the STP buoy. Once the STP buoy is inside the hull, the locking mechanisms within the mating cone module are engaged. Positive engagement is verified on the control system. The mating cone seal is activated from the STP utility container. The STP compartment is then drained using the NY FPSO ballast pumps and STP compartment drains system.

The blinds are then reinstated on the STP compartment filling valves and swivel, and the pipework and umbilicals are reconnected (in reverse to the disconnection procedure).

3.6 Operational Details

This section describes the main operations associated with the NY facility.

3.6.1 Manning

The total overnight personnel on board (PoB) capacity for the NY FPSO is 80 people. The central control room (CCR) is manned 24 hours a day. Activities which affect manning levels are:

- crew change
- FPSO disconnection for cyclone avoidance
- engineering projects
- campaign maintenance
- inspections/audits
- planned facility shutdowns.

Woodside's philosophy to the number of PoB is to minimise the number of people, while maintaining a safe and efficient operation. Hence, equipment and process controls have been selected on the NY FPSO to be routinely, safely and efficiently operated with the minimum of personnel.

3.6.2 Floating Production, Storage and Offloading Facility Sailaway for Maintenance

The NY FPSO has retained its functionality as a self-propelled seagoing vessel. As a result, it can disconnect from its mooring, and sail to a shipyard to complete maintenance. If this is to occur, the NY FPSO will be disconnected as per the procedure described in **Section 3.5.5**.

Prior to sailaway, the wells will have XT valves shut and tested, as per WOMP requirements.

3.6.3 Process Description

The NY FPSO receives well fluids (crude oil, gas and associated PW) from the production wells for topside processing, including:

- separation of the well fluids into gas, crude oil and water
- gas compression and reinjection to the reservoir
- PW treatment and reinjection to the reservoir.

The NY FPSO directly exports processed, stabilised crude oil via offloading to offtake tankers. The first stage of processing crude oil is separation of the well fluids in the two HP separators (A and B). The fluids are then further separated in the LP separator then the electrostatic coalescer to achieve crude oil export specifications. The crude is then cooled and transferred into the NY FPSO oil storage tanks for export.

A schematic of the NY FPSO process is provided in **Figure 3-5** and is described in more detail in the below sections.

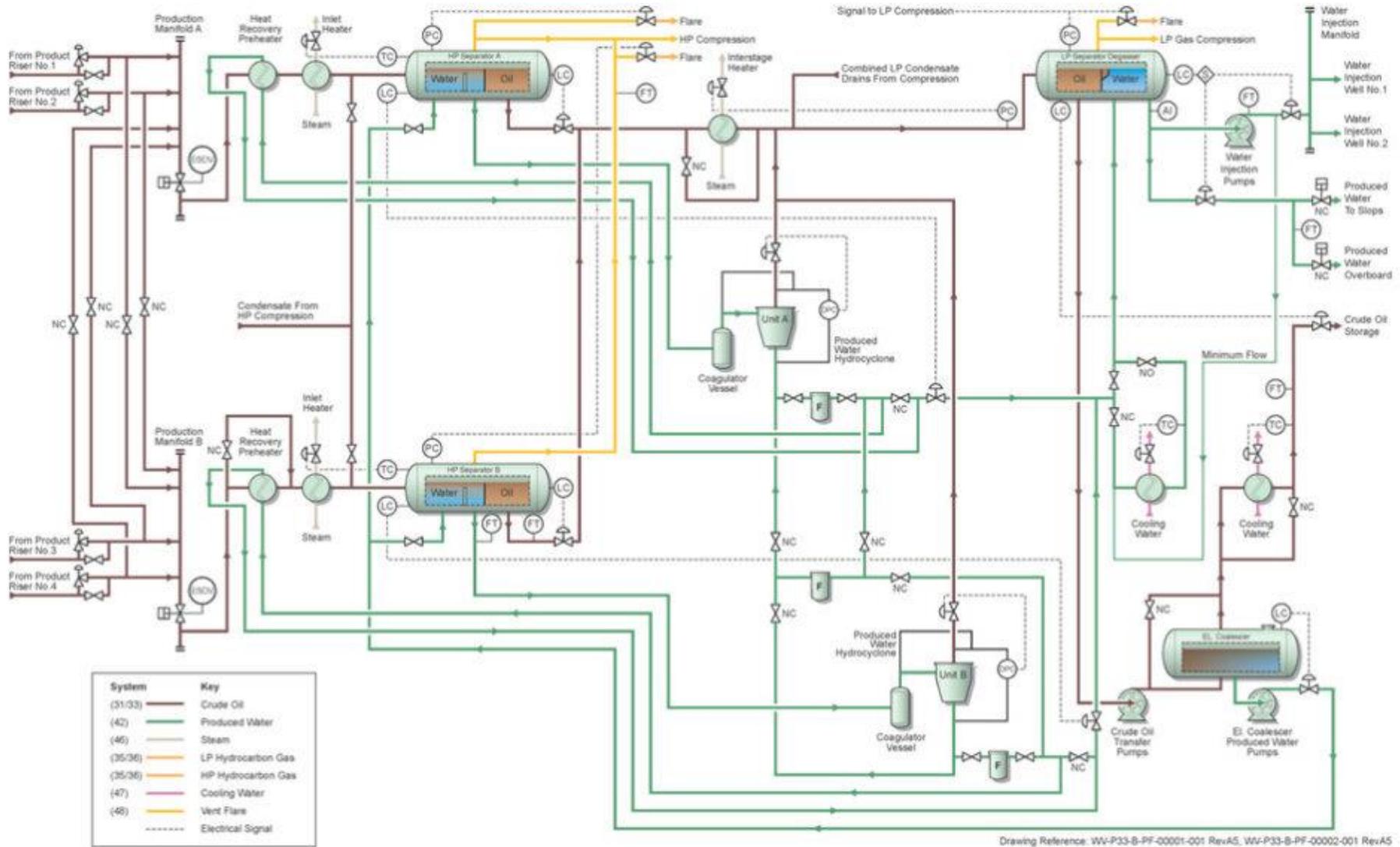


Figure 3-5: Ngujima-Yin floating production, storage and offloading facility process flow diagram

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3.6.3.1 Gas Compression Systems

The 'flash gas' (gas that is released in the processing and separation process) is captured and routed to the gas compression systems for use as fuel gas and reinjection into the reservoir during normal operations or disposed to the flare system during process upsets.

There are two compression systems: a low pressure (LP) gas compression system, which receives gas routed directly from the LP separator/degasser; and a high pressure (HP) gas compression system which receives gas from the HP separators. The HP gas compression system also receives the gas from the LP gas compression system.

The gas compression systems have the capacity to inject up to 55 MMscfd. Flare and reinjection volumes are discussed below.

3.6.3.2 Flare Systems

The NY FPSO has two flare systems, the HP flare and the LP flare. Their main purposes are to safely discharge gas streams during an emergency depressurisation, or when the compression systems are unavailable. However, there are some process streams which continuously pass gas to the flare, such as stripping gas used in the glycol regeneration process. Other streams intermittently flow to the flare, such as during process upsets, maintenance activities and when storage vessels are depressurised. The flow of gas through each of the HP and LP flare networks is measured using separate ultrasonic flow meters.

The HP flare system collects hydrocarbons from process and utility systems, with design pressure of 1000 kPa (g) or greater. Hydrocarbons are vented to the HP flare from process safety valves (PSVs), rupture discs, pressure control valves (PCVs), manual valves and blowdown valves (BDVs). The main HP flare header is routed to the HP flare knock-out drum, which is designed to separate all liquid droplets greater than 600 microns by gravity. Liquids collected in the drum are pumped to the LP separator. Vapours from the flare drum are disposed at the flare tip.

The LP flare system collects vented hydrocarbons from process and utility equipment with design pressures below 1000 kPa (g). There are two separate LP headers, one to accommodate low temperature relief streams and the other to accommodate venting at ambient or higher temperatures. The two LP headers are routed to the LP flare knock-out drum, which is designed to separate out all liquid droplets greater than 150 microns by gravity. The closed drain header terminates in the sump of the LP flare knock-out drum. Liquids collecting in the drum are pumped to the LP separator.

All HP and LP flare pipework are continuously purged with nitrogen or fuel gas, to prevent the possibility of an explosive mixture developing within the system.

The flare tip is equipped with three pilot burners that provide a constant source of ignition. The flare tip is common for the HP flare and LP flare, and produces low radiation, normally smokeless combustion. The pilot flame is monitored by thermocouples located in each pilot nozzle head.

The flare tower is at the bow of the NY FPSO and has a total height of 110 m above sea level (based on deck height above sea level of 20 m and flare tower height of 90 m).

Flaring is expected to occur during the operational events of:

- normal operational activities, including flare purge/pilot and process waste streams
- emergency blowdown as part of process safeguarding
- transient operations such as start-up or process upsets
- depressurisation of subsea flowlines for hydrate management, integrity management or cyclone disconnect
- flaring for liquids management

- flaring associated with subsea well work-over or clean-up
- depressurisation for maintenance activities.

The key operational flaring events are explained in further detail in the following sections. Estimates have been derived using historical records of operational flaring (such as process flow set points and instrumentation), and estimates associated with production planning, reservoir gas production, reliability assumptions and process design information.

3.6.3.3 Normal Operations

During normal operations, the majority of gas produced from the production process is reinjected into the reservoir. A relatively small quantity of gas must be continuously flared, associated with purge and pilot of the flare system and disposal of waste streams which are not recovered to the process.

The continuous flows to the LP flare include:

- flare pilot
- LP flare header and storage tank purges
- glycol regeneration process, including still column overheads.

The continuous flows to the HP flare include:

- flare pilot
- HP flare header purges.

Leakage past PSVs, PCVs, manual valves and BDVs may also result in a continuous flow; however, this is usually minor.

3.6.3.4 Intermittent Process Upsets and Activities

During planned process upsets and activities, the process control valves on the main process equipment are designed to open to relieve excess pressure to flare. Sources include ESD testing, compressor outage, strainer changeout, non-routine flowline dewatering, and cyclone disconnect interruptions.

3.6.3.5 Emergency Blowdown

The topsides equipment and piping are divided into isolatable sections, each with a dedicated fail open actuated BDV, which allow blowdown of the entire facility inventory. During an ESD, each section is separately depressurised to the HP or LP flare.

3.6.3.6 Transient Operations

During process upsets, the pressure control valves on the main process equipment are designed to open to relieve excess pressure to the HP flare.

During start-up operations, the pressure control valves on the main process equipment can open to manage pressure or composition.

3.6.3.7 Subsea Flowline Depressurisation

The fluid in the subsea flowlines (which carry hydrocarbons from the subsea wells to the NY FPSO) may need to be routed to the flare system to allow pressure in the flowlines to be reduced. The flowlines may require depressurisation for the reasons of:

- production flowline maintenance and critical leak-off testing (LOT)
- facilitation of remediation in an unplanned hydrate blockage in the subsea flowlines
- flowline hydrate management
- cyclone disconnect
- prevention of over-pressurisation of flowlines above integrity limit
- suspension of redundant flowlines.

3.6.4 Flaring for Liquids Management

During fuel gas production mode, periods of increased gas flow (which is flared) is required to reduce the quantity of accumulated liquids.

3.6.5 Subsea Well Work-over or Clean-up

Specific subsea activities like well work-over or well clean-up will require flaring of hydrocarbons.

3.6.6 Depressurisation for Maintenance Activities

Manual depressurisations will result in intermittent flaring of hydrocarbons, triggered by routine and non-routine equipment maintenance, planned testing and/or depressurisation of equipment and piping to remove the equipment from service. Equipment must be depressurised before draining, as the closed drains system is not intended for HP service.

3.6.7 Unplanned Events

Unplanned events such as process and reliability upsets (including compressor train outages), ESDs and requirements to blow down process and flowlines are depressurised to the HP or LP flare.

3.6.8 Produced Water Treatment and Disposal

Produced water (PW) is brought to the surface from the reservoir and is separated from the hydrocarbon components during the production process. PW may consist of formation water (derived from a water reservoir below the hydrocarbon formation) and condensed water (water vapour present within crude oil which condenses when brought to the surface).

Separation of PW from reservoir fluids is not 100% effective; separated water often contains small amounts of naturally occurring contaminants including dispersed oil, dissolved organic compounds (aliphatic and aromatic hydrocarbons, organic acids and phenols) and inorganic compounds (e.g. soluble inorganic chemicals, dissolved metals, etc).

The process for oil and water separation and disposal of PW during routine and non-routine operations are outlined below.

3.6.8.1 Oil and Water Separation

PW treatment to remove the oil from the water begins in the HP separator (A or B), where the combination of chemical injection, residence time and temperature promotes the separation of the water from oil. The water separates to the bottom of each HP separator, then enters a coagulation vessel and through to a hydrocyclone unit. The rejected oil from the hydrocyclone is returned to the process.

From the hydrocyclone, the PW is directed through one of the PW filters to remove particulates. The filtered water continues on through to the PW degasser. The degasser is fitted with an internal oil skimming facility to remove residual oil build up in the degasser vessel. This completes the oil and water separation process.

3.6.8.2 Produced Water Reinjection

After leaving the degasser, the primary PW disposal method is through the water injection pumps (A, B and C) to the water injection wells. These are dedicated wells to the reservoir, described in **Table 3-1**.

The primary disposal method may not be available for use in certain circumstances such as when the reinjection system is unavailable, oil-in-water re-injection criteria cannot be achieved, or there has been a trip of the water injection pumps. In this situation, PW may be directed to a temporary holding tank.

PW directed to the holding tank can then be disposed of by pumping the liquid back into the PW process, when it becomes available. This is done using the closed drain drum pumps to direct the PW into the HP separators and directed back into the PW system for reinjection as per the primary disposal method.

No routine discharge of PW to the marine environment is proposed in this EP and therefore PW is not described further.

3.6.9 Customised Water Flood System

The customised water flood (CWF) produces ultra-filtered sea water, which is injected into the LAV and CIM oil fields to maintain reservoir pressure. The reservoir pressure, which is higher than the static pressure, is the key driving force for the production stream from the reservoir to the FPSO. Replacing the volume of oil with water will avoid this decrease in reservoir pressure.

The CWF function is to cleanse seawater to reinject whilst preventing souring of the reservoir. Various stages of filtration, sulphate removal and deaeration are followed by high pressure pumping to reach the reservoir reinjection pressures.

There are routine and non-routine discharges from the CWF process are outlined in **Table 3-2** and **Table 3-3**.

Table 3-2: Routine discharge streams from the customised water flood

Activity	Purpose	Volume (Approximate)	Frequency	Composition
Air scour and forward flush	Back wash of the coarse filter elements to remove collected solids.	<150 m ³ /hour	2 minutes/hour, each hour	Residual solids collected in the coarse filters that all originate from local seawater.
Chemically enhanced back flush (CEB) of the 7 UF trains	Uses sodium hypochlorite within the feed water to soak into the fibre and remove organic and bio-accumulated foulants.	10 m ³ /day seawater (x7)	Daily, for 30 to 60 minutes each train	Seawater with Sodium Hypochlorite (approximately 400 mg/L).
Flush cleaning of Ultra filtration unit	Uses air and water to clean filter fibres.	As required	As required	Water with dislodged residue (fine seawater particles, bacteria, viruses, etc., that all originate from local seawater).
Normal SRU Reject	Reject stream with elevated concentration of sulphates, calcium and magnesium the re-injection reservoir.	Ratio of 1:4 inflow to outflow (max of 177m ³ /hour)	Continuous	Seawater with elevated concentration of ions, (e.g. Ca, Mg) and Sulphate. No change to salt composition.
Lube oil	Lube oil is positively pressured into the submerged CWF/seawater intake caisson pump. A small and acceptable loss is up to 70 mL/h before classification of a seal failure and intervention required.	Designed impact of up to 70 mL per pump (x3), total 210 mL and 80 000 m ³ /d volume is a concentration of up to 0.05 mg/L OIW.	Continuous	Seawater with lube oil (at a concentration of 0.05 mg/L).

Due to the large volumes and continuous nature of the routine discharge streams, they are routed to the existing seawater disposal caisson where the streams first mix with the seawater cooling reject stream, before being discharged to the marine environment.

Table 3-3: Non-routine discharges from the customised water flood (cleaning/maintenance fluids)

Activity	Purpose	Volume	Frequency	Composition
UF clean-in-place (CIP)	Performed on the UF package to return the fibres to their baseline condition.	20 m ³	Each of the 7 trains are cleaned approximately once every 2 months (7 x 6 = approx. 42 events per year)	Freshwater, dosed with either citric acid or sodium carbonate.
SRU CIP	Undertaken to clean SRU membranes when there is a decrease in performance observed or increase in vessel dP.	20 m ³	Each of the 3 trains cleaned approximately once every 6 months. (3 x 2 = approx. 6 events per year)	Freshwater, dosed with either citric acid or sodium carbonate.
System preservation	Preserve the membrane system in the event it is required to be shut down (e.g. when the FPSO is offline such as cyclone disconnect).	65 m ³	Variable. Typically expected to occur 5 times per year.	Freshwater, dosed with sodium bi-sulphite.

3.6.9.1 Discharge of Clean Customised Water Flood Stream

The CWF produces up to 530 m³/day of ultra-filtered water.

Unplanned events such as a PSV release may also occur. In this event, any water within the CWF would be discharged to the environment via the seawater caisson or an emergency relief valve. The water during a relief event would comprise up to 65 m³ of water as described in **Table 3-2** and **Table 3-3** in addition to the clean CWF process stream.

During start-up, turndown and injection well testing operations, there is also continuous over boarding of the clean CWF process stream via pump minimum flows and SRU product dump lines, with the addition of a chemical residual oxygen scavenger. The waste stream may also include anti-foam which is used to dose the stream from time to time. This is an infrequent activity and represents effluent streams described under the non-routine discharges section above.

3.6.9.2 Summary of All Chemicals Used in the Customised Water Flood Package

To maintain the CWF injection system a chemical dosing regime is required. Upstream of the SRU HP feed pumps, scale inhibitor is dosed for precipitation control, chlorine scavenger to protect the membranes from oxidation and a non-oxidising biocide is dosed intermittently for biological control of the membranes. Sodium hypochlorite is provided for the ultra-filtration trains. Antifoam is also provided for dosing upstream of the deaerator if required. Oxygen scavenger is dosed into the sump of the deaerator to chemically reduce the oxygen content to the required levels.

A summary of all chemicals used as part of the CWF package, and their design dosage rates are shown in **Table 3-4**.

Table 3-4: Summary of all chemicals used by the customised water flood package

Chemical	Injection Location	Estimated Dosage (mg/L)
Hypochlorite	UF CEB	400
Scale Inhibitor	Upstream SRU	6
Chlorine Scavenger	Upstream SRU	4.2
Oxygen Scavenger	Deaerator	2.25
Antifoam	Deaerator	The deaerator has been designed with a low flux such that antifoam dosing should not be required
Non-oxidising Biocide	Upstream SRU	25
Subsea Corrosion Inhibitor	Subsea Users	-
Topsides Corrosion Inhibitor	Topside Users	-
Acid Cleaner (Liquid)	CIP Tank	2% v/v
Alkali Cleaner (Liquid)	CIP Tank	2% v/v

3.6.10 Drainage Systems

The NY facility has two separate drainage systems: process drainage system and the marine drainage system.

The process drain systems collect hydrocarbon-based and other liquid wastes (rain and wash water, etc) from all process areas across the facility. This is achieved via segregated sub-systems of:

- hazardous open drains
- non-hazardous open drains
- closed drains.

The marine drains are located throughout the machinery spaces, on the main deck and in the accommodation. The marine drains' contents are eventually discharged to the slops tanks (see **Section 3.6.10.4**).

The various components of the NY facility drainage systems are described in detail below.

3.6.10.1 Open Drains

The NY facility's process open drain systems collect water and hydrocarbons which are at atmospheric pressure (e.g. deck water). The open drain systems are independent of each other and are categorised as:

- hazardous
- non-hazardous or
- chemical injection package.

The process hazardous open drains system is designed to remove and collect any oily water from hazardous areas on the NY FPSO, including wash down water, some maintenance activities discharges and spillage of liquids on process decks, equipment drip trays or banded areas. The hazardous open drain contents are directed to the hazardous open drains tank located on M71. The contents of the hazardous open drains tank are discharged to the slops tank.

The process hazardous open drains tank has the capability to discharge to a tote tank for transporting and disposing the tank contents to an onshore waste treatment facility.

The turret hazardous drains system discharges the liquids from the turret hazardous drain collection vessels to the process hazardous open drains tank on M71.

The process non-hazardous open drains system is located on M85 (power generation). The drain system is designed to collect rain water, wash down water and liquids spilled to deck. The liquids are collected in the non-hazardous open drain tank and pumped to the slops tanks.

A liquid seal arrangement is provided between the slops tank and the open drains.

The open drains system is configured such that extreme rainfall or fire water deluge on the topsides modules is discharged directly overboard. The system is designed to route the initial run off to the hazardous open drain tank to collect any hydrocarbons which may have accumulated in the process equipment bunds and operates only in the case of excessive water flows; refer to additional details below on the deck drain overflow system.

3.6.10.2 Closed Drains

The closed drains system is used for draining volatile hydrocarbon residue from all enclosed process equipment.

The closed drains system is combined with the LP flare system and consists of an LP flare knockout/closed drain drum and transfer pumps. The hydrocarbon liquid drained from the process equipment is drained by vessel pressure and gravity to the LP flare/closed drains drum. The closed drains drum liquids are discharged from the closed drain transfer pumps to the LP separator, where it is returned to the separation process.

The vent line on the LP flare/closed drain drum ensures the operating pressure in the tank is close to atmospheric pressure. The vapour in the drum flows to the LP flare header for flaring.

The STP closed drain system is designed to collect hydrocarbon residue resulting from flushing and draining prior to disconnection. The system also supports the swivel barrier leakage tanks, which collect the fluid residue from the turret. The residue from the collection and leakage tanks is automatically discharged to the closed drains header via drain pumps.

After a reconnection, the STP compartment is drained of seawater using the ship's ballast pumps. Drain sumps and pumps are used to assist with final dewatering of the STP compartment, and act as the STP compartment open drain recovery system.

3.6.10.3 Machinery Space Bilges

The NY FPSO machinery space includes the ship's main engine and other auxiliary machinery. Oily water mixtures and hydrocarbon residue generated in this area are drained to the machinery space bilge tank. When required, the contents of the bilge tank are pumped to the NY FPSO slops tank.

3.6.10.4 Floating Production, Storage and Offloading Facility Slops Tank Management

In addition to the drainage processes discussed above, the NY FPSO slops tank may receive other less frequent sources of drainage water, primarily from marine operational activities. This includes activities such as CWF clean in place, cargo tank de bottoming, cargo tank stagger test water (for tank integrity testing), water washing of cargo tanks, and heavy weather ballasting where the cargo tanks may need to be used for ballast.

During normal operations, liquid from the port/starboard slops tank can be returned to the topside process and subsequently re-injected into the reservoir during normal operations. The No 5 crude oil tank can also accept produced water and return it to the topside process for separation and re-injection. Slops including waste oil could also be disposed of via transfer to a cargo tanker.

3.6.10.5 Deck Drain Overflow System

The overflow system is designed to collect fire water deluge demand for deck modules, or in some cases extreme rainfall, and discharge the accumulated water directly overboard or to the marine collection system (break tank). To collect the overflow from the modules, decks are bunded and provided with drain gullies, with an overboard drain connection.

The overflow system is designed to collect extreme rainfall or water deluged onto the FPSO in the event of a fire. To collect the overflow from the modules, main deck drains are bunded (100 mm high) and provided with drain gullies. Each drain gully contains an open drain pipe (connected to the open drain system) and a connection to the vessel's deck.

From the main deck, the water is collected on the main deck area then routed via the overboard header(s) to the marine environment. The water during a relief event would comprise up to 65 m³ of water as described in **Table 3-2** and **Table 3-3** in addition to the clean CWF process stream. This system applies for modules M10, M11, M20, M60, M70 and M85.

The drain system is provided with rodding points for all the main headers, to ensure any blockage that may occur can be cleared.

3.6.10.6 Cargo Tanks

The NY FPSO cargo tanks are designed to receive cooled stabilised crude oil from the topsides process system and includes 14 centre and port and starboard wing tanks. The individual storage tanks capacity range in size, with a total operational storage capacity of 1.2 million bbls.

The cargo pumps transfer the crude to offtake tankers and are located forward of the engine room, in a dedicated pump room, driven by a three-stage impulse steam turbine. The pumps are each equipped with an automatic unloading system. The export rate with a single pump is 530,000 bbls (84,270 m³) per day (refer to **Section 3.6.12.3** for further detail).

The cargo oil system is capable of inter tank transfer of crude and offloading simultaneously with either loading, crude oil washing or internal cargo transfer, as well as full slop tank functions dealing with oily water mixtures (sourced from either topsides or cargo operations).

Cargo loading and discharge is controlled from the CCR, where the aspects that can be controlled and monitored are:

- cargo planning using the vessel loading computer program
- cargo pumps and valves
- cargo tank levels, pressures and temperatures
- inert gas quality and pressure
- gas leakage into the ballast tanks via the gas detection system
- tank high level overfill alarm system.

An independent overfill alarm is fitted to each cargo and slop tank and activated when the liquid level reaches a set point (normally 98% by volume). The cargo tanks are fully inerted during all cargo handling operations, with all tanks common onto the main inert gas header. An ESDV is incorporated in the rundown line from the process plant.

Details of cargo offloading operations are provided below in **Section 3.6.11**.

3.6.10.7 Ballast System

The NY FPSO sea water ballast system is used to counteract sheer force and bending movement stresses on the FPSO's hull, caused by the loading and offloading of crude oil in the cargo tanks. Ballasting is also required to control the trim and heel of the vessel, to ensure stability remains within the design limits.

The vessel complies with MARPOL Protocol 73/78, with the ballast system completely segregated from the crude oil storage system. Segregated ballast is carried in the fore and aft peaks of the NY FPSO, and in five pairs of wing tanks arranged the entire length of the cargo tank area. The total capacity of the segregated ballast tanks is approximately 100,007 m³. The ballast pumps are interconnected to permit flexibility of operation.

The volumes of the main ballast tanks are controlled by two centrifugal pumps, one steam turbine driven and one electrically driven. The pumps are in the pump room and provided with their own sea chest. The pumps are connected to an overboard discharge line which ends approximately 0.5 m above the deepest water ballast line on the port side.

The ballast valves on the NY FPSO are hydraulically operated and can either be controlled remotely or with local hand-pumps as backup. The ballast system is also used for draining the STP compartment following a reconnection.

3.6.11 Offloading System and Offtake Tanker Mooring

The NY FPSO has a tandem offloading system, providing handling facilities to non-dedicated tankers of up to Suezmax (150,000 T) size, in accordance with Oil Companies International Marine Forum (OCIMF) requirements.

Before gaining Woodside's acceptance for offloading from the NY FPSO, export tankers are assessed for their performance, quality (historic performance or incidents, documentation, systems and procedures) and operational compatibility with the facility. Additional quality assurance of tankers is provided by external bodies with access to extensive databases, which ensures thorough evaluation (for example, the Shell 'SAFE-T' system). A tanker will only be accepted by Woodside for offloading if it passes the assessment. This requirement applies to each tanker offload, irrespective of the tanker flag, operator, or the date of the last visit to a Woodside terminal.

Once accepted for offloading, the tanker must comply with requirements under the NY Technical Systems Manual (TSM) – Offloading Systems which contains rules, information and operations guidelines. The manual also describes the operations and approach to the NY facility's cautionary and safety zone, and the rules that apply in each area. Approach to the facility must first be approved by the NY Offshore Installation Manager (OIM), then occurs under supervision of a Woodside Pilot in accordance with the IMO and International Maritime Pilots Association Guidelines.

While the offtake tanker is making its approach to the NY FPSO, a support vessel runs the messenger rope to the stern mounted mooring hawser, and then assists in the berthing operation as directed by the pilot, including transferring the hose to the offtake tanker connection. After the hose is connected, line up for cargo operations begins under the direction of the pilot, with communications continuously maintained between the offtake tanker, NY FPSO and facility support vessel. Separation between the NY FPSO and the offtake tanker is maintained by the support vessel on static tow at the stern of the offtake tanker, which also controls movement of the tanker.

Crude is offloaded to the offtake tanker via a 16" diameter 291 m long floating hose. It comprises a heavily reinforced material in sections approximately 11.8 m long, with flanged and bolted connections between sections. This allows each section to be independently tested and replaced if necessary. A double dry break coupling is fitted approximately 30 m from the offtake rail end of the hose, which will release at a predetermined tension. Oil spillage is minimised by closing the valves in each half of the parted dry break coupling.

Offloading operations from the NY FPSO take place as required, based on production rates. Offtakes are currently every 17 to 19 days and will decline in frequency as production rates drop over time. Trading tankers have an oil storage capacity of up to 120,000 m³; a full loading operation is expected to take up to 30 hours. Initial loading rates are approximately 700 m³/hr; however, once safety and override checks are satisfactory, the rate is increased to suit offtake tanker requirements, to a maximum loading rate of 4200 m³/hour.

Offloading to tankers is monitored by the NY FPSO's approved stress and stability program, which continuously calculates the stresses in the hull based on measured liquid levels and densities within the tanks and provides alarms if hull stresses exceed the allowable envelope.

The offtake hose is stored on a stern mounted hose reel when not in use. This reduces the likelihood of hose damage during handling or impact by vessel and subsequent hydrocarbon release.

3.6.12 Utility Systems

3.6.12.1 Facility Lighting

The NY FPSO has appropriate lighting to ensure a safe working environment during 24-hour operations, including normal, emergency and escape lighting on the hull and topsides. Lighting is split between emergency and normal lighting and comprises LED, fluorescent and HP sodium luminaries. The flare tower is illuminated by narrow beam floodlights. The lighting design of the NY FPSO complies with the International Association of Lighthouse Authority requirements for offshore facilities.

Unless required to support over the side activities (such as refuelling and lifting operations), lighting on the NY FPSO is directed to the work area, which limits light spill to the marine environment. Lights directed towards the water for the crane and loading/offloading operations are switched off when not required.

3.6.12.2 Heating, Ventilation and Air Conditioning System

The heating, ventilation and air conditioning (HVAC) system comprises HVAC equipment, ductwork and associated pipework. It provides independent and interdependent subsystems with pressurised, conditioned, purge and exhaust air services to various areas including accommodation, and various modules which can be operated as required and others continuously.

3.6.12.3 Nitrogen System/Generation

The NY facility nitrogen system consists of a nitrogen generation package, nitrogen bottle rack package and nitrogen distribution. It is in module M70.

The compressed air is passed through the nitrogen generation package to produce nitrogen which is used for compressor sealing, system blanketing, flare header purging and maintenance purging. The nitrogen generation package is a membrane separation system. The nitrogen bottle rack package consists of ten bottles of nitrogen, which has capacity to meet the nitrogen demands in case nitrogen is unavailable from the nitrogen generation package.

3.6.12.4 Steam System

The NY facility steam generating plant consists of two auxiliary boilers and a medium pressure and LP system.

Saturated steam is taken from both auxiliary boilers into a common steam main, with the normal pressure of the steam 1765 kPa. Steam is branched off the main line through reducing valves to supply the LP service systems. A reducing valve unit, complete with bypass valve, supplies steam to the 980 kPa system, and another reducing valve unit supplies the 686 kPa system.

The main steam line of the medium pressure steam system supplies the three cargo oil pump turbines, ballast pump turbine and the inert gas pressure control valve (dump valve). The inert gas system control valve dumps steam to the vacuum condenser, to allow the boilers to remain on a minimum of 30% load to maintain an acceptably low oxygen reading in the inert gas supply (less than 5% oxygen). Excess steam pressure at other times is managed by dumping steam to the atmospheric condenser.

The medium pressure system also supplies the topsides for process heating via a pressure reducing valve, located in the engine room. Crude oil from the topsides medium pressure steam system returns to the cascade tank in the engine room via a break tank on topsides, with condition monitoring to prevent contamination of the steam with process fluids (gas).

The LP steam systems provide all the necessary heating and general-purpose steam services throughout the vessel, and for the heated freshwater generators located in the engine room.

3.6.12.5 Seawater System

The primary function of the NY facility seawater system is to provide process and HVAC cooling. Two main seawater systems are provided, one for the hull system and utilities and the second for the topsides. A third smaller system provides cooling to topsides utilities when the main power generator is not available. The seawater system also supplies seawater to the CWF system. Refer to the section above for more information on the CWF system (**Section 3.6.9**).

The hull seawater cooling system draws water through the sea chests located on either side of the machinery room. The water is then pumped to the hull central coolers (heat exchangers), where the closed loop freshwater cooling system transfers the waste heat from the hull machinery and utilities to the sea water. This system cools the main engine, generators, HVAC, and steam plant. The heated seawater is then discharged back to sea via the overboard caisson.

The topsides seawater system cools the closed freshwater system. The closed loop freshwater system primarily supplies cooling water to maintain the optimum operating conditions for the process and topsides utility systems. The topsides seawater system draws water from the seawater lift caissons in the starboard ballast tank. Seawater is discharged to sea via the overboard caisson.

Average discharge rates from the topsides cooling system and hull cooling system are 80,000 m³/day and 56,000 m³/day respectively, at an average temperature of 20°C above the ambient sea (inlet) temperature, up to a maximum of 50°C during summer. Based on both systems operating the typical volume of cooling water discharged is 136,000 m³/day. The maximum potential discharge based on the integrity limit of the equipment is 224,500 m³/day. The overboard discharge line is provided with a vent to route to a safe location any hydrocarbon gas separated from the seawater due to cooler tube leak (HP compressors).

The seawater cooling system is segregated from the crude oil processing system, so there is minimal risk of crude oil contaminating the cooling water discharge.

The only additives to the seawater cooling systems are copper ions for the topsides seawater cooling system, and aluminium and copper ions for the hull seawater cooling system generated to suppress growth of fouling organisms. Dosing rate is dependent on the seawater flow rate.

3.6.12.6 Potable Water

Fresh water is generated for use on the facility via two reverse osmosis units and one distillation unit. The fresh water is stored in two 90 m³ potable water tanks. The unit is supplied with a seawater feed of up to 190 m³ a day. Up to 100 m³ of brine is discharged to the ocean from the unit each day, discharged via an overboard caisson approximately 3 m below the waterline (with the exact depth varying depending on ballast volumes). The salinity of the discharge water is approximately double that of the feed seawater.

A hydrophore system with pressurised tanks, pumps, filters, sterilisers and a calorifier provide the accommodation potable water distribution system with a pressurised hot and cold water supply.

The topsides freshwater distribution system is in module M70, and consists of a freshwater tank and pump, and is used for distribution of fresh water to safety showers, topside utility stations for deck wash/general use, and to the STP compartment for flushing of flow lines.

3.6.12.7 Inert Gas System

Inert gas on the facility is used to maintain a positive pressure in the vapour space of the cargo tanks, to prevent air ingress during offloading to an export tanker. The inert gas is also used in the slop tanks and in the ballast tanks as required.

Inert gas is produced on the facility by the main gas/diesel fired boilers. The flue gases pass through a scrubber demister unit, which cools and cleans the exhaust gas from the boiler exhaust before being fed to the cargo tanks.

The inert gas is supplied to the tanks by fans via a mechanical non-return valve, deck water seal and distribution piping. If the inert gas supply pressure is lost, the water immediately falls back and closes the seal, thereby preventing any back-flow of vapour from the tanks. The main inert gas and primary vent gas header pressure is controlled by two pressure relief valves on the flare tower.

The inert gas system is monitored and controlled in the CCR, including the oxygen content of the gas supplied to the cargo tanks. An oxygen content higher than 5% triggers an alarm in the CCR and closes the supply of gas to the tanks.

During loading of the cargo tanks, the inflow of crude oil displaces the inert gas which is vented to atmosphere from the forward riser on the flare tower. The system is also capable of purging and gas freeing cargo tanks for maintenance and inspection purposes. The gas is purged through the vent header to a safe location. The vent header operates in conjunction with the purge gas supply header. Inert gas fans are used in fresh air mode to displace the gas to prepare for inspection or hot work.

3.6.12.8 Power Generation

The main power for the NY facility is supplied by three 12,500 kW gas turbine driven generators, generating 11 kV/60 Hz. The generators are in topside module M85 and supply power to process, utility and marine consumers, including power for the sewage treatment plant and accommodation.

A fourth dedicated gas turbine is installed on M60 to drive the HP compressor.

A fifth dedicated gas turbine driven generator is installed on M40 to provide power for the CWF system.

The turbine generator units can operate on fuel gas or diesel, with normal operations currently on fuel gas. Diesel may be used at start-up if fuel gas is not available and is also generally used in a production outage and/or restart or when the vessel is disconnected from the STP mooring.

The facility currently has sufficient produced gas from reservoir (production) fluids to meet facility fuel gas demands. Reservoir modelling indicates that facility produced gas will continue to decline, to a point where fuel gas demand can no longer be met by produced gas.

When the facility can no longer meet fuel gas demand from produced gas, the facility is expected to first backflow gas from the VIN reservoir gas cap via the existing gas injection line to meet fuel gas demand. This is most likely to occur in 2024, but could occur in years before or after dependent on actual reservoir outcomes. The drilling and tie-back of up to two additional wells may also provide the additional fuel gas needed to meet demand.

Emergency power is supplied by a 440 V/60 Hz/1500 kW emergency generator. The emergency generator is equipped with both battery and hydraulic independent starting systems. The generator

is connected to the hull emergency switchboard, which has two tie-ins to the topsides emergency switchboard and the original ships emergency switchboard.

The emergency generator can be synchronised to the main turbine generator and can also run in parallel with the main turbine generators. This occurs by manual load sharing when transitioning between seagoing and production modes (and vice versa) during loss of main power recovery or black start, and for load testing the emergency generator.

The emergency generator is designed to withstand credible fire and explosion events and is located in a closed room. The emergency generator starts automatically if main power is lost. If this occurs, power is expected to be restored to the emergency switchboard within 30 seconds, providing necessary power to run system critical equipment.

Should the emergency generator system fail, an independent uninterruptible power supply (UPS) is provided for the hull and topside systems, STP compartment and PCM system.

A 440 V/60 Hz/250 kW black start generator is connected to the original ship's emergency switchboard. The black start generator provides auxiliary equipment (pre-lube and starting air) to black start the facility by starting the ship's marine generators. These generators can also be black started by the starboard emergency generator.

The power management system (PMS) is divided into two parts, one for the topsides systems and one for the vessel systems. The topsides PMS controls each of the turbine generators and load shedding and blocking start of heavy consumers in the prioritised order of:

1. non-essential services required for lighting and utilities
2. essential services required to maintain production
3. vital services required for safety, provided with a primary and secondary power supply (navigational aids, foam pumps, emergency lighting, etc).

The vessel PMS operates in periods when the main gas turbines are out of operation or when the topside 440 V switchboard is fed from the main switchboard. The vessel PMS is designed to manage the three marine diesel loads by sequencing generators on and off the switchboard and providing load sharing between marine generators.

3.6.12.9 Fuel Gas System

The main purpose of the facility's fuel gas system is to use off-take gas from the process or direct from the reservoir as fuel gas and/or blanketing gas. Fuel gas is used in the power generation turbines, gas compression turbines and steam generation boilers. The system also supplies purge gas to the HP flare system and fuel gas to the flare ignition panel/flare tip pilot burners.

The fuel gas system receives dehydrated gas from the glycol contactor on module M60, or directly from the reservoir via the reservoir fuel gas heater in cases when the HP compression system is not available. The reservoir fuel gas heater is provided to allow for potential fuel gas deficits from the production off gas later field life.

The fuel gas system includes a fuel gas scrubber, superheater, reservoir fuel gas heater and filters. Fuel gas supply pressure is maintained by regulating the incoming fuel gas flow rate to the fuel gas scrubber. A selector switch and pressure controller are used to regulate the inlet flow rate from either downstream from the glycol contactor or the reservoir back flow.

HP fuel gas consumers are HP compressor gas turbine B, CWF package turbine and power generator gas turbines A, B and C. The consumers of LP fuel gas are the steam boilers, glycol regeneration package, and the HP and LP flare tip pilot.

The HP compressor, CWF package turbine, power generation gas turbines and boilers have the capacity to operate on dual fuels, (fuel gas or diesel). Diesel is used in case of system start-up, when fuel gas is not available, or in an upset in the fuel gas system or the HP compressor system.

Total fuel gas consumption on the facility is metered by a fuel gas flow transmitter. The average power consumption from maximum topsides power demand and others is approximately 20 MW and will be 29 MW nearing end of field life. It will be relatively constant throughout field life.

3.6.12.10 Safety Features and Emergency Systems

A range of safety features and emergency systems have been integrated into the design and operation of the NY FPSO to manage safety risk. Maintenance and operation of these systems is key to ensuring safe operability of the facility.

Specific safety systems include:

- control and detection systems
- process control system
- central control room and bridge
- fire and gas detection system
- emergency and process shutdown systems
- emergency relief and depressurisation systems
- LP and HP flare systems
- ignition control
- emergency alarms and communications
- cargo hazard management
- evacuation and rescue facilities and equipment
- collision avoidance systems
- passive and active fire protection.

3.6.12.11 Accommodation Facilities

The NY FPSO accommodation area is located at the stern of the facility and is a refurbishment and extension of the original ship's accommodation. The accommodation comprises:

- temporary refuge, including CCR and dining station
- galley
- cabins
- offices
- medical station
- laundry
- heli-administration area
- recreation and leisure facilities.

3.6.12.12 Sewage and Putrescible Wastes

A biological sewage treatment and pumping unit is provided on the NY FPSO, with the capacity to treat black water and grey water flow for 80 people. Wastewater is discharged from the system via the hull discharge line (below the water line).

Putrescible waste (principally food scraps) is either ground to less than 25 mm diameter and disposed overboard or bagged and transported ashore for disposal as domestic waste, in accordance with the requirements of Woodside's Waste Management Plan for Offshore Facilities.

3.6.12.13 Sand Management

The NY FPSO production system and subsea facilities are designed to manage the rates of sand production from all reservoirs described in this EP. Sand produced from the reservoir is managed in accordance with the Vincent and Greater Enfield Sand Management Plan. The plan aims firstly to minimise sand production as far as practicable through a combination of well design features, and then to manage the sand which reaches the topside facilities. Specifically, the measures which minimise sand production include:

- premium sand screens in place on the wells to provide a mechanical barrier to sand production
- sand detectors installed on production trees and the topsides production headers
- upon detection of excessive sand production from a well, rate of production reduced until sand rates fall to acceptable levels, with failure to achieve acceptable levels triggering shut-in of the well.

Sand production is managed through a combination of detection, monitoring and subsea and topsides handling activities. Sand produced to the NY facility collects in the process system topsides and can be cleaned out manually during facility shutdown.

3.6.12.14 Diesel Fuel System

The NY FPSO's main engine, the marine and emergency generators, firewater pumps, lifeboats and man overboard boat use only diesel fuel. The turbine driven generators, turbine driven HP compressors and boilers (including pump drivers, heating medium and inert gas system) use fuel gas as their primary fuel, and have dual fuel capabilities, with diesel used as a secondary fuel.

The major components of the diesel system on the NY FPSO are the:

- hull main diesel storage tanks (five main tanks) – total volume 4239 m³
- topside diesel service tanks (three in total) – total volume 560 m³
- auxiliary diesel tanks (four in total) – total volume 25 m³.

Low-sulphur diesel is transferred to the NY FPSO in bulk from supply vessels. Diesel usage on the facility is monitored and metered.

3.6.13 Facility Operations

3.6.13.1 Lifting Operations

Lifting operations on the NY facility include:

- lifting from support vessels
- lifting around the facility
- special lifts using the various cranes
- non-crane based operational lifting.

Further details of the types of lifting activities are provided below.

The NY FPSO is equipped with six rotating cranes, one overhead crane, as well as numerous local handling/lifting provisions. There are also numerous dedicated laydown areas for materials, chemicals and provisions, located to optimise the lifting handling arrangement and reduce manual

handling. The location of the NY FPSO main laydown areas is shown in **Figure 3-6**, and details of external cranes are provided below:

- The No. 1 STP crane is located on the port side of the STP compartment, with an electrohydraulic hoist capacity of 20 t at 21 m. The crane provides lifting to and from the NY FPSO's STP compartment and forward equipment areas including the PCM, STP utility container and forward fire pump.
- The No. 2 port midship crane is located on the port side midship. This crane is an electrohydraulic pedestal mounted crane supported between tank sections No. 2 and 3. The hoist capacity is 15 t at 45 m and 5 t at 50 m with a whip hoist. The crane is intended to handle materials to/from supply vessels, transfer containers, chemicals, lubricants, equipment and spares, well service equipment, and to lift within the process areas.
- The No. 3 accommodation stores crane is a hydraulic pedestal mounted offshore deck crane located on the port side near the accommodation. The crane main hoist capacity is 15 t at 25 m and is used to transfer and handle consumables, galley provisions and other equipment to/from supply vessels. The crane is certified for man riding.
- The No. 4 starboard side deck crane is an electrohydraulic crane with capacity of 20 t at 21 m. The crane is elevated to service the seawater lift pumps in caissons and equipment on the starboard side of the process area.
- The No: 5 Palfinger marine crane is an electro hydraulically driven engine room crane is located port side aft. Crane No. 5 is rated for 10 tonnes at 17 m and can plumb the engine room hatch and is suitable for handling the heavier lifts from the machinery spaces.
- The No. 6 M40 crane is located on the port side near the new M40 module. This crane was installed as part of GE to service M40 and will also be used for general lifting activities.
- The overhead crane in the engine room travels longitudinally and transversely on overhead beams in the machinery space to facilitate main engine overhauls and lifting of stores and heavy machinery within the engine room.

3.6.13.2 Lifting from Facility Support Vessels

Lifting operations primarily include transferring stores and equipment between a support vessel and the facility. Lifts can be conducted from any of the main cranes, depending on weather conditions. The types of 'lifted equipment' may vary but generally include containers or skips of various sizes. The stores and equipment required by the facility are secured inside the skip or container. ISO containers for supply of monoethylene glycol (MEG) and corrosion inhibitor are also commonly lifted. In all cases the equipment will be appropriately rated for offshore lifting.

After offloading from the supply vessel, the facility will then backload to the supply boat any items to be returned to shore. These primarily include empty skips or containers or skips containing waste for onshore disposal.

3.6.13.3 Lifting Around the Facility

Once lifted to the laydown area, equipment may need to be repositioned at various locations throughout the facility for operational purposes. This includes lifting stores or equipment to various landing areas throughout the facility for unloading or use, moving waste bins to required areas, or relocating ISO containers.

3.6.13.4 Operational Lifting (Non-crane Based)

There is also a requirement to undertake operational lifting using other lifting appliances and lifting gear. This lifting is primarily undertaken for maintenance or repairs, and involves lifting and removing equipment such as valves, spools, and motors.

3.6.13.5 Special Lifts

There may be occasions where equipment may need to be lifted to support the NY facility operations using specifically prepared lift plans. On these occasions, the equipment will be packed up in a container or an approved lifting frame. All relevant lifting procedures will be adhered to, including preparation of an appropriate lift plan.

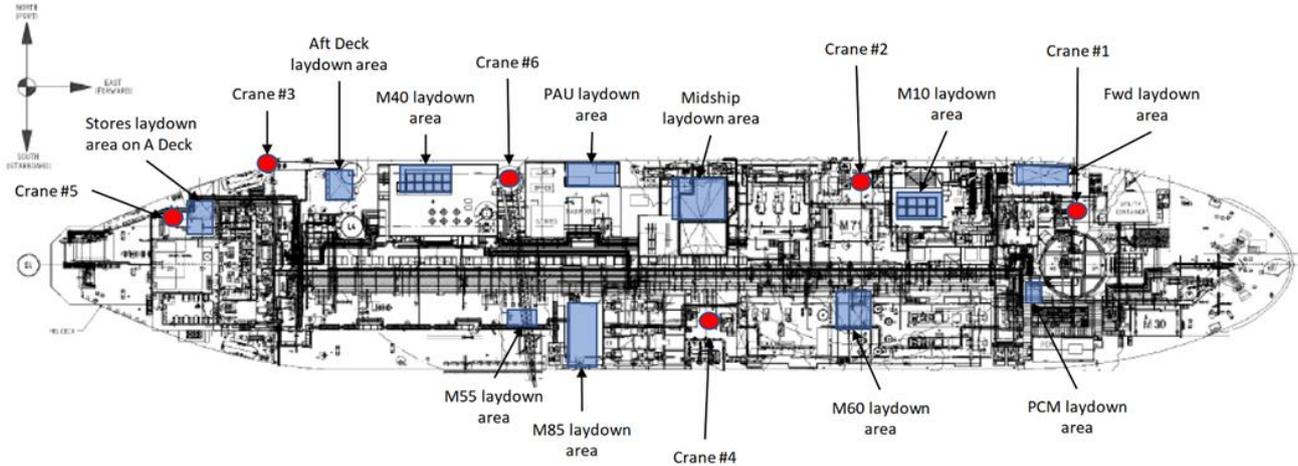


Figure 3-6: Ngujima-Yin floating production, storage and offloading facility main laydown areas

3.6.14 Diesel Bunkering

Low-sulphur diesel is transferred to NY FPSO in bulk from supply vessels via a hose reel and bunker connection, located on the port side of the FPSO’s main deck, forward of the accommodation. The bunker hose is handled by the port aft engine room crane. Diesel oil is stored in tanks located in the hull of the NY FPSO.

The diesel is purified and held in settling and service tanks prior to distribution for use. Diesel from the settling tank is transferred via the purifiers to the diesel service tanks for use in the topsides gas turbines, generator engines and (when required) the main engine. Outlet valves from the diesel tanks are fitted with pneumatically actuated, quick-closing valves remotely operated from the ship’s fire control station.

Bunkering of diesel fuel from supply vessels into the diesel storage tanks on the NY FPSO is governed by Woodside’s permit to work system. Bunkering is planned to mostly occur during daylight hours; however, it could also occur overnight if operationally required.

3.7 Support Vessel Operations

Vessels either LNG or diesel powered are used in a support capacity for transferring personnel in emergency scenarios, material and equipment to and from the facility. Vessels are also used for project field work. All support vessels are required to undergo a Woodside Marine Assurance Inspection to review compliance with marine laws and Woodside safety and environment requirements.

3.7.1 Facility Support Vessels

Specifications of the facility support vessel *Siem Thiima* (Figure 3-7) are presented in Table 3-5 as an example and represent the typical specifications of a support vessel. Vessels supporting the facility vary depending on vessel schedules and availability. While in the field, the vessel also backloads materials and segregated waste for transport back to the King Bay Supply Facility (KBSF) in Karratha.



Figure 3-7: Typical facility support vessel (*Siem Thiima*)

Table 3-5: Indicative facility support vessel specifications (*Siem Thiima*)

Attribute	Details
Type	Facility Support Vessel
Length overall (LOA)	89.2 m
Breadth	19.0 m
Draft	7.4 m
Dead weight tonnage (DWT)	5,500 tonnes
Accommodation	Berthing for 25 personnel

3.7.2 Other Support Vessels

Other support vessels such as subsea support or project vessels (crewed or remotely operated) are used for field work such as subsea IMMR and new well start-up and commissioning activities. Vessels supporting the activities may vary depending on operational requirements, vessel schedules, capability, and availability.

Typical support vessels use a DP system to allow manoeuvrability and avoid anchoring when undertaking works, due to the close proximity of subsea infrastructure. However, vessels are equipped with anchors which may be deployed in an emergency.

3.8 Helicopter Operations

Helicopters are the primary means of transporting passengers and/or urgent freight to/from the facility and support vessels. They are also the preferred means of evacuating personnel in an emergency. Helicopter support is principally supplied from Learmonth Airport.

3.9 Hydrocarbon and Chemical Inventories and Selection

3.9.1 Hydrocarbons

The main hydrocarbon inventories associated with major topside process systems are summarised in **Table 3-6**.

Table 3-6: Topsides process hydrocarbon inventories

Module/ Area	Isolatable Section	Fluid	Pressure (kPa)	Temperature (°C)	Volume (m ³)
M10	HP Separator Gas	Gas	800	70	100.1
M10	HP Separator Oil	Oil	800	70.1	33.1
M10	HP Separator 2-Phase	2-Phase	800	109.9	59.6
M10	Methanol Storage	Methanol	50	24	40
M11	LP Separator Gas	Gas	180	95	96.1
M11	LP Separator 2-Phase	2-Phase	180	95.5	90
M11	Electrostatic Coalescer Oil	Oil	400	95	428
M20	Manifold	2-Phase	1201	109.9	13
M30	HP Flare System	Gas	230	90	95.9
M60	HP Compressor 1st Stage Gas	Gas	1834	147	41.3
M60	HP Compressor 1st Stage Oil	Oil	700	50	1.5
M60	HP Compressor 2nd Stage Gas	Gas	5087	155	41.3
M60	HP Compressor 2nd Stage Oil	Oil	1834	50	0.8
M60	HP Glycol Inlet Scrubber Gas	Gas	5007	45	30.7
M60	HP Glycol Inlet Scrubber Oil	Oil	4997	45	2.9
M60	HP Compressor 3rd Stage Gas	Gas	15,700	50	7.5
M60	HP 3rd Compressor 3rd Stage Oil	Oil	4897	45	0.5
M70	Fuel Gas Fuel	Gas	3120	38.2	37.1
M71	LP Flare System	Gas	50	90	94.9
M85	Diesel System Generator	Diesel	20	24	0.1
M99	Fuel Gas to Main Power Module	Fuel Gas	800	56	37.1
M99	Fuel Gas to Boiler	Fuel Gas	800	56	3.5
M99	Fuel Gas to HP Compressor	Fuel Gas	800	56	37.1
Turret	Riser Production	2-Phase	1201	109.9	13
Turret	Riser Gas Reinjection	Gas	12,100	50	2.1
Turret	Inboard Gas Reinjection	Gas	12,100	50	4.3

In addition to the above inventories, crude oil and diesel oil are stored in tanks around the facility along with reservoir fluids in the production/test flowlines. The inventories of diesel oil and crude oil are presented in **Table 3-7** and **Table 3-8** respectively.

Table 3-7: Diesel oil and seal/lube oil in bulk storage and various day tanks

Diesel Oil Tank Description	Volume (m ³)
Inner fuel bunker tank (port)	1649
Fore fuel bunker tanks (starboard)	1233
Aft fuel bunker tank (starboard)	984
Diesel oil settling tank	197
No. 1 fuel service tank	139
No. 2 fuel service tank	128
MDO storage tank (port)	147
MDO storage tank (starboard)	185
Fuel service tank	96
Diesel oil overflow tank	41
Black start generator day tank	2
Emergency generator	7
Forward/aft fire water pumps	8
Swivel barrier fluid circulation tank (STP seal oil)	1
Swivel barrier fluid system tank (STP seal oil)	2
Turbine lube oil storage tank	~3.5
Main lube oil storage tank	~79
Main lube oil settling tank	~53
G/E lube oil storage tank	~13
G/E lube oil settling tank	~5

Table 3-8: Cargo tank crude oil volumes

Crude Oil Tank	Volume (m ³)
2C	30,697
3C	31,248
4C	31,248
5C	31,462
1p/s wings	16,648
2p/s wings	20,053
3p/s wings	20,414
4p/s wings	20,414
5p/s wings	14,679
Port slops	3514
Starboard slop	3514

3.9.2 Chemical Usage

Chemicals are used on the NY facility for a variety of purposes and can be divided into the following categories:

- operational process chemicals
- operational non-process chemicals
- facility maintenance chemicals.

Note, chemicals used in IMMR activities are described in **Section 3.10.5**.

3.9.2.1 *Operational Process Chemicals*

A process chemical is the active chemical added to a process or static system, which provides functionality when injected in produced fluid, utility system streams or for flowline treatment. These chemicals may be present in routine or non-routine discharge streams from the NY facility. Examples include corrosion inhibitors, biocides, scale inhibitors, demulsifiers, glycols and hydrate inhibitors.

3.9.2.2 *Operational Non-process Chemicals*

Non-process chemicals include chemicals which do not fall into the category described above but which may be required for operational reasons and, by virtue of their use, may be intermittently discharged or have the potential to be discharged (e.g. required as a result of maintenance or intervention activities). Examples include IMMR chemicals such subsea control fluids and dyes.

3.9.2.3 *Facility Maintenance Chemicals*

Maintenance chemicals include chemicals which are required for general maintenance or 'housekeeping' activities and are critical for overall maintenance of the facility and its equipment. These may include paints, degreasers, greases, lubricants, and domestic cleaning products. They may also include chemicals required for speciality tasks, such as laboratory testing and analysis. Maintenance chemicals generally present negligible risk to the environment as they are not discharged as a result of their use (e.g. paint), or are used intermittently and discharged in low volumes (e.g. domestic cleaning products).

3.9.2.4 *Indicative Chemical Inventories*

An indicative list of bulk chemicals commonly used on the NY facility, and estimated storage quantities, is summarised in **Table 3-9**. In addition to the chemicals listed, the NY facility may also maintain small volumes of various operational chemicals and facility maintenance chemicals as previously described.

Table 3-9: Indicative bulk inventories of chemicals

Material	Storage Means	Storage Capacity (m ³)
Methanol	Methanol storage tank	50
Crude antifoam	Dedicated storage tank	8
Subsea demulsifier	Dedicated storage tank	8
Production users demulsifier	Dedicated storage tank	8
Water clarifier	Dedicated storage tank	8
Subsea scale inhibitor	Dedicated storage tank	16
Process biocide	Dedicated storage tank	8
Slops tank biocide (storage tank in M10)	Dedicated storage tank	7.4
PW system corrosion inhibitor (storage tank in M10)	Corrosion Inhibitor tank	7.4 (storage vessel) 15 (working volume)
CWF system corrosion inhibitor (storage tank in M40)	Dedicated storage tank	30
Alcohol-resistant aqueous film-forming fighting foam (3% AR-AFFF) – process foam tank and deck foam tanks	Foam tanks for turret/process	2.5 and 4.4 (turret) 18 (process)
Aqueous film-forming fire-fighting foam (3% AFFF) – helideck foam tank	Foam Tank	<1

3.9.3 Environmental Consideration During Selection, Assessment and Approval of Chemicals

Operational chemicals required by the Petroleum Activities Program are selected and approved in accordance with Woodside’s process for selecting and assessing chemicals. This process is used to demonstrate that the potential impacts of the chemicals selected are acceptable and ALARP, and that they meet Woodside’s corporate requirements, which requires chemicals to be selected with the lowest practicable environmental impacts and risks, subject to technical constraints.

A summary of the environmental requirements of the Chemical Selection and Assessment Environment Guideline is outlined below.

3.9.3.1 Environmental Selection Criteria

Woodside’s process for selecting and assessing chemicals follows the principles outlined in the Offshore Chemical Notification Scheme (OCNS), which manages chemical use and discharge in the United Kingdom (UK) and the Netherlands (background on the OCNS scheme is provided below).

Operational chemicals are selected/assessed in compliance with the Woodside’s process for selecting and assessing chemicals, specifically:

- Where operational chemicals with an OCNS rating of Gold/Silver/E/D and no OCNS substitution or product warning are selected, or a substance is considered to pose little or no risk to the environment, no further control is required. Such chemicals do not represent a significant impact on the environment under standard use scenarios and therefore are considered ALARP and acceptable.
- If other OCNS-rated or non-OCNS-rated operational chemicals are selected, the chemical is assessed as follows:
 - If there is no planned discharge of the operational chemical to the marine environment, written technical verification of the ‘no discharge’ fate is provided and no further assessment is required.

- If there is planned discharge of the operational chemical to the marine environment, a further assessment and ALARP justification is conducted.

The ALARP assessment considers chemical toxicity and biodegradation and bioaccumulation potential, using industry standard classification criteria (Centre for Environment, Fisheries and Aquaculture Science scheme criteria). If a product has no specific ecotoxicity, biodegradation, or bioaccumulation data available, these options are considered:

- Environmental data for analogous products can be referred to where chemical ingredients and composition are largely identical.
- Environmental data may be referenced for each separate chemical ingredient (if known) within the product.

If no environmental data is available for a chemical or if the environmental data does not meet the acceptability criteria outlined above, potential alternatives for the chemical are investigated, with preference for options with a hazard quotient (HQ) band of Gold or Silver, or in OCNS Group E or D with no substitution or product warnings.

If no more environmentally suitable alternatives are available, further risk-reduction measures (e.g. controls related to use and discharge) are considered for the specific context and implemented where relevant to ensure the risk is ALARP and acceptable.

Once the further assessment/ALARP justification has been completed, confirmation that the environmental risk as a result of chemical use is ALARP and acceptable is obtained from the relevant manager.

3.9.3.2 Background Overview of Offshore Chemical Notification Scheme

The OCNS applies the requirements of the Oslo–Paris Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR Convention). The OSPAR Convention is widely accepted as best practice for chemical management.

All chemical substances listed on the OCNS list of registered products have an assigned ranking based on toxicity and other relevant parameters (e.g. biodegradation, bioaccumulation), in accordance with one of two schemes (as shown in **Figure 3-8**):

- **Hazard Quotient (HQ) Colour Band:** Gold, Silver, White, Blue, Orange, and Purple (listed in order of increasing environmental hazard), or
- **OCNS Grouping:** E, D, C, B, or A (listed in order of increasing environmental hazard). Applied to inorganic substances, hydraulic fluids, and pipeline chemicals only.

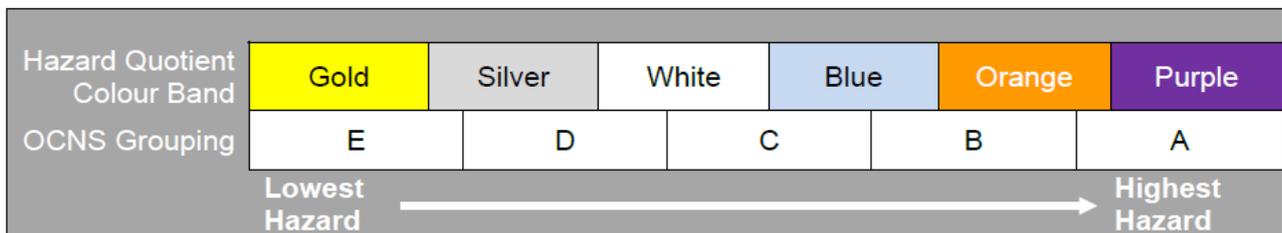


Figure 3-8: Offshore Chemical Notification Scheme ranking

3.10 Subsea Inspection, Monitoring, Maintenance, and Repair Activities

Subsea infrastructure is designed not to require significant intervention. Inspection and maintenance are undertaken to ensure the integrity of the infrastructure and identify problems before they present a risk of loss of containment. Intervention may be required to repair identified problems.

To manage subsea threats (risks) the IMMR process requires an appropriate response to be selected to manage specific equipment risks. This is typically one of: inspection, maintenance, monitoring or repair.

The IMMR process for subsea infrastructure, including any redundant equipment (**Section 3.10.4**), maintains equipment in good condition and repair, for production and to enable future removal.

Subsea activities are typically undertaken from a subsea support vessel or uncrewed surface vessel (USV) and may use ROV with transponders to inspect equipment.

Maintenance and repair activities may require the deployment of frames/baskets which are temporarily placed on the seabed. These typically have a perforated base with a seabed footprint of about 15 m². This equipment is removed from field via recovery to the support vessels at the completion of IMMR activities.

3.10.1 Inspections

Inspection of subsea infrastructure is the process of physical verification and assessment of components to detect changes to the as-installed location and condition by comparison to initial state following installation and previous inspections. Details of typical subsea infrastructure inspections/surveys and frequencies are provided in **Table 3-10**. Actual scope and frequency of subsea equipment (operational or redundant) and flowline inspections are determined using a risk-based inspection (RBI) methodology and associated plans.

RBI is commonly used within the industry as a method for determining inspection frequencies (Energy Institute, 2009; DNV, 2019). RBI for redundant/replaced subsea systems that have been wet-parked inherently pose less risk to the environment and may drive a less frequent inspection frequency.

Table 3-10: Typical subsea infrastructure inspections/surveys and frequencies

Type of Inspection/Survey	Subsea Infrastructure	Purpose	Approximate Frequency
General visual inspections (GVI)	Structure, wellheads, spools, flowlines and risers	Check general infrastructure integrity.	Varied – every 1 to 9 years. Typically 4 yearly.
Close visual inspections (CVI)	All subsea infrastructure	Investigate certain subsea infrastructure components.	Varied – every 1 to 9 years. Typically 4 yearly.
Cathodic protection (CP)	All subsea infrastructure	Check for corrosion.	Varied – every 1 to 9 years. Typically 4 yearly.
Wall thickness surveys	Production and crossover manifolds and flowlines	Monitor the condition of subsea infrastructure (i.e. ultrasonic testing).	Typical: Once every 25 years.
Side scan sonar (SSS) and/or multibeam sonar (MBES) and/or laser profiling	Flowlines and wellheads	Identify buckling, movement, scour and seabed features in survey area. Low frequency/intensity sonar pulses directed to seafloor, undertaken for approximately five days every four years.	Varied – every 1 to 8 years. Typically 4 yearly.
Sub-bottom profiling (SBP)	Around subsea components	Use low frequency echo sounder to identify returns of metals under the seabed. Only lower penetration SBP sounders are required.	Triggered inspection only, risk based.
Non-destructive testing (NDT)	Flowlines and manifolds (if required)	Evaluate the properties of material/ items using electromagnetic, radio graphic, ultrasonic, acoustic resonance testing (ART), or magnetic equipment.	Typical: Once every 25 years.
Seabed sampling surveys including minor grabs/cores	NA	Identify benthic fauna, sediment, etc. Grabs/cores typically 0.1 m ² per sample.	Typical: Once every 25 years.
Anode inspections and/or replacement	Production and crossover manifolds, trees and flowlines	Take samples of anode materials for testing.	Typical: Once every 25 years. Worst Case: Once every 25 years.
Marine growth sampling	All subsea infrastructure	Take samples of marine growth for testing.	Typical: Once every 25 years. Worst Case: Once every 25 years.
Pigging	Rigid flowline	Inspection, maintenance, repair or to facilitate modifications.	Typical: Once every 4 years, conducted on a corrosion risk basis.

3.10.2 Monitoring

Monitoring of subsea infrastructure refers to the process of surveillance of the physical and chemical environment that a subsea system or component is exposed to, to determine if and when damage may occur, and (where relevant) predict the rate or extent of that damage. Monitoring activities may include process composition testing, acoustic sand detectors, erosion probes, metocean and geological seismic monitoring, and cathodic protection testing.

3.10.3 Maintenance

Planned maintenance activities on subsea infrastructure are undertaken to prevent deterioration or integrity failure of infrastructure. Typical maintenance activities are described in **Table 3-11**.

Table 3-11: Typical subsea maintenance activities

Type of Maintenance	Subsea Infrastructure	Purpose	Approximate Frequency
Cycling of valves via control system	Well	Test functionality of technical integrity valves	Every 6 months
Marine growth removal	Production and cross-over manifolds and retrieval components (e.g. chokes)	Reduce weight or gain visual access	Based on outcomes from visual inspections (Table 3-12) and marine growth trends on regional infrastructure
Flushing of chemical hydraulic fluid lines	Hydraulic fluid lines	For repair scenarios	When required for repair
Leak and pressure testing	All subsea infrastructure	Test integrity of subsea infrastructure	Following installation of subsea infrastructure components after a repair of intervention, prior to return to service

3.10.4 Repair

Repair activities are those required when a subsea system or component is degraded, damaged or has deteriorated to a level outside of acceptance limits. Damage sustained may not necessarily pose an immediate threat to continued system integrity but may present an elevated level of risk to environment or production reliability. Due to the design of subsea infrastructure and materials used, repairs are undertaken on an as needs basis. The requirements and frequency of these repairs are dictated by the outcome of the inspection and maintenance regimes described in **Section 3.10.1** and **Section 3.10.3**. Typical subsea repair activities include:

- subsea choke replacement
- chemical injection metering valve insert replacement
- subsea control module (SCM) or control distribution unit (CDU) replacement
- hydraulic flying lead (HFL) replacement
- electrical flying lead (EFL) replacement
- tree cap changeout
- logic plate/cap changeout
- flowline or spool support with grout bag or mattress
- spool disconnection and/or replacement
- umbilical jumper replacement and/or relocation
- flowline replacement
- scour prevention installation
- cathodic protection system replenishment/repair.

When equipment is replaced, the redundant equipment, may remain in situ or be removed from the field. The location of redundant subsea infrastructure items is recorded as part of the ROV as left survey and input into a database for the inventory associated with each title (refer **Section 6.6.2**). The inventory is used to track equipment on the seabed to enable planning for future removal.

3.10.5 Subsea Chemical Usage

Planned chemical discharges may occur during a range of subsea system operation and IMMR activities. However, these are either small volumes, or discharged intermittently. Operational chemicals to be used in the NY subsea infrastructure are selected and assessed using Woodside's chemical selection and assessment guideline, as detailed in **Section 3.9.2**. Typical chemicals which are used in the NY subsea infrastructure and may be released during IMMR activities include:

- Control fluid – the subsea control fluid presently used in the subsea systems is Oceanic HW443. HW443 is a water-based product, with the major component ethylene glycol.
- Methanol is used to prevent/remove hydrates in the subsea system. Methanol is classified as a PLONOR chemical in the North Sea (i.e. it poses little or no risk).
- Demulsifier is used to counteract the natural surfactants present, wetting agents or other chemicals used to help separate water-in-oil emulsions. Demulsifier is injected continuously, with injection points at the subsea manifolds, production headers and pump stations.
- Scale inhibitor is used to prevent scale formation in the oil, PW and water injection systems. Scale inhibitor is injected continuously, with injection points provided at each subsea wellhead and the PW injection pump suction.
- Corrosion inhibitor is generally used to manage and prevent corrosion within pipelines and flowlines.
- Hydrate control – MEG and TEG are used for hydrate control.
- Biocide is used to prevent the bacterial growth of sulphate reducing bacteria in the water injection pump (WIP), slops tank and production header. Hydrogen sulphide formation poses safety risk to personnel and infrastructure integrity (e.g. enhanced corrosion).
- Dye – chemical dyes (fluorescein liquid dye for example) are used to identify the source of a flow or flowline leak.
- Acid – where removal of calcium deposits is required, Woodside typically uses sulphamic (or equivalent) acid. Alternatives such as citric acid or calcium wash may be used.
- Barrier fluid is used to protect motors and subsea equipment against process fluids and seawater, as well as provide cooling and lubrication.
- Oxygen scavenger is used to reduce/de-oxygenate the flowlines and prevent corrosion and aerobic bacterial growth.
- Surfactants are formulated to remove water and organic deposits from flowlines.
- Grout – the material used in grout, mattresses and rock is typically concrete-based.
- Staurolite products – used for abrasive/sand blasting to clean and remove marine growth, the main component is staurolite, which is a naturally forming mineral.

3.10.6 Intervention Isolations

There are planned environmental discharges during subsea IMMR activities, for example during pressure/leak testing or flushing. Where practicable, flushing is performed prior to disconnection of a subsea component to reduce residual hydrocarbon or chemical releases to the subsea environment upon disconnection. The flushing chemicals used for this activity may be supplied from either the facility or a chemical package via a downline from a support vessel. Where possible, flushed fluids are returned to the FPSO and be processed and treated through the production system. **Table 3-12** shows typical discharge volumes during different IMMR activities.

Table 3-12: Typical discharge volumes during different inspection, maintenance, monitoring and repair and subsea activities

Activity	Description
Pressure/leak testing	Chemical dye estimated <10 L.
Flushing	Residual hydrocarbon or chemical release (corrosion inhibitor and oxygen scavenger) volume is dependent upon injection port size, component geometry and pumping rates.
Hot stab changeout	Hydrocarbons or control fluid estimated <10 L.
SCM changeout	A typical release of diluted acid is estimated to be 400 L and of control fluid is estimated to be 10 L.
Jumper and umbilical replacement	Typical releases of hydraulic fluid, MEG and corrosion inhibitor are estimated to be <40 L each, typical acid release of <80 L.
Choke changeout	Release of hydrocarbons <10L and a typical release of MEG is estimated to be 280 L, typical acid release of <80 L.
Tree cap changeout	Release of hydrocarbons estimated <50 L and a typical release of MEG is estimated to be <50 L.
Logic plate changeout	Release of hydrocarbons estimated <20 L and a typical release of MEG is estimated to be <20 L.
Flowline or spools repair, replacement and recovery	Typical release of hydrocarbon or other chemicals depends on equipment configuration and flushing ability. This will be subject to an ALARP determination for the activity, as per normal practice.

3.10.7 Pressure and Leak Testing

Pressure testing is completed to test the integrity of subsea infrastructure, isolations and identify any leaks. Pressure is usually applied to the component from the NY FPSO but can also be applied via a downline or ROV from a support vessel.

Pressure in the isolated section of flowline or subsea component is monitored to check for any drop in pressure, and/or visually inspected to determine the location of any leaks.

A typical release of chemical dye during leak testing is estimated to be two litres. The worst case is estimated to be approximately ten litres. This volume may already be pre-dosed within the subsea control fluid, in which case the chemical dye component within the total chemical volume will remain <10 L.

3.10.8 Flushing and Pigging Operations

During flowline lifecycle, there may be a need to conduct flushing and/or pigging for a variety of reasons (e.g. inspection, maintenance, repair, facilitate modifications or to remove hydrocarbons in preparation for decommissioning).

3.10.8.1 Pre-disconnect Flushing

The flushing chemicals used for this activity may be supplied from either the facility or a chemical package via a downline from a support vessel. However, flushed fluids will return to the NY FPSO and be processed and treated through the production system.

Flushing will take place at a predetermined rate, volume and/or duration, designed to reduce the volume of residual hydrocarbons or chemicals within the component and adjoining structures to ALARP prior to disconnection. The displacement effectiveness of pre-disconnect flushing depends upon a range of limiting factors such as injection port size, component geometry and pumping rates, which can limit the velocity and mixing of flush fluids in the component. After disconnection, the residual hydrocarbon or chemical volume and the flushing medium is released to the subsea environment.

3.10.8.2 Post-disconnect Flushing

Post disconnection, residual hydrocarbons and chemicals may remain in the component due to the limiting factors discussed above. Before lifting the component onboard a support vessel, a secondary higher velocity flush may be required to ensure the component meets safety requirements for storage on the support vessel deck. If so, it will typically be flushed to the subsea marine environment with seawater (treated with biocide, oxygen scavenger and surfactant supplied from a chemical package) up to ten times the volume of the component, via a downline from a support vessel.

3.10.8.3 Pigging

Should pigging of the rigid flowline be required, provision has been made for the installation/recovery of temporary subsea/topsides pig launcher and receivers. The entire flowline pigging system, including the launcher, receiver and the respective flowlines is designed for maximum operation pressure of the production system.

It is not expected that the pigging activity will result in discharges to the ocean other than a minor release of fluids to the environment during installation of a pig launcher/receiver. Discharges would be consistent with the order of magnitude of release that occur during other IMMR activities, such as MPP changeout.

3.10.9 Marine Growth Removal

Due to the relatively high rate of marine growth in the vicinity of the NY FPSO, it is often necessary to remove excess growth prior to undertaking many subsea IMMR activities. Marine growth removal is undertaken with an ROV or diver. The different techniques are described in **Table 3-13**.

Table 3-13: Marine growth removal techniques

Activity/Equipment	Description
Water jetting	Uses high pressure water to remove marine growth
Brush systems	Uses brushes attached to an ROV to physically remove marine growth
Acid (typically sulphamic acid)	Chemically dissolves calcium deposits on subsea infrastructure
Sand/abrasive blasting	Additional cleaning to allow close visual inspections

3.10.10 Sediment Relocation

If sediment builds up around a flowline or other subsea infrastructure, an ROV-mounted suction pump/dredging unit may be used to relocate the sediment to allow inspection/works to be undertaken. This activity is limited to relocating small amounts of sediment material in the immediate vicinity of the subsea infrastructure (i.e. within the existing footprint). Sediment relocation typically results in minor seabed disturbance and some localised turbidity.

3.10.11 Corrosion Protection

Without protection, corrosion of the NY subsea infrastructure is likely to occur.

Surveys may be undertaken using probes (e.g. electrical resistance probes) to assess the effectiveness of these techniques. If a survey identifies the corrosion protection layer requires repairs, appropriate remediation options will be investigated.

If additional anode skids are required, they will be placed on the seabed using a support vessel crane. A typical anode skid will have a seabed footprint of approximately 8 m². It is necessary to remove marine growth around the point where the anode skid is to be connected to establish good continuity through clamping and/or welding.

No chemical release is anticipated for these activities; however, they may result in some minor disturbance due to placement of skids, removal of marine growth, sediment relocation, and placement of ROV tool baskets and DP transponders on the seabed.

3.10.12 Span Rectification, Flowline Protection and Stabilisation

Due to tidal currents or other scouring processes, sections of flowlines, spools jumpers and umbilicals may become unsupported by the seabed (span), and/or become unstable on the seabed. Spanning or instability may expose the component to the risk of stress beyond design parameters, increasing the risk of failure.

A number of techniques may be used for span rectification or component stabilisation and protection, including grout bags, mattresses, anchors or rock dumping. All techniques require a support vessel crane to deploy the material and a ROV to ensure it is accurately placed on the seabed. In addition, a subsea component may require protection (e.g. from supply vessel lifts onto the NY FPSO and flowline crossings).

3.10.12.1 Grout Bags

Span rectification typically involves placing a grout bag with anti-scouring skirts under the spanned component. Grout is pumped into the grout bag from a support vessel via a downline. Once the bag is inflated, it acts as a pillow, with the pipe resting on top (**Figure 3-9**). Typical grout volumes will depend on the size of the span and may vary from 200 kg to greater than 2000 kg.



Figure 3-9: Grout bags in position

3.10.12.2 Mattresses

Mattresses are typically made of concrete and may be used for span rectification or flowline protection and stabilisation. An example of a mattress over a flowline is provided in **Figure 3-10**. Mattresses are typically 3 m x 6 m in size, therefore may disturb 18 m² of the seabed.

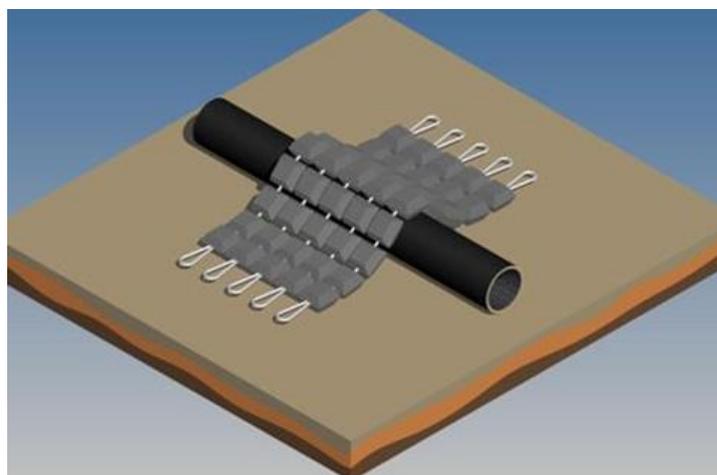


Figure 3-10: Concrete mattress for span rectifications or flowline protection or stabilisation

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3.10.12.3 Rock Placement

Rock placement for span rectification is typically small scale. It involves using one tonne bulker bags filled with rock, with the number of bags varying to suit the application. This activity will cause seabed disturbance due to placement of material on the seabed; however, the area of seabed affected will be small and localised and is unlikely to extend beyond the area originally impacted during the laying of the flowline.

In addition, the activity may result in some minor disturbance from removing marine growth, relocating sediment, and placing ROV tool baskets and DP transponders on the seabed.

3.10.13 Cycling of Valves

The NY facility subsea infrastructure contains valves that are operated remotely from the NY FPSO (using subsea control fluid), and manually operated valves that require direct manipulation by ROV. Regular opening and closing of subsea valves ensures mechanical elements remain lubricated and do not seize, which may occur if left untouched for extended periods of time. Valve cycling is undertaken annually for critical valves.

There are no planned discharges associated with ROV-operated valve cycling.

3.10.14 Choke Changeout

Subsea chokes are located on pump stations and XTs to control the flow of fluids in the subsea system. A choke may require replacement over the life of the field. During a choke changeout, there may be a small release of residual hydrocarbons. A typical release of hydrocarbons during a choke changeout is estimated to be 10 L, and a typical release of methanol during a choke changeout is estimated to be 300 L.

3.10.15 Subsea Control Module Changeout

SCMs are the link between surface and subsea controls. An SCM is a retrievable module located on a subsea wellhead or manifold. SCM changeout includes cleaning using acid. Acid (typically sulphamic acid) may be used to remove calcium deposits from the SCM-wellhead interface. This acid will be released to the marine environment. A typical release of acid associated with SCM changeout is estimated to be 400 L, and the worst case is estimated to be approximately 1000 L. A typical release of control fluid during an SCM changeout is estimated to be 10 L; the worst case is estimated to be approximately 100 L.

3.10.16 Jumper and Umbilical Replacement

Subsea umbilicals provide hydraulic and electrical power, communications, and chemical supplies to and between subsea assets through a number of cables and tubes (**Figure 3-11**). Jumpers (short umbilical sections) connect subsea assets over short distances.



Figure 3-11: Subsea umbilical

If an umbilical or jumper fails during field life, it will require repair or replacement. Some seabed disturbance will result from parking the jumper on the seabed, with the largest NY facility jumper having a seabed footprint of 200 × 0.5 m (100 m²).

Details of typical and approximate worst-case chemical releases associated with a hydraulic umbilical/jumper repair/replacement are provided in **Table 3-14**.

Table 3-14: Typical releases associated with a hydraulic umbilical/jumper repair/replacement

Component	Hydraulic Fluid		MEG		Inhibitor	
	Typical	Worst Case	Typical	Worst Case	Typical	~ Worst Case
Jumper	<50 mL	10 L	<50 mL	5 L	<50 mL	5 L
Umbilical	<5 L	40 L	<2 L	25 L	<2 L	25 L

3.10.17 Multiphase Flow Meter Changeout

An MPFM is a device used to measure the individual phase flow rates of hydrocarbons and water. An MPFM is located on each NY facility subsea manifold, as well as on each GE flowbase/tree assembly.

An MPFM may require replacement over the life of the field. During an MPFM changeout, there may be a small release of residual hydrocarbons and other chemicals as listed in **Table 3-15**.

Table 3-15: Typical releases associated with an multiphase flow meter changeout

Chemical	Volume (L)	
	Typical	Worst Case
Hydrocarbons and PW	<5	50
Methanol	<2	20
Barrier fluid	<2	20
Demulsifier	<2	20
Scale inhibitor	<2	20

3.10.18 Multiphase Pump Changeout

MPPs are designed to transport hydrocarbon and water mixtures from the well to topside processing facilities. A pump may require replacement over the life of the field. During a changeout there may be a small release of residual hydrocarbons and barrier fluids as listed in **Table 3-16**.

Table 3-16: Typical releases associated with multiphase pump changeouts

Chemical	Volume (L)	
	Typical	Worst Case
Hydrocarbon PW mix	<50	350
Barrier fluid	<5	10
Corrosion inhibitor	<5	10
Methanol or MEG	<500	900

3.10.19 Tree Cap Changeout

The tree cap protects the top of the wellhead from the subsea environment. A tree cap may require replacement over the life of the field. During a tree cap changeout, there may be a small release of residual hydrocarbons and/or chemicals as listed in **Table 3-17**.

Table 3-17: Typical releases associated with tree cap changeout

Chemical	Volume (L)	
	Typical	Worst Case
HCs and PW	<5	50
Methanol	<2	20
Demulsifier	<2	20
Scale inhibitor	<2	20

3.10.20 Chemical Injection Throttle Valve Changeout

A chemical injection throttle valve (CITV) is a restriction type valve designed for subsea use. It controls the chemical flow rates in subsea systems. The CITV is remotely operated from the surface and replaceable by ROV. A typical CITV repair/replacement program only results in minor seabed disturbance. There are no planned discharges associated with this activity.

3.10.21 Logic Plate/Cap Changeout

A logic plate/cap is a removable hydraulic plate that is typically found on subsea manifolds. It receives communications and hydraulic services from the UTA and distributes them to multiple users such as trees, manifolds, pumping and boosting stations, and infield tie-ins.

A logic plate is designed to be easily recoverable for repair and/or replacement. During changeout there may be a small release of hydraulic fluids and MEG as listed in **Table 3-18**.

Table 3-18: Typical releases associated with logic changeout

Chemical	Volume (L)	
	Typical	Worst Case
Hydraulic fluid	<5	20
MEG	<5	20

3.10.22 Accumulator Skid (Barrier Fluid Top-up)

Temporary accumulator skids are installed adjacent to the multiphase pumps while NY is off station, to preserve barrier fluid within the pumps. These skids are designed to maintain multiphase pump barrier fluid pressure above ambient, preventing seawater ingress into the pumps. Installed temporarily on the seabed, there is one accumulator skid tied in to each of the two pumps.

Each skid is roughly 6 m x 6 m and contains accumulator bottles filled with barrier fluid (typically Shell Morlina 5). The accumulator skids and barrier fluid system may be recharged using a downline from an intervention vessel when required.

3.10.23 Spool Repair, Replacement and Recovery

The NY facility subsea infrastructure has spools for tie-in of the wellheads to the production flowlines. Spools transport reservoir hydrocarbons and any process chemicals injected subsea (for example, hydrate and scale inhibitors) from the wellheads to the manifolds. Spools are designed to accommodate a variation in temperature and flowrates due to hydrocarbons being produced in conjunction with the different operating modes (i.e. shut down, commissioning, etc). Spools have a tie-in connection system at each end to facilitate installation and disconnection.

Spools may need to be repaired and/or replaced throughout the life of the field.

The replacement spool will be transported prefilled with biocide/corrosion inhibitor, MEG and dye. During installation, there may be a small associated discharge when the caps are removed.

Potential discharges associated with spool activities are difficult to accurately determine without detailed engineering and activity specific planning which incorporates risk reduction and mitigation considerations. Notwithstanding, typical releases may be approximately 100 L of hydrocarbons associated with a spool replacement.

A detailed internal risk assessment will be performed before such activities, considering health, safety and environmental implications. Any potential discharges associated with this activity, where unavoidable, will be reduced and controlled to demonstrate ALARP using techniques such as flushing. This process will also include an assessment to ensure the activity is undertaken in compliance with this EP.

Details of typical and worst-case releases associated with spool retrieval/installation are provided in **Table 3-19**.

Table 3-19: Typical chemical releases associated with spool retrieval/installation

Fluid	Typical	Worst case	Discharge point
Spool Disconnection			
Hydrocarbons	2 L oil and 9 kg gas	4 L oil and 12 kg gas	Subsea discharge (at tree and manifold)
MEG	1 L	1 L	Subsea discharge (at tree and manifold)
MEG – if secondary flushing is employed	900 L – assumes 50 m spool MEG filled and flushed	1200 L – assumes 75 m spool MEG filled and flushed	Subsea discharge (through flushing cap)
Spool Installation			
MEG and dye mix, potentially including corrosion inhibitor and biocide	1 L	1 L	Subsea discharge (at tree and manifold)

When equipment is replaced, the redundant equipment, may remain in situ or be removed from the field. The location of redundant subsea infrastructure items is recorded as part of the ROV as-left

survey and input into a database for the inventory associated with each title. The inventory is used to track equipment on the seabed to enable planning for future removal.

3.11 Well Management and Maintenance Activities

NY facility subsea well interventions, workovers and well kills require a suitable vessel or drill rig to accommodate and support intervention packages. Therefore, these activities do not form part of the scope of this EP. Unloading and clean-up from subsea wells via the NY FPSO may be required from time-to-time as described below.

3.11.1 Well Unloading and Clean-up

After well construction, subsea interventions, workovers and well kills, the well may be unloaded and flowed via the process facilities to be cleaned of any remaining chemicals and fluids in the wellbore or reservoir. This includes the hot commissioning (initial start-up) activities of the additional two new wells and associated subsea infrastructure. During this phase, the products may be processed as follows:

- Gas will be routed into the production process where possible, or flared if unsuitable.
- Well clean up will be as per normal process by flow to the HP Separator, liquids may not be separated and flow as a combined oil/water/well clean up fluids stream to the cargo tanks.
- Wastes (may include fluids and sand/solids) will be managed as appropriate based on composition. Solids will be separated for onshore disposal.

Before production from the two new wells commences, these fluids require dewatering which will be undertaken via the NY FPSO (**Section 3.12**).

3.11.2 Prolonged Period of Ngujima-Yin Floating Production, Storage and Offloading Facility Sailaway

During potential periods of extended FPSO sailaway (e.g. when NY FPSO is disconnected and sailed away to the shipyard) normal well monitoring from the FPSO is unavailable. During these periods wells are shut-in and leak off tested in accordance with the accepted Ngujima-Yin Well Operations Management Plan (WOMP). By managing well integrity through ensuring that the wells barriers are verified, wells are left in a safe state, and the risk of loss of containment is reduced to ALARP.

3.12 New Well Start-up and Hot Commissioning

It is assumed the new production wells will have been drilled, completed and suspended (cold commissioned) as part of the drilling and installation EP. Suspension with either solids-free fluid (brine) or a combination of brine and diesel in the well bore is used to protect the integrity of the infrastructure. These fluids are to be cleaned-up via the FPSO before start-up of production (hot commissioning). It is estimated a new production well clean-up will take approximately six days to complete.

Brine used for suspension is typically to achieve approximately <70 NTU and/or <0.05% TSS. When the two new wells are cleaned up, certain topside equipment (i.e. Train A water treatment system, inter-stage heater, electrostatic coalescer, crude oil cooler) maybe isolated/bypassed to avoid contaminating these systems with well clean-up fluids, and to minimise the impact of solids on equipment where blockage could occur. The two new production wells will be cleaned up to HP Separator A, with GE wells being simultaneously produced to HP Separator B. At this time, GE production maybe ramped back to minimum stable rates, and only wells with low PW production rates may be online.

All PW is planned to be injected into the disposal wells, either directly if the PW treatment systems are online and PW quality is met or indirectly if the PW is rundown with crude oil to the off-spec cargo

tank and then separated and sent to slops, or if the PW does not meet the injection water quality it gets directed to slops. From slops the PW is recycled back to the process trains for re-processing and injection into the disposal wells. Consideration is also given to shutting in high PW wells if the slops water volume is getting high.

The solids produced during unloading and clean-up are expected to be predominately filter cake from the completion, which is composed of low hardness calcium carbonate. The majority of solids deposit in topsides process vessels and in the off-spec cargo tank.

To ensure process stability, a minimum number of low water cut wells in the Vincent field are expected to also be online during new well clean up, with fluids from these wells being directed to HP Separator A.

Gas is directed to the HP compressor, as this should be online throughout well clean-up. If it is not online or sufficient gas is not available, the gas will be flared. LP Compression should be brought online when there is sufficient gas for stable operation. It is possible that there will not be sufficient gas for normal fuel gas supply. In this case, fuel gas is expected to be supplied by fuel gas blending or sole supply from backflow of Vincent gas injection system. If the Vincent gas injection well is depleted, users are planned to be on a mix of diesel and fuel gas. During well unloading and clean-up of the subsea and topsides, acoustic sand detectors are planned to be used to monitor and trend the solids content of the produced fluids.

4 DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 Overview

In accordance with regulations 21(2) and 21(3) of the Environment Regulations, this section describes the existing EMBA by the activity (planned and unplanned parts of the activity, as described in **Section 3**), including details of the particular relevant values and sensitivities of the environment, which were used for the risk assessment.

The EMBA is the largest spatial extent where unplanned events could have an environmental consequence on the surrounding environment. For this EP, the EMBA is the combined potential spatial extent of surface and in-water hydrocarbons at concentrations above ecological impact thresholds, in the event of the following scenarios (**Section 6.8.3**):

- Scenario 1: A long-term (77-day) uncontrolled subsea release of 258,549 m³ of Vincent Crude from the Vincent Infill Well (VNBH4-ST2).
- Scenario 2: A short-term (16-hour) surface release of 40,828 m³ of NY Topsides Blend caused by a vessel collision with the FPSO.

The ecological impact thresholds used to delineate the EMBA are defined in **Table 4-1**. The EMBA also includes any areas that are predicted to experience shoreline contact with hydrocarbons above threshold concentrations. The EMBA is shown in **Figure 4-1**.

The EMBA presented does not represent the predicted coverage of any one hydrocarbon spill or a depiction of a slick or plume at any particular point in time. Rather, the areas are a composite of a large number of theoretical paths, integrated over the full duration of the simulations under various metocean conditions.

Table 4-1: Hydrocarbon spill thresholds used to define the environment that may be affected for surface and in-water hydrocarbons

Hydrocarbon Type	EMBA ¹	Socio-economic EMBA ¹	Planning Area for Scientific Monitoring
Surface	10 g/m ² This represents the minimum oil thickness (0.01 mm) at which ecological impacts (e.g. to birds and marine mammals) are expected to occur.	1 g/m ² This represents a wider area where a visible sheen may be present on the surface and, therefore, the concentration at which socio-economic impacts to the visual amenity of the marine environment may occur. However, it is below concentrations at which ecological impacts are expected to occur. This low exposure value also establishes the planning area for scientific monitoring (NOPSEMA guidance note: A652993, April 2019).	
Dissolved	50 ppb This represents potential toxic effects, particularly sublethal effects to highly sensitive species (NOPSEMA guidance note: A652993, April 2019). As dissolved hydrocarbons are within the water column and not visible, impacts to socio-economic receptors are associated with ecological impacts. Therefore, dissolved hydrocarbons at this threshold also represent the level at which socio-economic impacts may occur.		10 ppb This low exposure value establishes the planning area for scientific monitoring (based on potential for exceedance of water quality triggers) (NOPSEMA guidance note: A652993, April 2019). In the event of a spill, DNP will be notified of AMPs which may be contacted by hydrocarbons at this threshold.
Entrained	100 ppb This represents potential toxic effects, particularly sublethal effects to highly sensitive species (NOPSEMA guidance note: A652993, April 2019). As entrained hydrocarbons are within the water column and not visible, impacts to socio-economic receptors are associated with ecological impacts. Therefore, entrained hydrocarbons at this threshold also represent the level at which socio-economic impacts may occur.		
Shoreline	100 g/m ² This represents the threshold that could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat.	10 g/m ² This represents the volume where hydrocarbons may be visible on the shoreline but is below concentrations at which ecological impacts are expected to occur.	N/A

¹ Further details including the source of the thresholds used to define the EMBA in this table are provided in **Section 6.8.1**.

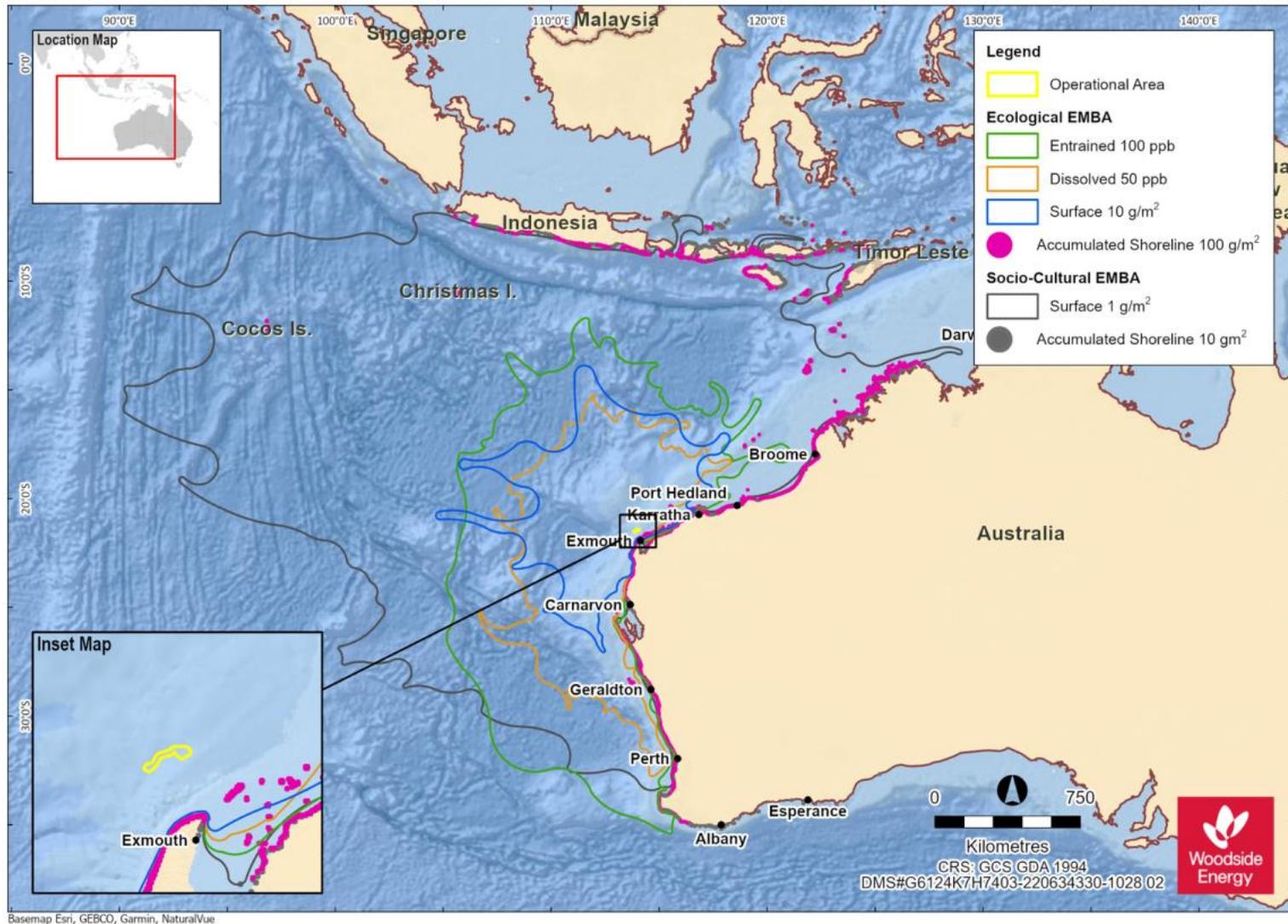


Figure 4-1: Environment that may be affected by the Petroleum Activities Program

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4.2 Regional Context

The Operational Area is located in Commonwealth waters within the North-west Marine Region (NWMR), as defined under the Integrated Marine and Coastal Regionalisation of Australia (IMCRA v4.0) (Commonwealth of Australia, 2006), in water depths ranging from 340 to 850 m. Within the NWMR, the Operational Area lies across the Northwest Province, Central Western Shelf Transition and the Northwest Shelf Province (**Figure 4-2**).

The combined EMBA further extends to the South-west Marine Region (SWMR) and marginally to the North Marine Region (NMR, shared Northwest Shelf Transition bioregion). Provincial Bioregions within the combined EMBA for the NMR, NWMR and SWMR include the:

- Northwest Shelf Transition (NMR and NWMR)
- Timor Province
- Northwest Shelf Province
- Christmas Island Province
- Cocos (Keeling) Island Province
- Northwest Transition
- Northwest Province
- Central Western Shelf Transition
- Central Western Transition
- Central Western Shelf Province
- Central Western Province
- Southwest Shelf Transition
- Southwest Transition
- Southwest Shelf Province
- Southern Province.

Woodside's Description of Existing Environment summarises the characteristics for the relevant marine bioregions.

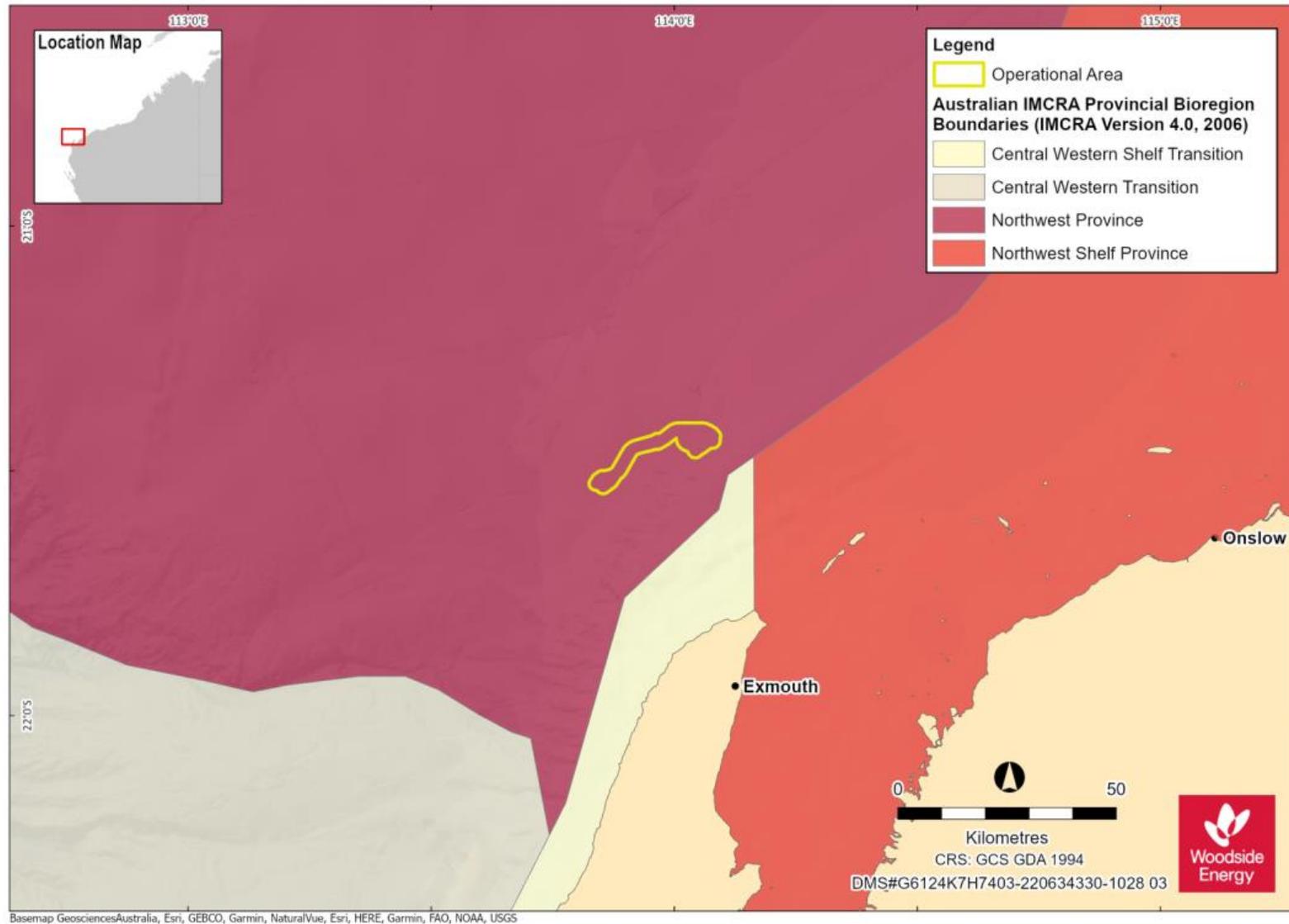


Figure 4-2: Location of the Operational Area and relevant marine provincial bioregions

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4.3 Matters of National Environmental Significance (Environment Protection and Biodiversity Conservation Act)

Table 4-2 summarises the Matters of National Environmental Significance (MNES) overlapping the Operational Area and EMBA, according to the Protected Matters Search Tool (PMST). It should be noted the EPBC Act PMST is a general database that conservatively identifies areas in which protected species have the potential to occur.

Table 4-2: Summary of matters of national environmental significance identified by the Environment Protection and Biodiversity Conservation Act Protected Matters Search Tool as potentially occurring within the Operational Area and environment that may be affected

MNES	Operational Area	EMBA	Relevant Section
World Heritage Properties	0	3	Section 4.10.5
National Heritage Places	0	10	Section 4.10.5
Wetlands of International Importance (Ramsar)	0	9	Section 4.10.5
Commonwealth Marine Area	1	21	Section 4.10.5
Listed Threatened Ecological Communities	0	7	Section 4.10.5
Listed Threatened Species	26	68	Section 4.6
Listed Migratory Species	41	111	Section 4.6

4.4 Physical Environment

The Operational Area lies on the continental shelf in waters approximately 340 to 820 m deep (**Figure 4-3**). The north-western part of the Operational Area consists of a relatively flat and featureless seabed. Within the southern part of the Operational Area lies a Key Ecological Feature (KEF), the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula is intersected. Part of this deep-water canyon system, the North and South Enfield Canyons are overlapped by the south-western portion of the Operational Area. Within the Operational Area, the Canyons exhibit relatively low topographic relief (20 to 30 m), with only isolated boulders observed (BMT Oceanica, 2016). A broader description of the KEF and its values is provided in **Section 4.7**.

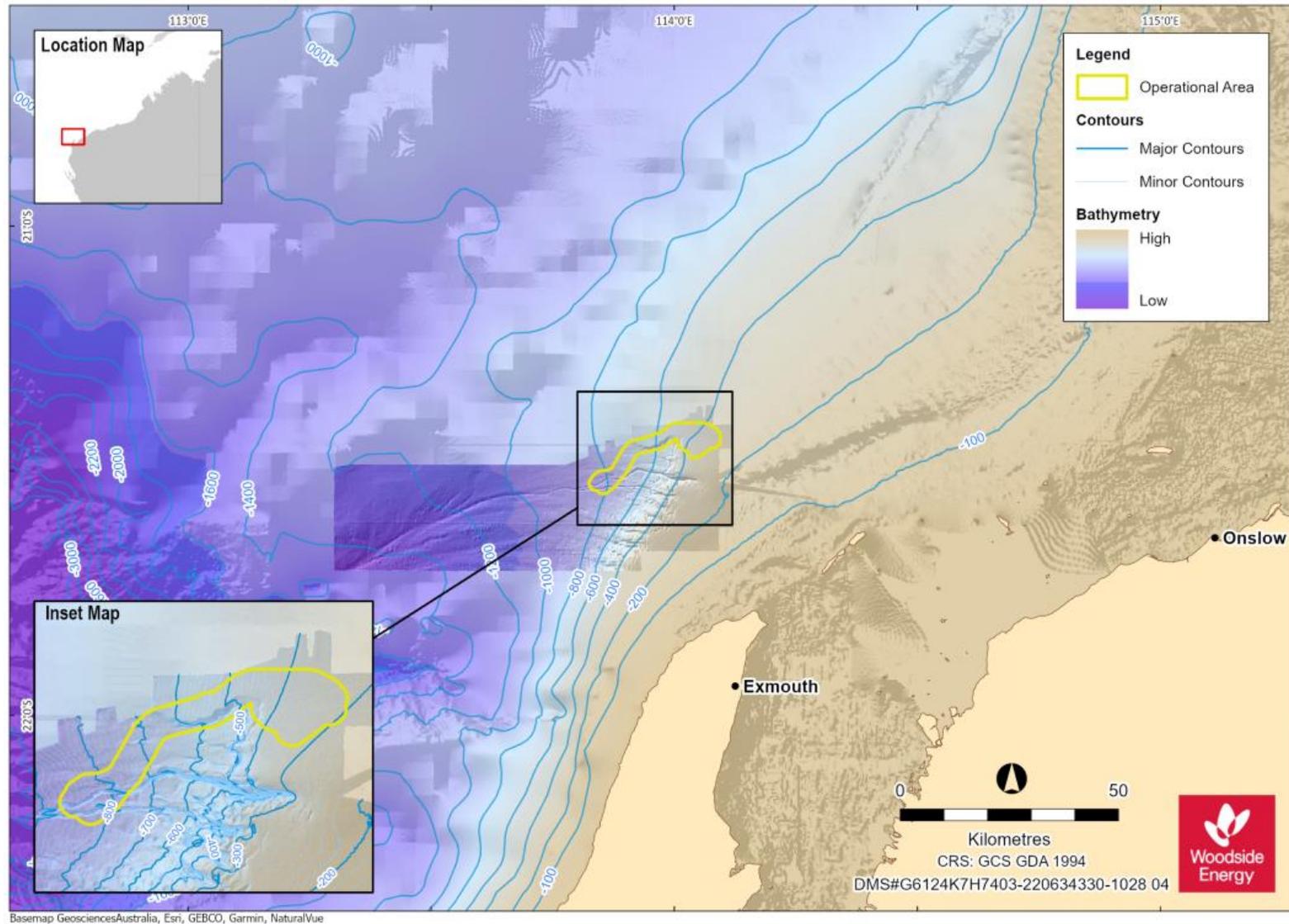


Figure 4-3: Bathymetry of the Operational Area

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4.5 Habitats and Biological Communities

Sediments in the north-western portion of the Operational Area are broadly consistent with those in the NWS Province, which are characterised by fine to medium sediment (silts and sands), with patches of coarser sediments (shells/gravels) (Woodside Energy Limited, 2005). Sediment investigations within the Enfield Canyon indicate that the upper slope habitat (200 to 500 m depth) is typically composed of coarser and more consolidated sediments as compared to the mid-slope (500 to 1000 m) (BMT Oceanica, 2016).

While hard substrates are known to occur within the Operational Area, specifically as isolated boulders within the Enfield Canyon, all were found to be featureless (BMT Oceanica, 2016). However, within the region hard substrates occur more broadly and can host more diverse benthic communities. Hard substrate may also be associated with the Ancient Coastline at 125 m Depth Contour KEF (**Section 4.7**), which is located within the EMBA.

Key habitats and ecological communities within the EMBA are identified in **Table 4-3**.

Table 4-3: Habitats and communities within the environment that may be affected

Habitat/Community	Key Locations Within the EMBA
<i>Marine primary producers</i>	
Coral	<ul style="list-style-type: none"> • Ningaloo Coast (8.6 km south-east) • Muiron Islands (16 km south-east) • Barrow Island (136 km north-east) • Montebello Islands (177 km north-east) • Shark Bay (315 km south-west) • Rowley Shoals (640 km north-east) • Houtman Abrolhos islands (721 km south-west) • Rottneest Island (1,158 km south-east) • Christmas Island (1,510 km north-west)

Habitat/Community	Key Locations Within the EMBA
Seagrass beds and macroalgae	<ul style="list-style-type: none"> • Ningaloo Coast (8.6 km south-east) • Muiron Islands (16 km south-east) • Exmouth Gulf (55 km south-east) • Barrow Island (136 km north-east) • Montebello Islands (177 km north-east) • Shark Bay (315 km south-west) • Jurien Bay (943 km south-west) • Busselton (1316 km south)
Mangroves	<ul style="list-style-type: none"> • Ningaloo Coast (8.6 km south-east) • Exmouth Gulf (55 km south-east) • Montebello Islands (177 km north-east) • Dampier (306 km north-east) • Carnarvon (319 km south) • Port Hedland (492 km north-east) • Broome (947 km north-east)
Other communities and habitats	
Plankton	<p>Plankton within the Operational Area and EMBA are expected to be representative of the wider NWMR.</p> <p>Peak primary productivity within the EMBA occurs in late summer/early autumn, along the shelf edge of the Ningaloo Reef. It also links to a larger biologically productive period in the area that includes mass coral spawning events, peaks in zooplankton and fish larvae abundance (CALM, 2005a), with periodic upwelling throughout the year. Further detail regarding productivity at other notable locations within the EMBA (e.g. North West Cape) is provided.</p>

Habitat/Community	Key Locations Within the EMBA
Pelagic and demersal fish populations	<p>Pelagic and demersal fish populations within the Operational Area and EMBA are expected to be representative of the NWMR).</p> <p>Particular features within the EMBA that are known to support pelagic and demersal fish populations include the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula (overlapping the Operational Area), the Continental Slope Demersal Fish Communities KEF (overlapping the Operational Area), the Ancient Coastline at 125 m Depth Contour KEF, Commonwealth Waters Adjacent to Ningaloo Reef, Western Demersal Slope and Associated Fish Communities, Glomar Shoals, Mermaid Reef and Commonwealth waters surrounding Rowley Shoals, etc.</p> <p>Notably, the presence of subsea infrastructure associated with the NY facilities has resulted in the development of demersal fish communities that would otherwise not occur in the Operational Area due to the generally featureless, soft substrate that is present (McLean et al., 2017).</p>
Epifauna and infauna	<p>Filter feeders such as sponges, ascidians, soft corals, and gorgonians are animals that feed by actively filtering suspended matter and food particles from water by passing the water over specialised filtration structures (DEWHA, 2008). Filter feeders within the EMBA are expected to be representative of the NWMR, with notable areas of high sponge diversity occurring in the Commonwealth waters of Ningaloo Marine Park.</p> <p>Discrete areas of hard substrate hosting sessile filter feeding communities may also be associated within the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF, which overlaps the Operational Area.</p> <p>Several surveys of benthic filter feeder communities have been undertaken within the Operational Area. Isolated areas of hard substrate within the Enfield Canyon were sampled and found to be characterised by featureless isolated boulders with no different biota observed compared to the other surveyed areas of the canyon (BMT Oceanica, 2016). Results are consistent with previous surveys within the region which found species composition to have no observable differences between assemblages within and beyond the canyon (Heyward et al., 2001b)</p> <p>Filter feeder communities within the Operational Area are present on the subsea infrastructure within the development, which provides hard substrate for attachment in an otherwise generally featureless, soft and sandy substrate.</p>

4.6 Protected Species

A total of 143 EPBC Act listed species considered to be MNES were identified as potentially occurring within the EMBA, of which a subset of 48 species were identified as potentially occurring within the Operational Area. These results inform the assessment of impacts from planned and unplanned events (**Section 6.6 to 6.8**). It should be recognised that the PMST is a general database that conservatively identifies areas in which protected species have the potential to occur.

Biologically important areas (BIAs) are defined by the Marine Bioregional Plan for the North-west Marine Region as areas of spatial aggregation of individuals within a species known to demonstrate biologically important behaviour (DCCEEW, 2023). Examples of such behaviours include breeding, foraging, resting or migration.

Threatened and/or Migratory species identified as potentially occurring within the Operational Area and EMBA, and BIAs or Habitat Critical to their Survival (Habitat Critical) that overlap the Operational Area and EMBA, are listed in **Table 4-4** to **Table 4-12**.

Figure 4-4 to **Figure 4-9** show the spatial overlap of the Operational Area with relevant BIAs and Habitat Critical areas.

4.6.1 Fish, Sharks and Rays

A total of 14 EPBC-listed Threatened and Migratory fish, shark and ray species have been identified to potentially occur within the Operational Area. An additional 11 EPBC-listed Threatened and Migratory fish, shark and ray species within the wider EMBA (**Table 4-4**).

A foraging BIA for the Whale Shark overlaps the Operational Area as shown in **Figure 4-4** and described in **Table 4-6**.

An additional four species of fish, shark and ray have BIAs within the wider EMBA (**Table 4-6**).

Table 4-4: Threatened and Migratory fish, shark and ray species predicted to occur within the Operational Area and environment that may be affected

Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Carcharodon carcharias</i>	White shark	Vulnerable	Migratory	Species or species habitat known occur within area	Species or species habitat likely to occur within area
<i>Pristis clavata</i>	Dwarf sawfish	Vulnerable	Migratory	Species or species habitat known to occur within area	Breeding known to occur within area
<i>Pristis pristis</i>	River sawfish	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Pristis zijsron</i>	Green sawfish	Vulnerable	Migratory	Species or species habitat known to occur within area	Breeding known to occur within area
<i>Rhincodon typus</i>	Whale shark	Vulnerable	Migratory	Foraging, feeding or related behaviour known to occur within area	Foraging, feeding or related behaviour known to occur within area
<i>Carcharias taurus</i> (west coast population)	Grey nurse shark (west coast population)	Vulnerable	N/A	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Sphyrna lewini</i>	Scalloped hammerhead	Conservation Dependent	N/A	Species or species habitat likely occur within area	Species or species habitat may occur within area
<i>Thunnus maccoyii</i>	Southern bluefin tuna	Conservation Dependent	N/A	Species or species habitat likely to occur within area	Breeding known to occur within area
<i>Anoxypristis cuspidata</i>	Narrow sawfish	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Isurus oxyrinchus</i>	Shortfin mako	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Isurus paucus</i>	Longfin mako	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
<i>Manta birostris</i>	Giant manta ray	N/A	Migratory	Species or species habitat known to occur within area	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Mobula alfredi</i>	Reef manta ray	N/A	Migratory	Species or species habitat known to occur within area	Species or species habitat known to occur within area
<i>Galaxias truttaceus</i> (Western Australian population)	Western trout minnow	Endangered	N/A	N/A	Species or species habitat known to occur within area
<i>Galaxiella nigrostriatal</i>	Blackstriped dwarf galaxias	Endangered	N/A	N/A	Species or species habitat known to occur within area
<i>Glyphis garricki</i>	Northern river shark	Endangered	N/A	N/A	Breeding likely to occur within area
<i>Milyeringa veritas</i>	Cape range cave gudgeon	Vulnerable	N/A	N/A	Species or species habitat known to occur within area
<i>Nannatherina balstoni</i>	Balston's pygmy perch	Vulnerable	N/A	N/A	Species or species habitat known to occur within area
<i>Ophisternon candidum</i>	Blind cave eel	Vulnerable	N/A	N/A	Species or species habitat known to occur within area
<i>Centrophorus uyato</i>	Little gulper shark	Conservation Dependent	N/A	N/A	Species or species habitat likely to occur within area
<i>Galeorhinus galeus</i>	School shark	Conservation Dependent	N/A	N/A	Species or species habitat may occur within area
<i>Hoplostethus atlanticus</i>	Orange roughy	Conservation Dependent	N/A	N/A	Species or species habitat likely to occur within area
<i>Seriolella brama</i>	Blue warehou	Conservation Dependent	N/A	N/A	Species or species habitat likely to occur within area
<i>Lamna nasus</i>	Porbeagle shark	N/A	Migratory	N/A	Species or species habitat likely to occur within area

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Table 4-5: Fish, shark and ray biologically important areas within the Operational Area and environment that may be affected

Species	BIAs ¹			
	Foraging	Migration	Pupping	Nursing
Whale shark	Northward from Ningaloo along 200 m isobath (Overlaps) Ningaloo Marine Park and adjacent Commonwealth waters (high-density prey)	No Migration BIA identified within the EMBA	No Pupping BIA identified within the EMBA	No Nursing BIA identified within the EMBA
White shark	Waters off pinniped colonies throughout the South-west Marine Region (756 km south-west) Waters off Bremer Bay	No Migration BIA identified within the EMBA	No Pupping BIA identified within the EMBA	N/A
Dwarf sawfish	Camden Sound – eastern shore (608 km north-east) Eighty-mile Beach	No Migration BIA identified within the EMBA	Roebuck Bay (608 km north-east)	Roebuck Bay (608 km north-east)
Green sawfish	Cape Keraudren (601 km north-east) Roebuck Bay Camden Sound	No Migration BIA identified within the EMBA	Cape Keraudren (601 km north-east) Eighty-mile Beach Roebuck Bay Willie Creek	Cape Keraudren (601 km north-east) Eighty-mile Beach
Freshwater sawfish	Eighty-mile Beach (608 km north-east) Roebuck Bay	No Migration BIA identified within the EMBA	Eighty-mile Beach (608 km north-east) Roebuck Bay	No Nursing BIA identified within the EMBA

1. Information regarding the BIAs within the EMBA are described in **Section 4.6** and BIA locations are described in the *National Conservation Values Atlas*.

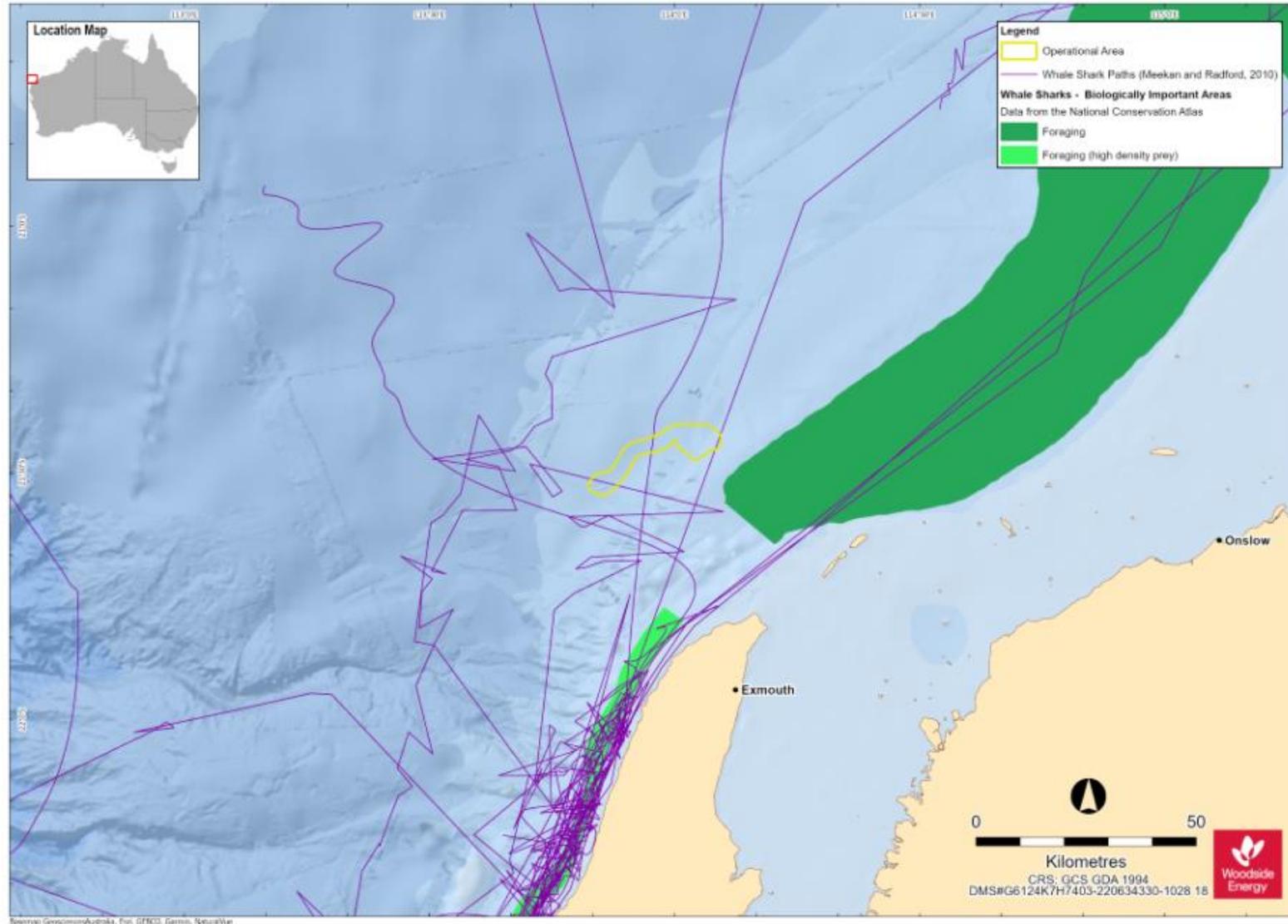


Figure 4-4: Whale shark biologically important areas and satellite tracks of whale sharks tagged between 2005 and 2008 (Double et al., 2012, 2014)

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4.6.2 Marine Reptiles

A total of six EPBC-listed Threatened and Migratory marine reptile species have been identified to potentially occur within the Operational Area and an additional three occurring in the wider EMBA (**Table 4-6**).

BIAs for the flatback turtle, green turtle, hawksbill turtle and loggerhead turtle overlap the Operational Area, as described in **Table 4-7** and shown in **Figure 4-5**.

Habitat critical to the survival of the Green Turtle, Loggerhead Turtle, Leatherback Turtle and the Hawksbill Turtle is overlapped by, or adjacent to the Operational Area as shown in **Figure 4-6** and described in **Table 4-8**.

An additional 24 listed Marine species occur in the EMBA, which do not have Threatened or Migratory status. The majority of these are sea snake species.

Table 4-6: Threatened and Migratory marine reptile species predicted to occur within the Operational Area and environment that may be affected

Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Aipysurus apraefrontalis</i>	Short-nosed seasnake	Critically Endangered	NA	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Caretta caretta</i>	Loggerhead turtle	Endangered	Migratory	Congregation or aggregation known to occur within area	Species or species habitat likely to occur within area
<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered	Migratory	Species or species habitat known to occur within area	Species or species habitat likely to occur within area
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Migratory	Species or species habitat known to occur within area	Species or species habitat likely to occur within area
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable	Migratory	Congregation or aggregation known to occur within area	Species or species habitat likely to occur within area
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory	Congregation or aggregation known to occur within area	Species or species habitat likely to occur within area
<i>Aipysurus foliosquama</i>	Leaf-scaled seasnake	Critically Endangered	N/A	N/A	Species or species habitat known to occur within area
<i>Lepidochelys olivacea</i>	Olive ridley turtle	Endangered	Migratory	N/A	Congregation or aggregation known to occur within area
<i>Crocodylus porosus</i>	Salt-water crocodile	N/A	Migratory	N/A	Species or species habitat likely to occur within area

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Table 4-7: Marine turtle biologically important areas within the environment that may be affected

Species	BIAs ¹							
	<i>Mating</i>	<i>Nesting</i>	<i>Internesting</i>	<i>Internesting Buffer</i>	<i>Foraging</i>	<i>Aggregation</i>	<i>Migration</i>	<i>Basking</i>
Flatback turtle	Barrow Island (131 km north-east) Coral reef habitat west of the Montebello Island group Dampier Archipelago	Thevenard Island (46 km north-east) Barrow Island Montebello Island Dampier Archipelago (islands to the west of the Burrup Peninsula) Dixon Island Delambre Island Cape Thouin/ Mundabullangana/Cowrie Beach Intercourse Island Lacepede Island West of Cape Lambert Port Hedland, Cemetery Beach Port Hedland, Paradise Beach Port Hedland, Pretty Pool Legendre Island and Huay Island Montebello Island – Hermite Island, NW Island, Trimouille Island North Turtle Island Thevenard Island - South coast	Thevenard Island - South coast (Overlaps) Coral reef habitat west of the Montebello Island group Dampier Archipelago (islands to the west of the Burrup Peninsula) Lacepede Island	Montebello Island – Hermite Island, NW Island, Trimouille Island (99 km north-east) Dampier Archipelago (islands to the west of the Burrup Peninsula) Intercourse Island Legendre Island and Huay Island Delambre Island Dixon Island West of Cape Lambert Cape Thouin/Mundabullangana/ Cowrie Beach North Turtle Island Port Hedland, Cemetery Beach Port Hedland, Paradise Beach Port Hedland, Pretty Pool Eighty-mile Beach Lacepede Island	String of islands between Cape Preston and Onslow, inshore of Barrow Island (115 km north-east) Barrow Island Coral reef habitat west of the Montebello Island group. Extends the entire length of Montebellos Montebello Island – Hermite Island, NW Island, Trimouille Island Dampier Archipelago (islands to the west of the Burrup Peninsula) Delambre Island Legendre Island and Huay Island De Grey River area to Bedout Island James Price Point Western Joseph Bonaparte Depression	Coral reef habitat west of the Montebello Island group; extends the entire length of Montebellos (167 km north-east)	Corridor – Dampier Archipelago (islands to the west of the Burrup Peninsula) (256 km north-east)	No Basking BIA identified within the EMBA

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Species	BIAs ¹							
	Mating	Nesting	Internesting	Internesting Buffer	Foraging	Aggregation	Migration	Basking
Green turtle	Middle Island, West Coast Barrow Island, West Coast and North Coast (130 km north-east) Montebello Islands Montebello Island – Hermite Island, NW Island, Trimouille Island Coral reef habitat west of the Montebello island group Dampier Archipelago (islands west of Burrup Peninsula) Ashmore Reef	North and South Muiron Island (15 km south-east) North West Cape Middle Island, West Coast Barrow Island, West Coast and North Coast Montebello Islands Montebello Island - Hermite Island, NW Island, Trimouille Island Dampier Archipelago (islands to the west of the Burrup Peninsula) Legendre Island and Huay Island Delambre Island Lacepede Island Scott Reef – Sandy Islet Cassini Island Cartier Island Scott Reef	Barrow Island (131 km north-east) Coral reef habitat west of the Montebello Island group Montebello Islands Dampier Archipelago (islands to the west of the Burrup Peninsula) Lacepede Island Scott Reef	North West Cape (overlaps) North and South Muiron Island (Overlaps) Middle Island, West Coast Barrow Island, West Coast and North Coast Montebello Islands Montebello Island – Hermite Island, NW Island, Trimouille Island Dampier Archipelago (islands west of Burrup Peninsula) Legendre Island and Huay Island Delambre Island Lacepede Island Scott Reef – Sandy Islet Cartier Island Cassini Island Ashmore Reef Scott Reef	String of islands between Cape Preston and Onslow, inshore of Barrow Island (115 km north-east) Inshore tidal and shallow subtidal areas around Barrow Island Coral reef habitat west of the Montebello Island group Montebello Islands Montebello Island – Hermite Island, NW Island, Trimouille Island Dampier Archipelago (islands west of Burrup Peninsula) Dixon Island Legendre Island and Huay Island Delambre Island North Turtle Island Joseph Bonaparte Gulf De Grey River area to Bedout Island James Price Point Seringapatam Reef	Between Middle and North Mangrove Island - big shallow intertidal flats (116 km north-east) Coral reef habitat west of the Montebello Island group	Corridor - Dampier Archipelago (islands to the west of the Burrup Peninsula) (256 km north-east)	Middle Island (130 km north-east) West Coast Barrow Island West Coast North Coast

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Species	BIAs ¹							
	Mating	Nesting	Internesting	Internesting Buffer	Foraging	Aggregation	Migration	Basking
					Montgomery Reef Browse Island Ashmore Reef			
Hawksbill turtle	Barrow Island (131 km north-east) Lowendal Island Group Montebello Island – Hermite Island, NW Island, Trimouille Island Dampier Archipelago (islands west of Burrup Peninsula)	Ningaloo coasts and Jurabi coast (19 km south-west) Thevenard Island Barrow Island Lowendal Island Group Varanus Island Montebello Island – Hermite Island, NW Island, Trimouille Island Ah Chong and South East Island Dampier Archipelago – islands west of Burrup Peninsula Rosemary Island Delambre Island Scott Reef	Lowendal Island Group (167km north-east) Dampier Archipelago – islands west of Burrup Peninsular	Ningaloo coast and Jurabi coast (overlaps) Thevenard Island Barrow Island Lowendal Island Group Varanus Island Montebello Island – Hermite Island, NW Island, Trimouille Island A Chong and South East Island Dampier Island Rosemary Island Scott Reef Ashmore Reef	String of islands between Cape Preston and Onslow (115 km north-east) Inshore tidal and shallow subtidal areas around Barrow Island Lowendal Island Group Montebello Island – Hermite Island, NW Island, Trimouille Island Dampier Archipelago – islands west of Burrup Peninsula Dixon Island Delambre Island De Grey River area to Bedout Island Ashmore Reef Carrier Island	No Aggregation BIA identified within the EMBA	Corridor – Dampier Archipelago – Islands to the west of the Burrup Peninsula (256 km north-east)	No Basking BIA identified within the EMBA

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Species	BIAs ¹							
	Mating	Nesting	Internesting	Internesting Buffer	Foraging	Aggregation	Migration	Basking
Loggerhead turtle	No Mating BIA identified within the EMBA	Muiron Island (14 km south-east) Ningaloo coast and Jurabi coast Lowendal Island Montebello Islands Rosemary Island Cohen Island Dirk Hartog Island	Dirk Hartog Island (442 km south)	Ningaloo coast and Jurabi coast (overlaps) Muiron Island (overlaps) Lowendal Island Montebello Islands Gnarloo Bay Rosemary Island Cohen Island Dirk Hartog Island	De Grey River area to Bedout Island (498 km north-east) Western Joseph Bonaparte Depression	No Aggregation BIA identified within the EMBA	No Migration BIA identified within the EMBA	No Basking BIA identified within the EMBA
Olive ridley turtle	No Mating BIA identified within the EMBA	No Nesting BIA identified within the EMBA	No Internesting BIA identified within the EMBA	No Internesting Buffer identified within the EMBA	Western Joseph Bonaparte Gulf – banks (1,664 km north-east) Joseph Bonaparte Gulf – banks Western Joseph Bonaparte Depression	No Aggregation BIA identified within the EMBA	No migration BIA identified within the EMBA	No Basking identified within the EMBA

1. Information regarding the BIAs within the EMBA are described in **Section 4.6** and BIA locations are described in the National Conservation Values Atlas.

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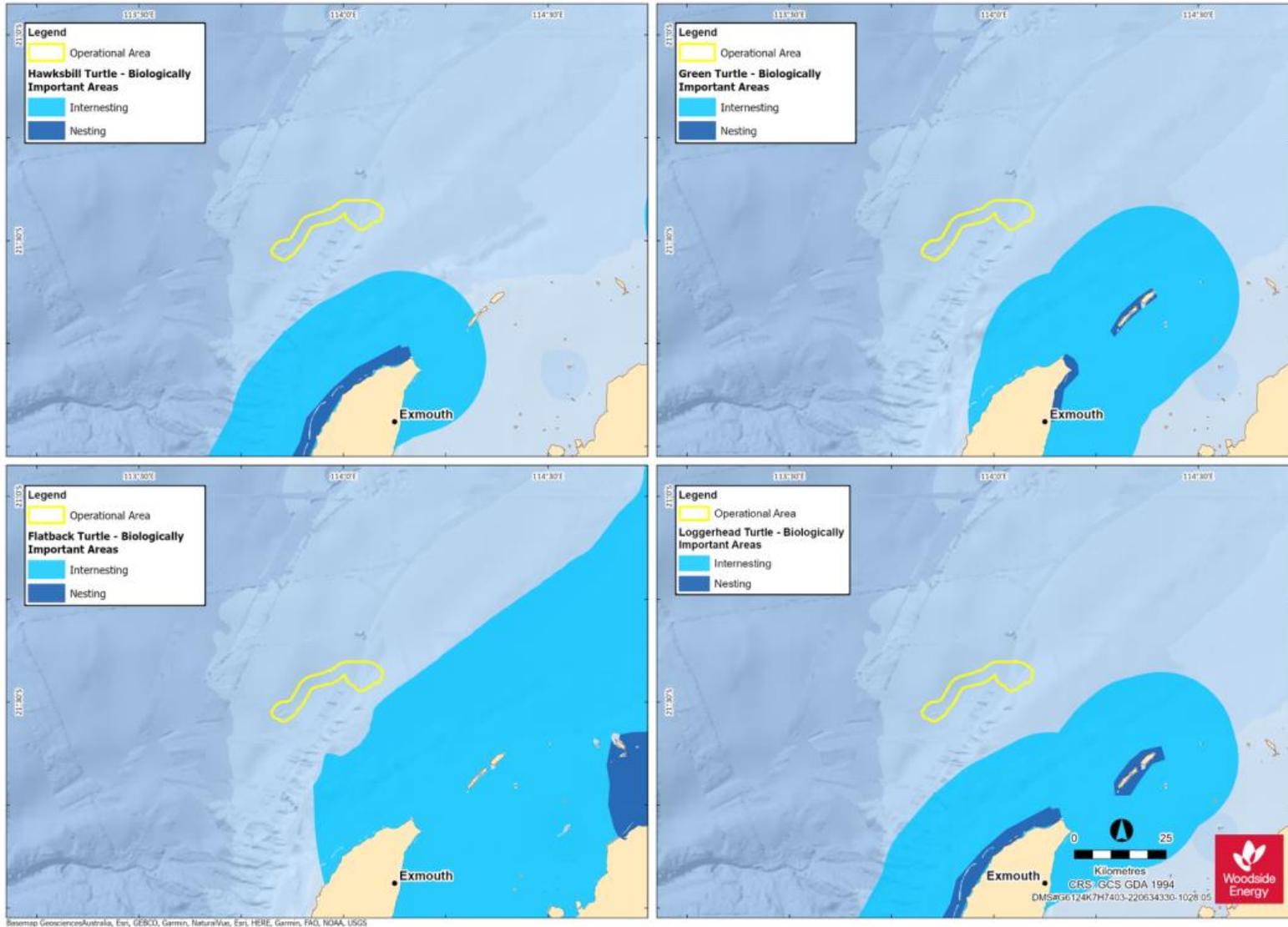
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Figure 4-5: Marine turtle biologically important areas overlapping and adjacent to the Operational Area

Table 4-8: Habitat critical to the survival of marine turtle species occurring within the environment that may be affected

Species	Genetic Stock	Nesting Locations	Approximate Distance and Direction from Operational Area (km)	Inter-nesting Buffer	Nesting Period	Hatching Period
Green turtle	NWS	Exmouth Gulf and Ningaloo coast	2.1 km south-west	20 km	Nov–Mar (peak: Dec–Feb)	Jan–May (peak: Feb–Mar)
		Barrow Island, Montebello Islands, Serrier Island and Thevenard Island	10.9 km north-east			
		Dampier Archipelago	231.9 km north-east			
		Adele Island, Lacepede Islands	958.6 km north-east			
		Scott Reef	1119.7 km north-east			
		Ashmore Reef and Cartier Reef	1384.4 km north-east			
		Mainland east of Mary Island to mainland adjacent to Murrara Island including all offshore islands	1356 km north-east			
		Browse Island	1257.6 km north-east			
Loggerhead turtle	NWS	Exmouth Gulf and Ningaloo coast	2.1 km south-west	20 km	Nov–May (peak: Jan)	Jan–May
		Gnaraloo Bay and beaches	212.2 km south-west			
		Shark Bay, all coastal and island beaches out to the northern tip of Dirk Hartog Island	421.9 km south-west			
Flatback turtle	NWS	Barrow Island, Montebello Islands, coastal islands from Cape Preston to Locker Island	Overlaps	60 km	Oct–Mar (peak: Nov–Jan)	Feb–Mar
		Dampier Archipelago, including Delambre Island and Hauy Island	192.1 km north-east			
		Mundabullangana Beach	347.8 km north-east			
		Cemetery Beach, Port Hedland	423.9 km north-east			
		Lacepede Islands	918.5 km north-east			
		Eighty-mile Beach – coastal beach	550.9 km north-east			
		Eco Beach – coastal beach near Broome	837.9 km north-east			
	July					

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Species	Genetic Stock	Nesting Locations	Approximate Distance and Direction from Operational Area (km)	Inter-nesting Buffer	Nesting Period	Hatching Period
Hawksbill turtle	NWS	Cape Preston to mouth of Exmouth Gulf including Montebello Islands and Lowendal Islands	10.9 km south-east	20 km	All year (peak: Oct–Jan)	All year (peak: Dec–Feb)
		Dampier Archipelago, including Delambre Island and Rosemary Island	231.9 km north-east			
Olive ridley turtle	NWS	Cape Leveque	1062 km north-east	20 km	Mar-Oct (peak: Aug)	May-Dec
		Prior Point and Llanggi	1235.3 km north-east			
		Darcy Island	1257.1 km north-east			
		Vulcan Island	1263.2 km north-east			

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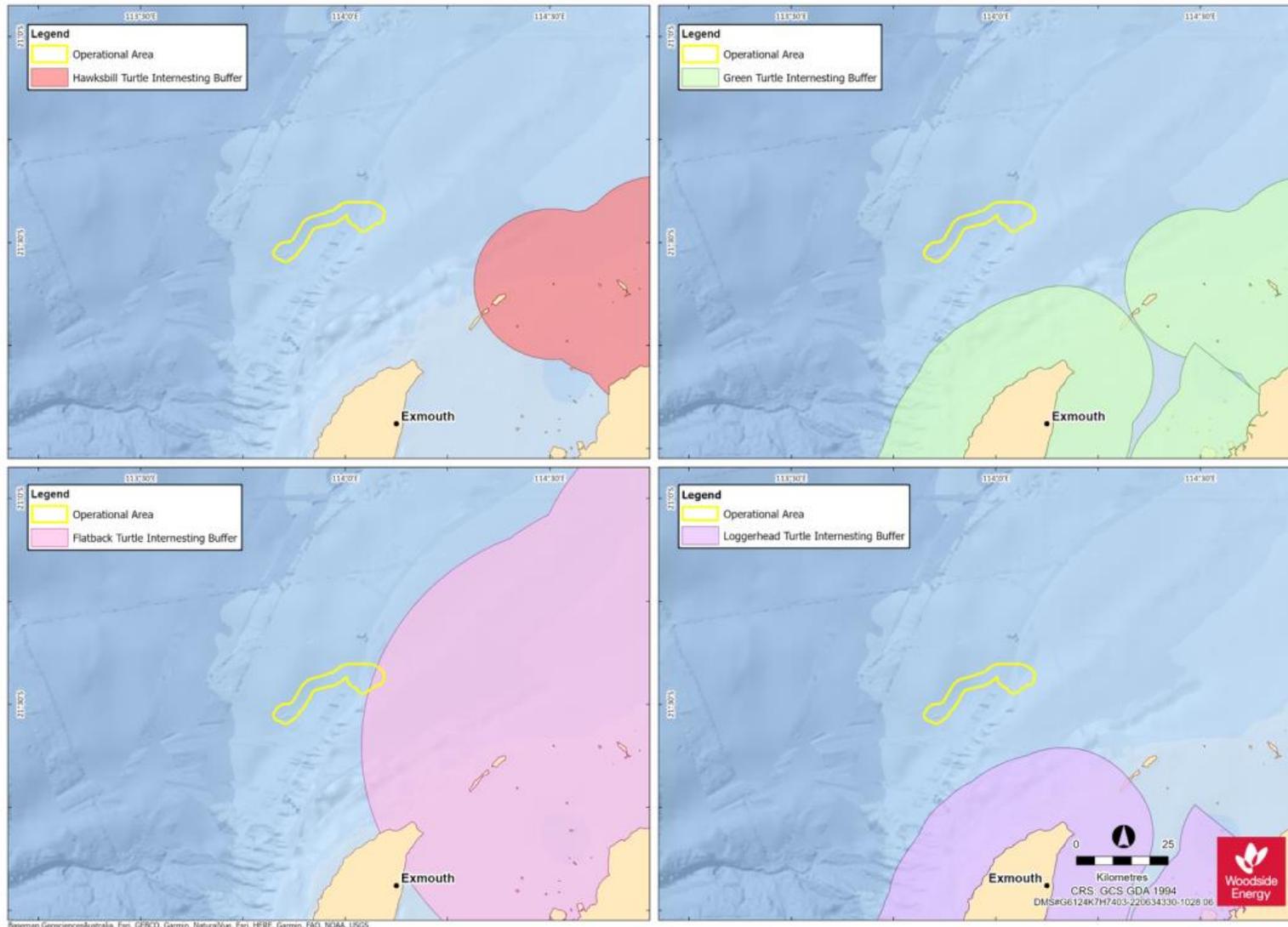


Figure 4-6: Habitat critical to the survival of marine turtles overlapping and adjacent to the Operational Area

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4.6.3 Marine Mammals

A total of 12 EPBC-listed Threatened and Migratory marine mammal species have been identified to potentially occur within the Operational Area, and an additional 5 occur in the broader EMBA (**Table 4-9**).

The Pygmy Blue Whale BIA (migration) overlap the Operational Area (**Figure 4-7**), as does the Humpback Whale migration BIA (**Figure 4-8**). A number of other marine mammal BIAs occur throughout the EMBA, which are listed in **Table 4-10**.

Table 4-9: Threatened and Migratory marine mammal species predicted to occur within the Operational Area and environment that may be affected

Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Balaenoptera musculus</i>	Blue whale	Endangered	Migratory	Migration route known to occur within area.	Migration route known to occur within area
<i>Eubalaena australis</i>	Southern right whale	Endangered	Migratory	Species or species habitat likely to occur within area.	Breeding known to occur within area
<i>Balaenoptera borealis</i>	Sei whale	Vulnerable	Migratory	Species or species habitat likely to occur within area.	Species or species habitat likely to occur within area
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	Migratory	Species or species habitat likely to occur within area.	Species or species habitat likely to occur within area
<i>Balaenoptera edeni</i>	Bryde's whale	N/A	Migratory	Species or species habitat likely occur within area.	Species or species habitat likely to occur within area
<i>Balaenoptera bonaerensis</i>	Antarctic minke whale	N/A	Migratory	Species or species habitat likely occur within area.	Species or species habitat likely to occur within area
<i>Megaptera novaeangliae</i>	Humpback whale	N/A	Migratory	Breeding known to occur within area.	Breeding known to occur within area
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	N/A	Migratory	Species or species habitat may occur within area.	Breeding known to occur within area
<i>Orcinus orca</i>	Killer whale	N/A	Migratory	Species or species habitat may occur within area.	Species or species habitat may occur within area
<i>Physeter macrocephalus</i>	Sperm whale	N/A	Migratory	Species or species habitat may occur within area.	Foraging, feeding or related behaviour known to occur within area
<i>Sousa sahulensis</i>	Australian humpback dolphin	N/A	Migratory	Species or species habitat may occur within area.	Breeding known to occur within area
<i>Tursiops aduncus</i> (Arafura/Timor Sea populations)	Spotted bottlenose dolphin	N/A	Migratory	Species or species habitat known to occur within area.	Species or species habitat known to occur within area
<i>Neophoca cinerea</i>	Australian sea-lion	Endangered	N/A	Species or species habitat known to occur within area.	Species or species habitat known to occur within area
<i>Xeromys myoides</i>	Water mouse, false water rat, yirrkoo	Vulnerable	N/A	Species or species habitat known to occur within area.	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Caperea marginata</i>	Pygmy right whale	N/A	Migratory	Species or species habitat known to occur within area.	Species or species habitat known to occur within area
<i>Dugong dugon</i>	Dugong	N/A	Migratory	Species or species habitat known to occur within area.	Species or species habitat known to occur within area
<i>Lagenorhynchus obscurus</i>	Dusky dolphin	N/A	Migratory	Species or species habitat known to occur within area.	Species or species habitat known to occur within area

Table 4-10: Marine mammal biologically important areas within the environment that may be affected

Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Cetaceans							
Blue whale (subspecies pygmy blue whale)	No Resting BIA identified within the EMBA	Ningaloo (17 km south-west) South-west Scott Reef Outer continental shelf from Cape Naturaliste to south of Jurien Bay (on migration) Outer Perth Canyon (abundant food source) Perth Canyon (annual high use area) Head of Perth Canyon (high density)	No Reproduction/ Breeding BIA identified within the EMBA	Augusta to Derby. Tend to pass along the shelf edge at depths 500 m to 1000 m; appear close to coast in the Exmouth-Montebello Islands area on southern migration (overlaps) Mandurah to south of Cape Naturaliste, seaward to the 50 m depth contour Indonesia-Banda Sea	No Calving BIA identified within the EMBA	No Nursing BIA identified within the EMBA	No Distribution/ Significant Habitat BIA identified within the EMBA
Humpback whale	Exmouth Gulf (23 km south-east) Shark Bay	No Foraging BIA identified within the EMBA	No Reproduction/ Breeding BIA identified within the EMBA	Corridor extends from the coast out to approximately 100 km offshore in the Kimberley region extending south to	Kimberley/Coastal North Lacepede Island, Camden Sound (982 km north-east)	Kimberley/Coastal North Lacepede Island, Camden Sound (982 km north-east)	No Distribution/ Significant Habitat BIA identified within the EMBA

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Kimberley/ Coastal North Lacepede Island, Camden Sound				North-west Cape (Overlaps) (north and south) West coast – Lancelin to Kalbarri (north and south) North of Houtman Abrolhos Houtman Abrolhos Islands (north and south) Cape Leeuwin to Houtman Abrolhos (north) Kimberley/Coastal North Lacepede Island, Camden Sound West coast – Bunbury to Lancelin including Rottnest Island (north and south) Cape Naturaliste (north and south) Geographe Bay (south) Cape Naturaliste to Cape Leeuwin (north and south) Flinders Bay (north) Esperance to Cape Leeuwin (north)			

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Southern right whale	No Resting BIA identified within the EMBA	No Foraging BIA identified within the EMBA	Exmouth Gulf (22 km south-east) (approx. May to September)	From the West Australian and South Australian border to Exmouth (19) (Approx. April to October)	No Calving BIA identified within the EMBA	No Nursing BIA identified within the EMBA	No Distribution/ Significant Habitat BIA identified within the EMBA
Sperm whale	No Resting BIA identified within the EMBA	Western end of Perth canyon (1121 km south-east) (abundant food south) Albany Canyons – south of the continental shelf edge extending over the continental slope, to include the area of the ‘Albany Canyons’ (abundant food source)	No Reproduction/ Breeding BIA identified within the EMBA	No Migration BIA identified within the EMBA	No Calving BIA identified within the EMBA	No Nursing BIA identified within the EMBA	No Distribution/ Significant Habitat BIA identified within the EMBA
Australian snubfin dolphin	Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay) (1223 km north-east) Port Nelson, York Sound, and Prince Fedrick Harbour Admiralty Gulf and Parry Harbour	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) (high density prey) Willie Creek – tidal mangrove creeks (high density prey) Carnot and Beagle Bay (foraging likely) King Sound – Southern Sector (high density prey)	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) King Sound – Southern Sector Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay) Prince Regent River	No Migration BIAs identified within the EMBA	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) Willie Creek – tidal mangrove creeks King Sound – Southern Sector King Sound – North and Yampi Sound and Talbot Bay Fjord area	No Nursing BIA identified within the MEBA	No Distribution/ Significant Habitat BIA identified within the EMBA

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
	Bougainville Peninsula Vansittart Bay and Anjo Peninsula Napier Broome Bay/Deep Bay Cape Londonderry and King George River	King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls (high density prey) Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay) (high density prey) Prince Regent River (high density prey) Port Nelson, York Sound, and Prince Fedrick Harbour (high density prey) Maret and Biggee Island Admiralty Gulf and Parry Harbour (high density prey) Bougainville Peninsula (high density prey) Vansittart Bay and Anjo Peninsula (high density prey) Napier Broom Bay/Deep Bay (high density prey) Cape Londonderry and King George River (high density prey)	Port Nelson, York Sound, and Prince Fedrick Harbour Admiralty Gulf and Parry Harbour Bougainville Peninsula Vansittart Bay and Anjo Peninsula Napier Broome Bay/Deep Bay Cape Londonderry and King George River		near horizontal falls Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay) Prince Regent River Port Nelson, York Sound, and Prince Fedrick Harbour Admiralty Gulf and Parry Harbour Bougainville Peninsula Vansittart Bay and Anjo Peninsula Napier Broome Bay/Deep Bay Cape Londonderry and King George River		

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Indo-Pacific humpback dolphin	No Resting BIA identified within the EMBA	<p>Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) (high abundant prey)</p> <p>Willie Creek – tidal mangrove creeks (high abundant prey)</p> <p>Carnot and Beagle Bay Pender Bay</p> <p>King Sound – Southern Sector (high abundant prey)</p> <p>King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls (high abundant prey)</p> <p>Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay) (high abundant prey)</p> <p>Prince Regent River (high abundant prey)</p> <p>Port Nelson, York Sound, and Prince Fedrick Harbour (high abundant prey)</p> <p>Maret and Biggee Island</p>	<p>Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east)</p> <p>King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls</p> <p>Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay)</p> <p>Prince Regent River</p> <p>Port Nelson, York Sound, and Prince Fedrick Harbour</p>	No Migration BIAs identified within the EMBA	<p>Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east)</p> <p>Willie Creek – tidal mangrove creeks</p> <p>King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls</p> <p>Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay)</p> <p>Prince Regent River</p> <p>Port Nelson, York Sound, and Prince Fedrick Harbour</p> <p>Maret and Biggee Island</p>	No Nursing BIA identified within the MEBA	<p>Admiralty Gulf and Parry Harbour (1438 km north-east) (significant habitat)</p> <p>Bougainville Peninsula (significant habitat)</p> <p>Napier Broome Bay/ Deep Bay (significant habitat)</p> <p>Vansittart Bay and Anjo Peninsula (significant habitat)</p>

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
		Admiralty Gulf and Parry Harbour Vansittart Bay and Anjo Peninsula Vansittart Bay and Anjo Peninsula					
Indo-Pacific/ spotted bottlenose dolphin	No Resting BIA identified within the EMBA	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) Pender bay (foraging likely) King Sound – Southern Sector King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay)	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) King Sound – Southern Sector King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls	Pender Bay (1024 km north-east (migration likely))	Roebuck Bay – tidal mangrove creeks, extensive tidal mudflats, and salt marshes (911 km north-east) King Sound – Southern Sector King Sound – North and Yampi Sound and Talbot Bay Fjord area near horizontal falls Camden Sound Area – Walcott Inlet, Doubtful Bay, Deception Bay, Augustus Island (Kuri Bay)	No Nursing BIA identified within the EMBA	No Distribution/ Significant Habitat BIA identified within the EMBA

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Pinniped							
Australian sea-lion	No Resting BIA identified within the EMBA	Houtman Abrolhos Islands (738 km south-west) (male) Houtman Abrolhos Islands (male and female) Mid-west coast, includes Beagle Island, Fisherman Island, Jurien Bay, Cervantes and Buller Colonies (male and female) Mid-west coast, includes Beagle Island, Fisherman Island, Jurien Bay, Cervantes and Buller Colonies (male) From Recherche Archipelago to Doubtful Islands – Key colonies, Kimberley Island, Glenny and Wickham Island (male and female) Haul-Off Rock (male)	No Reproduction/ Breeding BIA identified within the EMBA	No Migration BIAs identified within the EMBA	No Calving BIA identified within the EMBA	No Nursing BIA identified within the EMBA	No Distribution/ Significant Habitat BIA identified within the EMBA

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Species	BIAs ¹						
	Resting	Foraging	Reproduction/ Breeding	Migration	Calving	Nursing	Distribution/ Significant Habitat
Sirenia							
Dugong	No Resting BIA identified within the EMBA	Exmouth Gulf (17 km south-east) (high density seagrass beds) Dirk Hartog Island and Shark Bay South Passage and Shark Bay Roebuck Bay and Broome Pilbara and Kimberley coast near James Price Point Pilbara and Kimberley coast near Dampier Peninsula Middle Island and Kimberley coast Kimberley coast and Dampier Peninsula Ashmore Reef – Far West	Exmouth Gulf (17 km south-east) Ashmore Reef – Far West	Roebuck Bay and Broome (920 km north-east) (migration likely)	Exmouth Gulf (17 km south-east)	Exmouth Gulf (17 km south-east)	No Distribution/ Significant Habitat BIA identified within the EMBA

1. Information regarding the BIAs within the EMBA are described in **Section 4.6** and BIA locations are described in the National Conservation Values Atlas.

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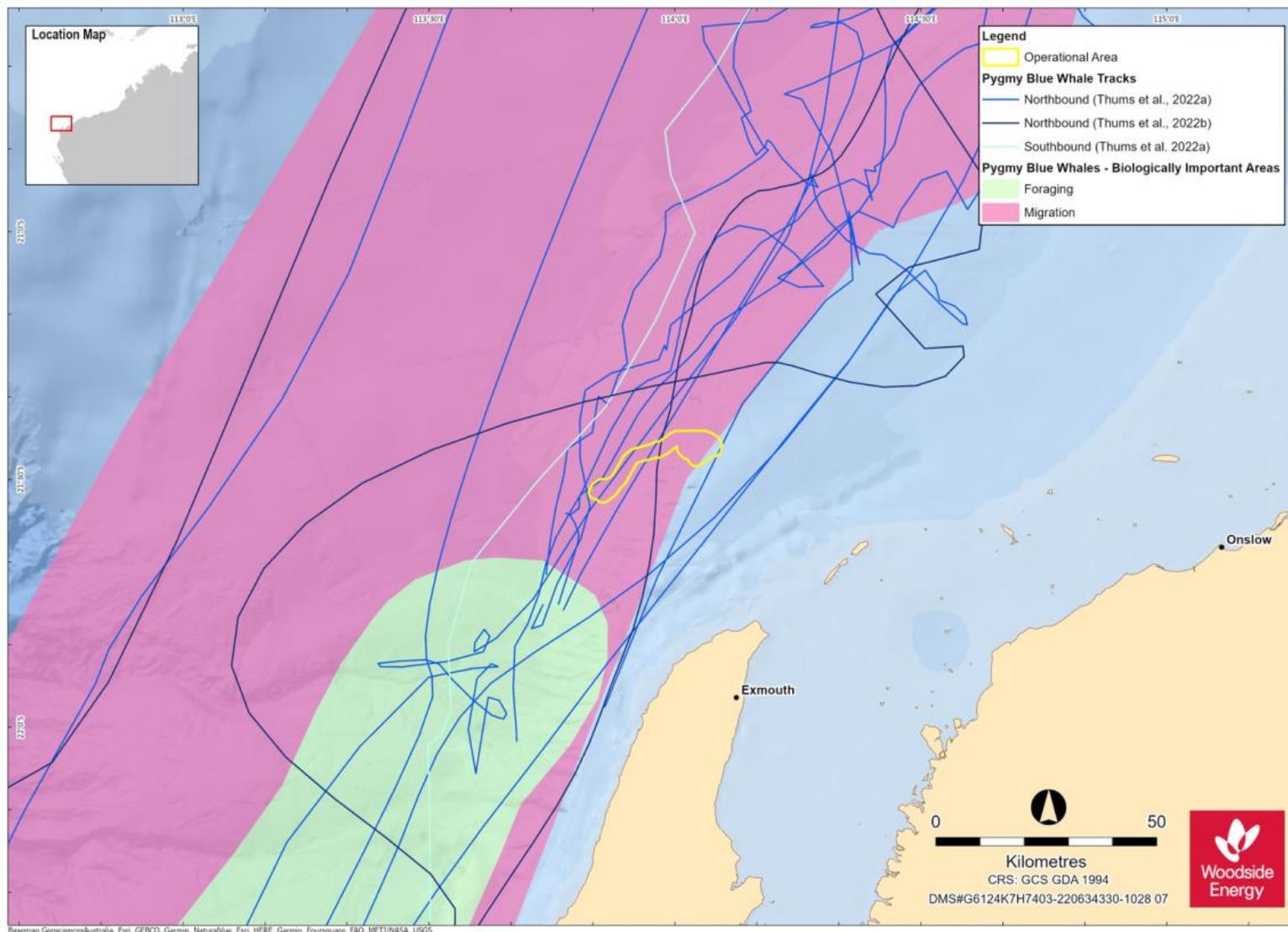


Figure 4-7: Pygmy blue whale biologically important areas and satellite tracks of whales (Thums et al., 2022a, 2022b)

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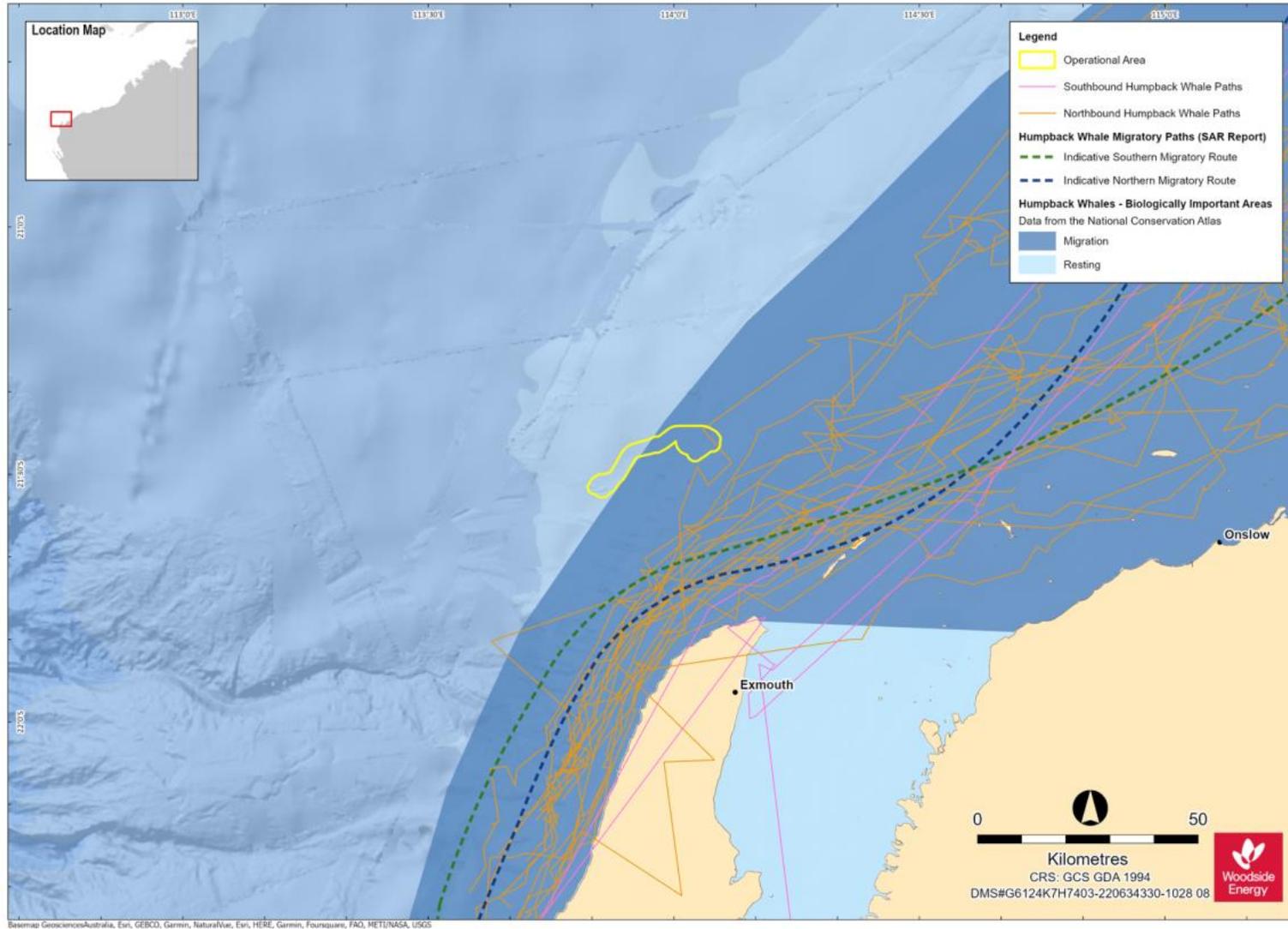


Figure 4-8: Humpback whale biologically important areas within and satellite tracks of whales (Double et al., 2012, 2010)

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4.6.4 Seabirds and Migratory Shorebirds

A total of 16 EPBC listed and migratory marine or coastal bird species have been identified to potentially occur within the Operational Area. An additional 76 EPBC-listed Threatened and Migratory seabird and shorebird species within the wider EMBA, listed in **Table 4-11**. A number of other bird species were detected by the PMST, as occurring within the wider EMBA due to the graticule search method applied. Based on the biological requirements and attributes of these species (i.e. non-marine dependant), they were not considered likely to be affected by the EMBA and have not been considered further in the EP.

Breeding BIAs for the wedge-tailed shearwater and fairy tern overlapped and adjacent to the Operational Area or within the EMBA as shown in **Figure 4-9** and described in **Table 4-12**.

Table 4-11: Threatened and Migratory marine seabird and shorebird species predicted to occur within the Operational Area and environment that may be affected

Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Calidris ferruginea</i>	Curllew sandpiper	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Numenius madagascariensis</i>	Eastern curlew	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Calidris canutus</i>	Red knot	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Macronectes giganteus</i>	Southern-giant petrel	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Phaethon lepturus fulvus</i>	Christmas Island white-tailed tropicbird	Endangered	N/A	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
<i>Pterodroma mollis</i>	Soft-plumage petrel	Vulnerable	N/A	Species or species habitat may occur within area	Foraging, feeding or related behaviour likely to occur within area
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	N/A	Foraging, feeding or related behaviour likely to occur within area	Species or species habitat may occur within area
<i>Actitis hypoleucos</i>	Common sandpiper	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
<i>Anous stolidus</i>	Common noddy	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat likely to occur within area
<i>Ardenna carneipes</i>	Flesh-footed shearwater	N/A	Migratory	Species or species habitat may occur within area	Breeding known to occur within area
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	N/A	Migratory	Species or species habitat may to occur within area	Roosting known to occur within area
<i>Calidris melanotos</i>	Pectoral sandpiper	N/A	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
<i>Fregata ariel</i>	Lesser frigatebird	N/A	Migratory	Species or species habitat likely to occur within area	Breeding known to occur within area
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory	Species or species habitat known to occur within area	Breeding known to occur within area
<i>Calidris tenuirostris</i>	Great knot	Critically Endangered	Migratory	N/A	Roosting known to occur within area
<i>Limosa lapponica menzbieri</i>	Northern Siberian bar-tailed godwit, Russkoye bar-tailed godwit	Critically Endangered	N/A	N/A	Species or species habitat known to occur within area
<i>Charadrius mongolus</i>	Lesser sand plover	Endangered	Migratory	N/A	Roosting known to occur within area
<i>Diomedea amsterdamensis</i>	Amsterdam albatross	Endangered	Migratory	N/A	Species or species habitat likely to occur within area
<i>Diomedea dabbenena</i>	Tristan albatross	Endangered	Migratory	N/A	Species or species habitat likely to occur within area
<i>Diomedea sanfordi</i>	Northern royal albatross	Endangered	Migratory	N/A	Species or species habitat may occur within area
<i>Fregata andrewsi</i>	Christmas island frigatebird	Endangered	Migratory	N/A	Foraging, feeding or related behaviour known to occur within area
<i>Thalassarche cauta</i>	Shy albatross	Endangered	Migratory	N/A	Foraging, feeding or related behaviour likely to occur within area
<i>Botaurus poiciloptilus</i>	Australasian bittern	Endangered	N/A	N/A	Species or species habitat likely to occur within area
<i>Hypotaenidia philippensis andrewsi</i>	Buff-banded rail (Cocos (Keeling) Islands), Ayam Hutan	Endangered	N/A	N/A	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Papasula abbotti</i>	Abbott's booby	Endangered	N/A	N/A	Species or species habitat may occur within area
<i>Rostratula australis</i>	Australian painted snipe	Endangered	N/A	N/A	Species or species habitat likely to occur within area
<i>Turnix varius scintillans</i>	Painted button-quail (Houtman Abrolhos)	Endangered	N/A	N/A	Species or species habitat known to occur within area
<i>Charadrius leschenaultii</i>	Greater sand plover	Vulnerable	Migratory	N/A	Species or species habitat known to occur within area
<i>Diomedea antipodensis</i>	Antipodean albatross	Vulnerable	Migratory	N/A	Foraging, feeding or related behaviour likely to occur within area
<i>Diomedea epomophora</i>	Southern royal albatross	Vulnerable	Migratory	N/A	Species or species habitat may occur within area
<i>Diomedea exulans</i>	Wandering albatross	Vulnerable	Migratory	N/A	Foraging, feeding or related behaviour likely to occur within area
<i>Macronectes halli</i>	Northern giant petrel	Vulnerable	Migratory	N/A	Foraging, feeding or related behaviour likely to occur within area
<i>Phoebastria fusca</i>	Sooty albatross	Vulnerable	Migratory	N/A	Species or species habitat likely to occur within area
<i>Thalassarche impavida</i>	Campbell albatross	Vulnerable	Migratory	N/A	Species or species habitat may occur within area
<i>Thalassarche melanophris</i>	Black-browed albatross	Vulnerable	Migratory	N/A	Foraging, feeding or related behaviour likely to occur within area
<i>Thalassarche steadi</i>	White-capped albatross	Vulnerable	Migratory	N/A	Species or species habitat may occur within area
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	Vulnerable	N/A	N/A	Breeding known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Cereopsis novaehollandiae grisea</i>	Cape Barren goose (south-western)	Vulnerable	N/A	N/A	Species or species habitat known to occur within area
<i>Halobaena caerulea</i>	Blue petrel	Vulnerable	N/A	N/A	Species or species habitat may occur within area
<i>Malurus leucopterus edouardi</i>	White-winged fairy-wren (Barrow Island), Barrow Island black-and-white fairy-wren	Vulnerable	N/A	N/A	Species or species habitat likely to occur within area
<i>Pachyptila turtur subantarctica</i>	Fairy prion (southern)	Vulnerable	N/A	N/A	Species or species habitat known to occur within area
<i>Tyto novaehollandiae kimberli</i>	Masked owl (northern)	Vulnerable	N/A	N/A	Species or species habitat likely to occur within area
<i>Acrocephalus orientalis</i>	Oriental reed-warbler	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Apus pacificus</i>	Fork-tailed swift	N/A	Migratory	N/A	Species or species habitat likely to occur within area
<i>Ardenna grisea</i>	Sooty shearwater	N/A	Migratory	N/A	Species or species habitat may occur within area
<i>Ardenna pacifica</i>	Wedge-tailed shearwater	N/A	Migratory	N/A	Breeding known to occur within area
<i>Ardenna tenuirostris</i>	Short-tailed shearwater	N/A	Migratory	N/A	Breeding known to occur within area
<i>Arenaria interpres</i>	Ruddy turnstone	N/A	Migratory	N/A	Roosting known to occur within area
<i>Calidris alba</i>	Sanderling	N/A	Migratory	N/A	Roosting known to occur within area
<i>Calidris ruficollis</i>	Red-necked stint	N/A	Migratory	N/A	Roosting known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Calidris subminuta</i>	Long-toed stint	N/A	Migratory	N/A	Roosting known to occur within area
<i>Cecropis daurica</i>	Red-rumped swallow	N/A	Migratory	N/A	Species or species habitat may occur within area
<i>Charadrius bicinctus</i>	Double-banded plover	N/A	Migratory	N/A	Roosting known to occur within area
<i>Charadrius dubius</i>	Little ringed plover	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Charadrius veredus</i>	Oriental plover	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Cuculus optatus</i>	Oriental cuckoo	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Fregata minor</i>	Great frigatebird	N/A	Migratory	N/A	Breeding known to occur within area
<i>Gallinago megala</i>	Swinhoe's snipe	N/A	Migratory	N/A	Roosting likely to occur within area
<i>Gallinago stenura</i>	Pin-tailed snipe	N/A	Migratory	N/A	Roosting likely to occur within area
<i>Glareola maldivarum</i>	Oriental pratincole	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Hirundo rustica</i>	Barn swallow	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Hydroprogne caspia</i>	Caspian tern	N/A	Migratory	N/A	Breeding known to occur within area
<i>Limicola falcinellus</i>	Broad-billed sandpiper	N/A	Migratory	N/A	Roosting known to occur within area
<i>Limnodromus semipalmatus</i>	Asian dowitcher	N/A	Migratory	N/A	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Limosa lapponica</i>	Bar-tailed godwit	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Limosa limosa</i>	Black-tailed godwit	N/A	Migratory	N/A	Roosting known to occur within area
<i>Motacilla cinerea</i>	Grey wagtail	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Motacilla flava</i>	Yellow wagtail	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Numenius minutus</i>	Little curlew	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Numenius phaeopus</i>	Whimbrel	N/A	Migratory	N/A	Roosting known to occur within area
<i>Onychoprion anaethetus</i>	Bridled tern	N/A	Migratory	N/A	Breeding known to occur within area
<i>Pandion haliaetus</i>	Osprey	N/A	Migratory	N/A	Breeding known to occur within area
<i>Phaethon rubricauda</i>	Red-tailed tropicbird	N/A	Migratory	N/A	Breeding known to occur within area
<i>Phalaropus lobatus</i>	Red-necked phalarope	N/A	Migratory	N/A	Roosting known to occur within area
<i>Philomachus pugnax</i>	Ruff (reeve)	N/A	Migratory	N/A	Roosting known to occur within area
<i>Pluvialis fulva</i>	Pacific golden plover	N/A	Migratory	N/A	Roosting known to occur within area
<i>Pluvialis squatarola</i>	Grey plover	N/A	Migratory	N/A	Roosting known to occur within area
<i>Rhipidura rufifrons</i>	Rufous Fantail	N/A	Migratory	N/A	Species or species habitat known to occur within area

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Species Name	Common Name	Threatened Status	Migratory Status	Potential for Interaction	
				Operational Area	EMBA
<i>Sterna dougallii</i>	Roseate tern	N/A	Migratory	N/A	Breeding known to occur within area
<i>Sternula albifrons</i>	Little tern	N/A	Migratory	N/A	Breeding known to occur within area
<i>Sula dactylatra</i>	Masked booby	N/A	Migratory	N/A	Breeding known to occur within area
<i>Sula leucogaster</i>	Brown booby	N/A	Migratory	N/A	Breeding known to occur within area
<i>Sula sula</i>	Red-footed booby	N/A	Migratory	N/A	Breeding known to occur within area
<i>Thalasseus bergii</i>	Greater crested tern	N/A	Migratory	N/A	Breeding known to occur within area
<i>Tringa brevipes</i>	Grey-tailed tattler	N/A	Migratory	N/A	Roosting known to occur within area
<i>Tringa glareola</i>	Wood sandpiper	N/A	Migratory	N/A	Roosting known to occur within area
<i>Tringa nebularia</i>	Common greenshank	N/A	Migratory	N/A	Species or species habitat known to occur within area
<i>Tringa stagnatilis</i>	Marsh sandpiper	N/A	Migratory	N/A	Roosting known to occur within area
<i>Tringa totanus</i>	Common redshank	N/A	Migratory	N/A	Roosting known to occur within area
<i>Xenus cinereus</i>	Terek sandpiper	N/A	Migratory	N/A	Roosting known to occur within area

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Table 4-12: Seabird and shorebird biologically important areas overlapping the environment that may be affected

Species	BIAs ¹			
	Resting	Foraging	Breeding	Aggregation
Wedge-tailed shearwater	No Resting BIA identified within the EMBA	Ranging in western seas between 12°00'S and 33°20' (468 km north-west) (high abundance)	Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (overlaps)	No Aggregation BIA identified within the EMBA
White-faced storm petrel	No Resting BIA identified within the EMBA	Offshore areas of the south-west marine region and into the adjacent south-east marine region and the north-west marine region to north of Shark Bay (621 km south-west) (high abundance)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
White-tailed-tropic bird	No Resting BIA identified within the EMBA	No Foraging BIA identified within the EMBA	Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (550 km north-east)	No Aggregation BIA identified within the EMBA
Australian lesser noddy	No Resting BIA identified within the EMBA	Houtman Abrolhos Islands (746 km south-west) (provisioning young)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Black-faced cormorant	No Resting BIA identified within the EMBA		Recherche Archipelago, west of Esperance to Hopetown (1521 km south-east)	No Aggregation BIA identified within the EMBA
Bridled tern	No Resting BIA identified within the EMBA	West coast of Western Australia and around to Recherche Archipelago including offshore waters (468 km south-west) (high abundance)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Brown booby	No Resting BIA identified within the EMBA		Kimberley and northern Pilbara coasts and islands also Ashmore Reef (505 km north-east)	No Aggregation BIA identified within the EMBA
Caspian tern	No Resting BIA identified within the EMBA	In Western Australia found on most coasts, mainly islands (as far offshore as Adele, Bedout, Trimouille and the Houtman Abrolhos) and at Lake Argyle, Lake Gregory and Lake MacLeod; accidental elsewhere in the interior (678 km south-west) (provisioning young)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA

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Species	BIAs ¹			
	Resting	Foraging	Breeding	Aggregation
Common noddy	No Resting BIA identified within the EMBA	Around Houtman Abrolhos Islands (723 km south-west) (provisioning young)	Common noddy	No Resting BIA identified within the EMBA
Fairy tern	No Resting BIA identified within the EMBA	Lower north-west coast (north to Dampier Archipelago), west coast (south to Peel Inlet) and south coast (from Flinders Bay east to Israelite Bay), including islands (as far offshore as Trimouille Island and Houtman Abrolhos Island) (714 km north-east) (high abundance)	Pilbara and Gascoyne coasts and islands (27 km south-east)	No Aggregation BIA identified within the EMBA
Flesh-footed shearwater	No Resting BIA identified within the EMBA	Foraging from Cape Naturaliste to Eyre, 1 to 150 km offshore (1327 km south-east) (high abundance)	No Breeding BIA identified within the EMBA	Foraging from Cape Naturaliste to Eyre, 1-150km offshore (1,158 km south-east)
Greater frigatebird	No Resting BIA identified within the EMBA		Kimberley and Ashmore Reef (1,045 km north-east)	No Aggregation BIA identified within the EMBA
Great-winged petrel	No Resting BIA identified within the EMBA	Offshore south of Shark Bay, extending around south-west corner of WA and east past Kangaroo Island (1302 km south-east) (provisioning young)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Indian yellow-nosed albatross	No Resting BIA identified within the EMBA	Offshore waters of south-west marine region, north to Shark Bay and extending east into Bass Strait (1417 km south-east) (high abundance)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Lesser crested tern	No Resting BIA identified within the EMBA		Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (54 km north-east)	No Aggregation BIA identified within the EMBA
Lesser frigatebird	No Resting BIA identified within the EMBA		Kimberley and Pilbara coasts and islands also Ashmore Reef (449 km north-east)	No Aggregation BIA identified within the EMBA
Little penguin	No Resting BIA identified within the EMBA	Perth to Bunbury (1159 km south-east) (provisioning young)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Little shearwater	No Resting BIA identified within the EMBA	From Kalbarri to Eucla including offshore waters (629 km south-west) (high abundance)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA

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Species	BIAs ¹			
	Resting	Foraging	Breeding	Aggregation
Little tern	Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (645 km north-east) Roebuck Bay Ramsar site		Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (631 km north-east)	No Aggregation BIA identified within the EMBA
Pacific gull	No Resting BIA identified within the EMBA	West coast and islands from Point Quobba south to Wedge Island (679 km south-east) (high abundance) South coast and islands, west to Cape Leeuwin. Common around Albany and Esperance and in the Archipelago of the Recherche (high abundance) GAB and Port Lincoln (high abundance)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Red-footed booby	No Resting BIA identified within the EMBA		North west Kimberley and Ashmore reef (1045 km north-east)	No Aggregation BIA identified within the EMBA
Roseate tern	Eighty-mile Beach (northern end) (788 km north-east)	North-western and west coasts and islands from Sir Graham Moore Island, south to Mandurah and as far offshore as Ashmore Reef, Bedout Island and the Houtman Abrolhos (881 km south-east) (provisioning young)	Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (79 km north-west) North-east and North-west Twin Islets near the mouth of King Sound Low Rocks and Stern Island in Admiralty Gulf	No Aggregation BIA identified within the EMBA
Short-tailed shearwater	No Resting BIA identified within the EMBA	Found in the archipelago of the Recherche and ranging west to the lower west coast north to 33°40'S (1618 km south-east)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA
Soft-plumage petrel	No Resting BIA identified within the EMBA	In WA found in seas north to 21°30'S (842 km south-west)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA

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Species	BIAs ¹			
	<i>Resting</i>	<i>Foraging</i>	<i>Breeding</i>	<i>Aggregation</i>
Sooty tern	No Resting BIA identified within the EMBA	Timor Sea S to 14°30', off NW coast from Lacepede Island SW to 117°E including Abrolhos, Fisherman and Lancelin islands (490 km north-west)	No Breeding BIA identified within the EMBA	No Aggregation BIA identified within the EMBA

1. Information regarding the BIAs within the EMBA are described in **Section 4.6** and BIA locations are described in the National Conservation Values Atlas.

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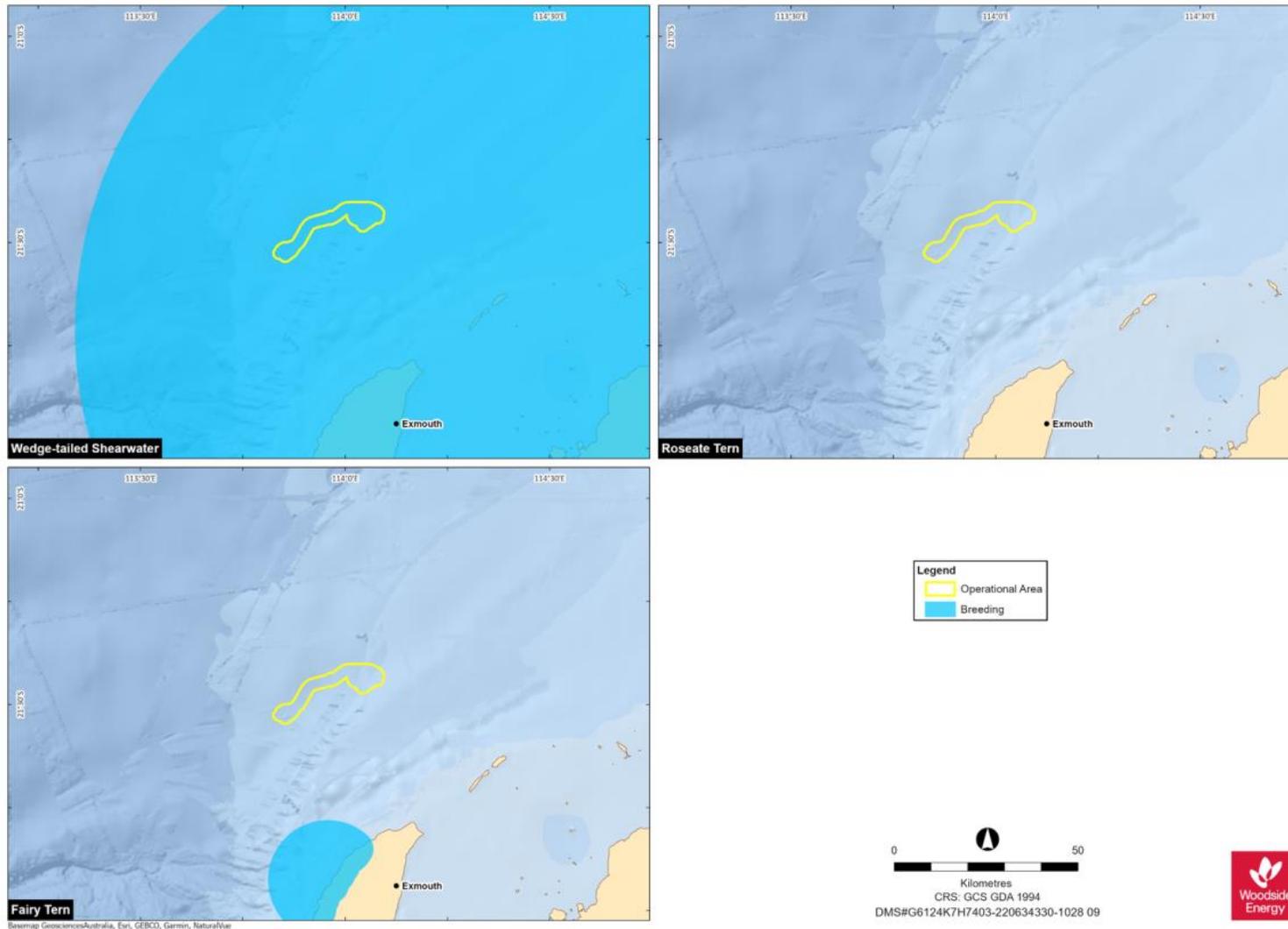


Figure 4-9: Seabirds biologically important areas overlapping and adjacent to the Operational Area

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4.6.5 Seasonal Sensitivities for Protected Species

Seasonal sensitivities for EPBC Listed threatened migratory species identified as potentially occurring within the Operational Area or EMBA are identified in **Table 4-13**. Movement patterns of all protected species identified in **Section 4.6**.

Table 4-13: Key seasonal sensitivities for protected migratory species identified as occurring within the Operational Area and/or environment that may be affected

Species	January	February	March	April	May	June	July	August	September	October	November	December
Fish, sharks and rays												
Whale shark – northern and southern migration (NWMR) (TSSC, 2015d)												
Whale shark – foraging/ aggregation (Ningaloo Coast) (TSSC, 2015d)												
Great white shark – northern migration (to North West Cape) (DSEWPaC, 2013a)												
Green sawfish – foraging (DSEWPaC, 2012)												
Green sawfish – nursing/ pupping (DSEWPaC, 2012)												
Dwarf sawfish – foraging (Department of the Environment, 2015a)												
River sawfish – non-breeding season (Department of the Environment, 2023)												
Marine reptiles¹												
Flatback turtle, Pilbara Coast genetic stock – nesting												
Flatback turtle, Pilbara Coast genetic stock – hatching												
Green turtle, NWS genetic stock – nesting												
Green turtle, NWS genetic stock - hatching												
Hawksbill turtle Western Australia genetic stock – nesting												
Hawksbill turtle Western Australia genetic stock – hatching												
Leatherback turtle – nesting												
Leatherback turtle – hatching												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
Mammals												
Fin whale						Yellow	Yellow	Yellow	Yellow	Yellow		
Humpback whale – northern migration (Double et al., 2010; DSEWPaC, 2012)						Yellow	Orange	Orange	Yellow			
Humpback whale – southern migration (Double et al., 2010; DSEWPaC, 2012)									Orange	Orange	Yellow	
Sei whale – migration (DEH, 2005)						Yellow	Yellow	Yellow	Yellow	Yellow		
East Indian Ocean (EIO) pygmy blue whale – northern migration (Double et al., 2012; 2014)				Yellow	Orange	Orange	Yellow					
East Indian Ocean (EIO) pygmy blue whale – southern migration (Double et al., 2012; 2014)	Yellow									Yellow	Orange	Orange
Southern right whale – migration (DSEWPC, 2012b)						Yellow	Yellow		Yellow	Yellow	Yellow	
Seabirds and shorebirds												
Red knot – non-breeding season (NWMR) (TSSC, 2016a)	Yellow	Yellow	Yellow	Yellow				Yellow	Yellow	Yellow	Yellow	Yellow
Eastern curlew – non-breeding (NWMR) (2014 2015d)	Yellow	Yellow	Yellow	Yellow			Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Curlew sandpiper – non-breeding season (NWMR) (DoE, 2015)	Yellow	Yellow	Yellow	Yellow				Yellow	Yellow	Yellow	Yellow	Yellow
Southern giant petrel – non-breeding season (Australia) (DCCEEW, 2022c)	Yellow	Yellow	Yellow	Yellow				Yellow	Yellow	Yellow	Yellow	Yellow
Indian yellow-nosed albatross – non-breeding season (Australia) (ACAP, 2012)					Yellow	Yellow	Yellow					
Wedge-tailed shearwater – various breeding sites (DSEWPaC, 2012c; Environment Australia, 2002)	Yellow	Yellow	Yellow	Yellow				Yellow	Yellow	Yellow	Yellow	Yellow
Yellow	Species may be present in the Operational Area											
Orange	Peak period. Presence of animals is reliable and predictable each year											

References for species seasonal sensitivities:

- Environment Australia, 2002
- CALM, 2005; Environment Australia, 2002
- Commonwealth of Australia, 2017; Chevron, 2015; CALM, 2005; DSEWPaC, 2012a

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- Commonwealth of Australia, 2017; Chevron, 2015
- DSEWPaC, 2012a; McCauley and Jenner, 2010; McCauley, 2011
- DSEWPaC, 2012a; McCauley and Jenner, 2010
- CALM, 2005; Environment Australia, 2002; Jenner et al., 2001a; McCauley and Jenner, 2001
- McCauley and Jenner, 2001
- DSEWPaC, 2012b; Environment Australia, 2002

4.7 Key Ecological Features

Two KEFs overlap the Operational Area and an additional three occur nearby (**Figure 4-10**). KEFs within the Operational Area and EMBA are identified in **Table 4-14**.

Table 4-14: Key ecological features within the Operational Area and environment that may be affected

Key Ecological Feature	Approximate Distance and Direction from Operational Area (km)
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	Overlaps
Continental Slope demersal fish communities	Overlaps
Ancient coastline at 125 m depth contour	0.6 km south-east
Commonwealth waters adjacent to Ningaloo Reef	8.6 km south-east
Exmouth Plateau	65.9 km north-west
Glomar Shoals	319.8 km north-east
Western demersal slope and associated fish communities	468.3 km south-west
Wallaby Saddle	481.8 km south-west
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	639.9 km north-east
Western rock lobster	678.7 km south-west
Ancient coastline at 90 to 120 m depth	680.2 km south-west
Perth Canyon and adjacent shelf break, and other west coast canyons	703 km south-west
Commonwealth marine environment within and adjacent to the west coast inshore lagoons	718.4 km south-east
Commonwealth marine environment surrounding the Houtman Abrolhos Islands	720.7 km south-west
Canyons linking the Argo Abyssal Plain with the Scott Plateau	951.6 km north-east
Seringapatam Reef and Commonwealth waters in the Scott Reef Complex	1134.1 km north-east
Commonwealth marine environment within and adjacent to Geographe Bay	1305.7 km south-east
Naturaliste Plateau	1313.1 km south-west
Cape Mentelle upwelling	1322.8 km south-east
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	1384.4 km north-east
Albany Canyons group and adjacent shelf break	1514.6 km south-east
Pinnacles of the Bonaparte Basin	1727 km north-east
Carbonate Bank and terrace system of the Sahul Shelf	1511.8 km north-east

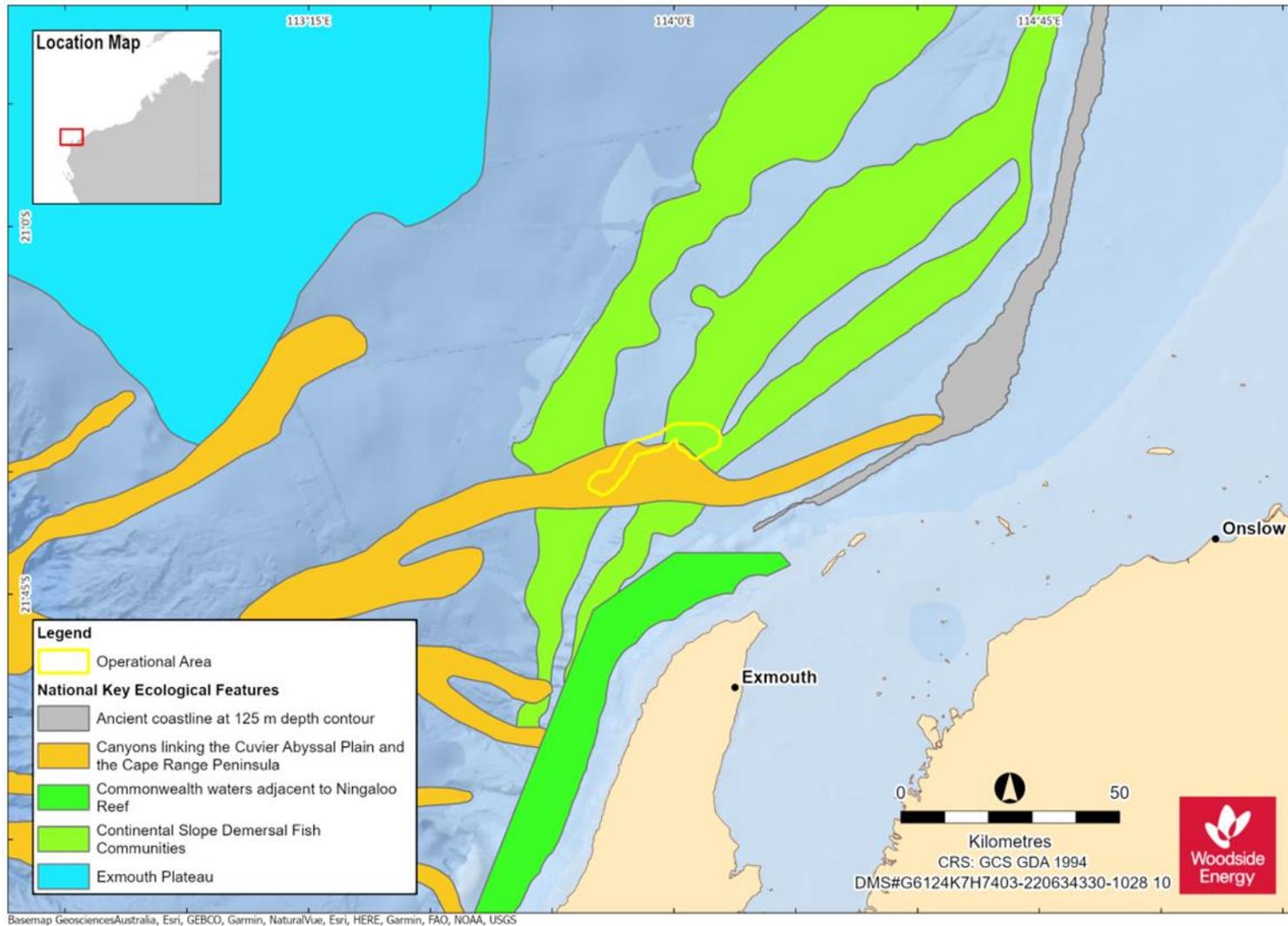


Figure 4-10: Key ecological features overlapping and adjacent to the Operational Area

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4.8 Protected Places

No protected places overlap the Operational Area. Protected places within the EMBA are identified in **Table 4-15**.

Table 4-15: Established protected places and other sensitive areas overlapping the environment that may be affected

	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
Australian Marine Parks		
Ningaloo Marine Park	8.6 km south-east	National Park Zone – II Recreational Use Zone – IV
Gascoyne Marine Park	7.7 km south-west	Habitat Protection Zone – IV National Park – II Multiple Use Zone – VI
Montebello Marine Park	133.7 km south-east	Multiple Use Zone – VI
Dampier Marine Park	306.4 km north-east	Habitat Protection Zone – IV Multiple Use Zone – VI National Park – II
Shark Bay Marine Park	314.7 km south-west	Multiple Use Zone – VI
Carnarvon Canyon Marine Park	319.1 km south-west	Habitat Protection Zone – IV
Argo-Rowley Terrace	472.6 km north-east	Multiple Use Zone – VI Multiple Use Zone – VI National Park – II
Abrolhos	467.6 km south-west	Habitat Protection Zone – IV Multiple Use Zone – VI Special Purpose Zone – VI National Park – II
Eighty Mile Beach Marine Park	530.6 km north-east	Multiple Use Zone – VI
Mermaid Reef Marine Park	735.7 km north-east	National Park – II
Kimberley Marine Park	873.3 km north-east	Habitat Protection Zone – IV National Park – II Multiple Use Zone – VI
Roebuck Marine Park	902 km north-east	Multiple Use Zone – VI
Jurien Marine Park	952.5 km south-east	Special Purpose Zone – VI National Park – II
Two Rocks Marine Park	1102.7 km south-east	Multiple Use Zone – VI National Park – II
Perth Canyon Marine Park	1121.1 km south-east	Habitat Protection Zone – IV Multiple Use Zone – VI National Park – II
Christmas Island	1130.0 km north-west	Habitat Protection Zone - IV National Park – II
Geographe Marine Park	1306.5 km south-east	Special Purpose Zone (Mining Exclusion)- VI

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	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
South-west Corner Marine Park	1302.8 km south-east	Special Purpose Zone (Mining Exclusion) – VI National Park – II Multiple Use Zone – VI
Ashmore Reef Marine Park	1384.4 km north-east	Sanctuary Zone – Ia Recreational Use Zone – IV
Cartier Island Marine Park	1405.4 km north-east	Sanctuary Zone – Ia
Cocos (Keeling) Islands	1700.0 km north-west	Habitat Protection Zone (IV) National Park – II
State Marine Parks and Nature Reserves		
Marine Parks		
Ningaloo Marine Park	12.2 km south-east	Special Purpose Zone (Shore Based Activities) – II Special Purpose Zone (Benthic Protection) – IV Sanctuary Zone – IA Recreational Area – II General Use – II
Barrow Island Marine Park	140.3 km north-east	Sanctuary Zone – IA
Montebello Islands Marine Park	167.6 km north-east	Sanctuary Zone – IA Recreational Zone – II Special Purpose Zone (Pearling) – VI Special Purpose Zone (Benthic Protection) – IV General Use Zone – II
Shark Bay Marine Park	387.7 km south-west	Sanctuary Zone – IA General Use – II Special Purpose Zone (Seagrass Protection) – IV
Eighty Mile Beach Marine Park	574.3 km north-east	Special Purpose Zone (Cultural Heritage) – VI Special Purpose Zone (Shore-based Activities) – VI General Use Zone – VI Sanctuary Zone – VI Recreation Zone – VI
Rowley Shoals Marine Park	648.9 km north-east	Sanctuary Zone – IA Recreation Zone – II General Use – II Unassigned – IV

	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
Jurien Bay Marine Park	942.5 km south-east	Sanctuary Zone – IA Special Purpose Zone (Shore-based Activities) – II, Special Purpose Zone (Puerulus) – IA Special Purpose Zone (Aquaculture) – VI Special Purpose Zone (Scientific Reference) – II General Use – II
Marmion Marine Park	1132.5 km south-east	Sanctuary Zone – IA Recreation Zone – II General Use – II Unassigned – IV
Shoalwater Islands Marine Park	1190.9 km south-east	Special Purpose Zone (Wildlife Conservation) – VI General Use Area – VI Sanctuary Area – VI
Ngari Capes Marine Park	1320.2 km south-east	Recreation Zone – VI Special Purpose Zone (Shore-based Activities) – VI Special Purpose Zone (Surfing) – VI Sanctuary Zone – VI General Use Zone – VI
Lalang-garram/Horizontal Falls Marine Park	1172.5 km north-east	Special Purpose Zone (Recreation and Conservation) – VI Sanctuary Zone – VI General Use Zone – VI
Lalang-garram/Camden Sound Marine Park	1156 km north-east	Special Purpose Zone (Pearling) – VI Special Purpose Zone (Wilderness Conservation) – VI Special Purpose Zone (Whale Conservation) – VI General Use Zone – VI Sanctuary Zone – VI
North Lalang-garram Marine Park	1269.3 km north-east	General Use Zone – VI
North Kimberley Marine Park	1302.6 km north-east	Special Purpose Zone – VI
Yawuru Nagulagun/Roebuck Bay	895.2 km north-east	Special Purpose Zone – VI
Conservation Park		
Montebello Islands Conservation Park	177.3 km north-east	National Park – II
Marine Management Areas		
Muiron Islands Marine Management Area	10.4 km south-east	Special Purpose Zone – VI Sanctuary Zone – IA
Barrow Island Marine Management Area	128.2 km north-east	Special Purpose Zone – VI
Nature Reserves		
Thevenard Island Nature Reserve	77.5 km east	Sanctuary Zone – IA

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	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
Great Sandy Island	130.4 km north-east	
Beagle Islands	913 km south-east	
Lipfert, Milligan, etc. Islands	928.4 km south-east	
Fishermans Islands	949.5 km south-east	
Outer Rocks	984.2 km south-east	
Cervantes Islands	993.6 km south-east	
Buller, Whittell and Green Islands	1009.3 km south-east	
Shoalwater Bay Islands	1193.7 km south-east	
Scott Reef	1139.7 km north-east	
Fish Habitat Protection Areas		
Point Quobba	328.9 km south-west	Recreational Use Zone – IV
Miaboolya Beach	348.4 km south-west	
Kalbarri Blue Holes	679.3 km south-east	
Abrolhos Islands	737.4 km south-west	
Lancelin Island Lagoon	1049.5 km south-east	
Cottesloe Reef	1162.1 km south-east	
State Terrestrial Protected Areas		
Parks and Reserves		
Cape Range National Park	48.2 km south-east	National Park Zone – II
Dirk Hartog Island National Park	446.7 km south-west	
Houtman Abrolhos National Park	745.5 km south-west	
Leeuwin-Naturaliste National Park	1408 km south-east	
Stokes National Park	1521.1 km south-east	
Muiron Islands	16.1 km south-east	Sanctuary Zone – IA
Victor Island	43.8 km south-east	
Y Island	46.1 km south-east	
Round Island	46.5 km south-east	
Serrurier Island	47 km south-east	
Bessieres Island	56.9 km north-east	
Locker Island	59.4 km south-east	
Whalebone Island	69.8 km south-east	
Airlie Island	102.5 km north-east	
Little Rocky Island	125.6 km north-east	
Barrow Island	136.3 km north-east	
Boodie, Double Middle Islands	132.6 km north-east	
North Sandy Island	158 km north-east	
Lowendal Islands	169.4 km north-east	
Bernier and Dorre Islands	362.6 km south-west	

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	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
Koks Island	362 km south-west	
North Turtle Island	521.9 km north-east	
Bedout Island	554.5 km north-east	
Boullanger, Whitlock, Favourite, Tern and Osprey Islands	970.1 km south-east	
Escape Island	972.1 km south-east	
Lacepede Islands	978.7 km north-east	
Wedge Island	1,028.6 km south-east	
Rottnest Island	1158.4 km south-east	
Bald Island	1534.9 km south-east	
Recherche Archipelago	1678.5 km south-east	
Montebello Islands	177.3 km north-east	
Threatened Ecological Communities		
Subtropical and temperate coastal saltmarsh	366.7 km south	N/A
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	924.1 km north-east	N/A
Banksia Woodlands of the Swan Coastal Plain ecological community	948.3 km south	N/A
Proteaceae dominated Kwongkan shrublands of the Southeast Coastal Floristic Province of Western Australia	1533.1 km south-east	N/A
Aquatic Root Mat Community 3 in caves of the Leeuwin Naturaliste Ridge	1340.0 km south	N/A
Aquatic Root Mat Community 4 in caves of the Leeuwin Naturaliste Ridge	1340.0 km south	N/A
Tuart (<i>Eucalyptus gomphocephala</i>) woodlands and forests of the Swan Coastal Plain ecological community	950.0 km south	N/A
Ramsar Wetlands		
Eighty-mile Beach	603.1 km north-east	N/A
Roebuck Bay	904.2 km north-east	N/A
Ashmore Reef National Nature Reserve	1284.4 km north-east	N/A
Pulu Keeling National Park	2150.3 km north-west	N/A
The Dales	1516.2 km north-west	N/A
Hosnies Spring	1509.2 km north-west	N/A
Becher Point Wetlands	1204.3 km south-east	N/A
Peel-Yalgorup System	1239.9 km south-east	N/A
Vasse-Wonnerup System	1335.2 km south-east	N/A

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	Distance and Direction from Operational Area to Protected Place or Sensitive Area (km)	Park Zone and IUCN Category* Overlapping Operational Area and/or EMBA
Nationally Important Wetlands		
Cape Range Subterranean Waterways	22.1 km south-west	N/A
Exmouth Gulf East	55.3 km south-east	N/A
Lake MacLeod	346.0 km south	N/A
Shark Bay East	387.7 km south-west	N/A
Eighty Mile Beach System	575.6 km north-east	N/A
Murchison River (Lower Reaches)	678.3 km south-east	N/A
Hutt Lagoon System	723.7 km south-east	N/A
Mermaid Reef	735.7 km north-east	N/A
Roebuck Bay	908.2 km north-east	N/A
Willie Creek Wetlands	937.7 km north-east	N/A
Lake Thetis	991.2 km south-east	N/A
Rottnest Island Lakes	1160.5 km south-east	N/A
Swan-Canning Estuary	1167 km south-east	N/A
Yalgorup Lakes System	1274.3 km south-east	N/A
Vasse-Wonnerup Wetland System	1334.4 km south-east	N/A
Cape Leeuwin System	1419.8 km south-east	N/A
Broke Inlet System	1494.5 km south-east	N/A
Doggerup Creek System	1500 km south-east	N/A
Hosine's Spring, Christmas Island	1509.7 km north-west	N/A
The Dales, Christmas Island	1517.9 km north-west	N/A
Pulu Keeling National Park	2080.0 km north-west	N/A

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: National Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape/Seascape

VI: Protected area with sustainable use of natural resources – allow human use but prohibits large scale development.

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the North-west Marine Parks Network Management Plan 2018 and South-west Marine Parks Network Management Plan 2018.

Protected Area	Description	Conservation Values
Murchison River (Lower Reaches)	The river mouth is at Kalbarri on the Indian Ocean coast; the upstream limit of the site is 42 km east south-east of Kalbarri. The site comprises the estuary of the Murchison River and pools in the lower reaches and extends into the Kalbarri National Park.	Cultural values, including registered and expected multiple other Aboriginal archaeological and ethnographical sites. The area meets criteria 1 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Pulu Keeling National Park	Description of the protected area is contained in Section 4.	The area meets criteria 1, 3, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Roebuck Bay	Description of the protected area is contained in Section 4.	The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Swan-Canning Estuary	Description of the protected area is contained in Section 4.	The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Vasse-Wonnerup Wetland System	Description of the protected area is contained in Section 4.	The area meets criteria 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Willie Creek Wetlands	The site consists of two spring-fed and tidally inundated wetlands, Nimalaica Swamp and an unnamed crescent-shaped lake 2 km to the north. They are on tidal flats of Willie Creek estuary.	Socio-cultural values, containing areas of special significance including ancient food-gathering, corroboree and burial sites. The area meets criteria 1, 3, and 6 for inclusion on the Directory of Important Wetlands in Australia.
Yalgorup Lakes System	Description of the protected area is contained in Section 4.	The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.

4.9 Cultural Features and Heritage Values

4.9.1 Background

Woodside recognises the 'environment' for the purpose of the evaluation required under the Environment Regulations includes:

- the heritage value of places
- the social, economic and cultural features of the broader environment.

In this section, the heritage value of places within the Operational Area and EMBA and the cultural features of the Operational Area and EMBA are described.

In line with The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (ICOMOS, 2013) (Burra Charter) and associated practice notes, Woodside understands heritage value to refer to the cultural significance of a place to an individual or group. A cultural feature, by contrast, is understood to be comparable to the Burra Charter term “fabric” and refer to a place’s elements, fixtures, contents and objects which have cultural values. Although these features are necessarily physical, the place they inhabit or comprise may have tangible and intangible dimensions (ICOMOS, 2013).

Through consultation with relevant persons, Woodside recognises the deep spiritual and cultural connection to the environment that First Nations people hold.

4.9.2 First Nations Peoples

As a starting point for understanding cultural features of the environment for First Nations groups, Woodside uses the existing systems, such as native title, to identify First Nations groups that may

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have functions, interests or activities that may be affected. To that end, Woodside identifies native title representative bodies and nominated representative entities, as well as native title claims, determinations and Indigenous Land Use Agreements (ILUAs) which the EMBA overlaps. Native title claims, determinations and ILUAs are defined under the *Native Title Act 1993* (Cth). While acknowledging that cultural features and heritage values may exist outside of the native title framework, Woodside considers this to be the broadest extent over which First Nations groups have claimed native title rights and interests.

Native title claims are applications made to the Federal Court under the *Native Title Act* for a determination or decision about native title in a particular area. A claim is made by a native title claim group which asserts it holds native title rights and interests in an area of land and/or water, according to its traditional laws and customs. By making a claim, the native title claim group seeks a decision that native title exists so that its native title rights and interests are recognised by the common law of Australia. This is called a native title determination. A determination is a decision by a recognised body, such as the Federal Court or High Court of Australia, that native title either does or does not exist in relation to a particular area (National Native Title Tribunal).

A requirement to establishing a positive determination of native title in court is proving that there is an organised society that occupied the land and/or waters at the time of British annexation. The requirement of an 'organised society' is set out by Justice Toohey in the historic judgment of *Mabo v Queensland (No 2)* [1992] HCA 23; (1992) 175 CLR 1 ('Mabo'). Justice Toohey had the following to say (at 187):

“it is inconceivable that indigenous inhabitants in occupation of land did not have a system by which land was utilised in a way determined by that society. There must, of course, be a society sufficiently organized to create and sustain rights and duties...”

Therefore, Woodside understands native title rights and interests are held communally by an organised society, that native title claims are understood to represent the area over which First Nations groups are claiming these rights and interests, and that native title determinations provide clarity on where native title rights and interests are found to either exist or not exist. Where native title rights or interests are determined to exist, they will be held by a Registered Native Title Body Corporate (section 57, *Native Title Act 1993*) in trust or as agent for native title holders.

ILUAs are voluntary agreements between native title parties and other people or bodies about the use and management of land and/or waters and are registered by the Native Title Registrar in the Register of ILUAs. An ILUA can be made over areas where:

- native title has been determined to exist in at least part of the area, or
- a native title claim has been made, or
- where no native title claim has been made.

While registered, ILUAs operate as a contract between the parties, including relevant native title holders (National Native Title Tribunal).

The *Native Title Act* also provides for a Representative Aboriginal/Torres Strait Islander Body (Native Title Representative Body) to be recognised by the Commonwealth Minister for an area. Native Title Representative Bodies have specialist functions set out in the *Native Title Act* within the area for which they are the Native Title Representative Body. However, the functions of a Native Title Representative Body are such that they do not hold details on the cultural features or heritage values of an area and therefore do not inform Woodside's understanding of heritage values or cultural features.

For the activity in this EP, there are no native title claims or determinations and no ILUAs overlapping the Operational Area; however, 26 native title claims and 44 ILUAs overlap the EMBA (see **Figure 4-11**). A summary of native title claims, determinations and ILUAs which overlap the EMBA or are coastally adjacent to the EMBA is set out in **Table 4-17**. Claims and determinations have not

been differentiated in this table, as it is acknowledged that rights and interests may exist within either of these.

4.9.3 Coastally Adjacent First Nations Groups

Woodside understands that First Nations groups are keenly aware of the extent of their rights, interests and responsibilities for Country, and these are generally discrete, defined areas, including areas of sea (Smyth, 2007). To identify cultural features and heritage values which may exist outside of native title claim, determination and ILUA areas, Woodside considers native title claims, determinations and ILUAs coastally adjacent to the EMBA to be an instructive means of identifying potentially relevant First Nations groups to be consulted (see **Table 4-17**).

That said, Woodside understands from engagement with stakeholders that extending a native title group's responsibility to areas which those groups have elected to not include in their claims or ILUAs can have significant cultural consequences for First Nations groups and individuals. This may also, over time, build expectations in the broader First Nations community that a group is responsible for maintaining environmental values in areas for which they do not hold traditional knowledge. Woodside also acknowledges that a First Nations group's relative proximity to the Operational Area or EMBA is not necessarily a meaningful indicator of the connection of First Nations groups to the area, and providing advice over such areas can be culturally dangerous. As a result, caution must be used when conducting broader engagement.

A summary of native title claims, determinations and ILUAs overlapping or coastally adjacent to the EMBA is set out in **Table 4-17**. Claims and determinations have not been differentiated in this table, as it is acknowledged that either of these may indicate the existence of rights and interests.

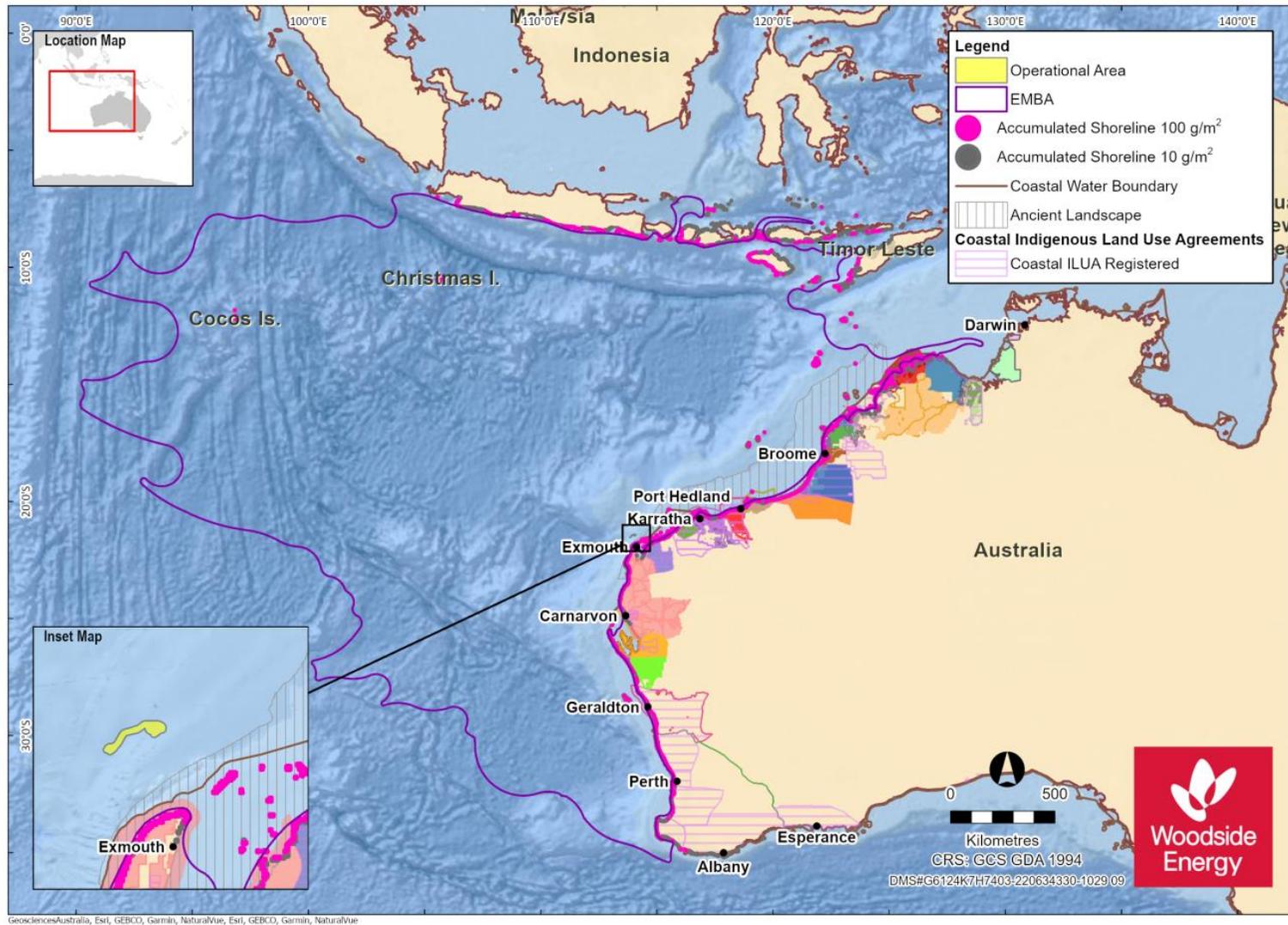


Figure 4-11: Operational Area and environment that may be affected in relation to native title claims, determinations and Indigenous Land Use Agreements

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Table 4-17: Summary of native title claims, determinations and Indigenous Land Use Agreements that overlap or are coastally adjacent to the environment that may be affected

Claim/Determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Claim/Determination			
Balanggarra #4	Balanggarra Aboriginal Corporation	No	Yes
Balanggarra (Combined)	Balanggarra Aboriginal Corporation	Yes	Yes
Bardi and Jawi Native Title Determination	Bardi and Jawi Niimidiman Aboriginal Corporation	Yes	Yes
Bindunbur	Gogolanyngor Aboriginal Corporation, Nimanburr Aboriginal Corporation, Nyul Nyul PBC Aboriginal Corporation	Yes	Yes
Boorroola Moorrool Moorrool Part A	Walalakoo Aboriginal Corporation	No	Yes
Dambimangari	Wanjina-Wunggurr (Native Title) Aboriginal Corporation	Yes	Yes
Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People	Nganhurra Thanardi Garbu Aboriginal Corporation (NTGAC), Yinggarda Aboriginal Corporation (YAC)	Yes	Yes
Jabirr Jabirr/Ngumbarl	Gogolanyngor Aboriginal Corporation	Yes	Yes
Karajarri People (Area A)	Karajarri Traditional Lands Association (Aboriginal Corporation)	Yes	Yes
Karajarri People (Area B)	Karajarri Traditional Lands Association (Aboriginal Corporation)	Yes	Yes
Kariyarra	Kariyarra Aboriginal Corporation	Yes	Yes
Malgana Part A	Malgana Aboriginal Corporation	Yes	Yes
Mayala #2	Mayala Inninalang Aboriginal Corporation	No	Yes
Mayala People	Mayala Inninalang Aboriginal Corporation	Yes	Yes
Miriuwung Gajerrong #4	Miriuwung and Gajerrong #4 (Native Title Prescribed Body Corporate) Aboriginal Corporation (Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang (MG Corp))	No	Yes
Miriuwung-Gajerrong (Western Australia)	Miriuwung and Gajerrong #1 (Native Title Prescribed Body Corporate) Aboriginal Corporation (Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang (MG Corp))	No	Yes
Nanda People and Nanda #2	Nanda Aboriginal Corporation	Yes	Yes
Nanda People Part B, Malgana 2 and Malgana 3	Malgana Aboriginal Corporation, Nanda Aboriginal Corporation	Yes	Yes
Ngadju	Ngadju Native Title Aboriginal Corporation	Yes	No
Ngarla and Ngarla #2 (Determination Area A)	Wanparta Aboriginal Corporation	Yes	Yes
Ngarluma People	Ngarluma Aboriginal Corporation (NAC)	Yes	Yes
Ngarluma/Yindjibarndi	Yindjibarndi Aboriginal Corporation, NAC	Yes	Yes

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Claim/Determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Nyangumarta People (Part A)	Nyangumarta Warrarn Aboriginal Corporation	Yes	Yes
Nyangumarta-Karajarri Overlap Proceeding (Yawinya)	Nyangumarta Karajarri Aboriginal Corporation	Yes	Yes
Rubibi Community	Kunin (Native Title) Aboriginal Corporation	No	Yes
Rubibi Community	Yawuru Native Title Holders Aboriginal Corporation	Yes	Yes
South West Native Title Settlement	South West Aboriginal Land and Sea Council	Yes	Yes
Thalanyji	Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	Yes	Yes
The Esperance Nyungars	Esperance Tjaltjraak Native Title Aboriginal Corporation	Yes	No
Uunguu Part A	Wanjina-Wunggurr (Native Title) Aboriginal Corporation	Yes	Yes
Uunguu - Area B	Wanjina-Wunggurr (Native Title) Aboriginal Corporation	No	Yes
Wanjina - Wunggurr Wilinggin Native Title Determination No 1	Wanjina-Wunggurr (Native Title) Aboriginal Corporation	No	Yes
Warrwa Combined Part A	Warrwa People Aboriginal Corporation	No	Yes
Warrwa Mawadjala Gadjidgar	Warrwa People Aboriginal Corporation	No	Yes
Yaburara & Mardudhunera People	Wirrawandi Aboriginal Corporation (WAC)	Yes	Yes
Yamatji Nation	Bundi Yamatji Aboriginal Corporation	Yes	Yes
ILUA			
Alinta-Kariyarra Electricity Infrastructure ILUA	No representative body specified.	Yes	Yes
Anketell Port, Infrastructure Corridor and Industrial Estates Agreement	NAC	Yes	Yes
Ashburton Salt Project Indigenous Land Use Agreement (Body Corporate Agreement)	BTAC	Yes	Yes
BAC KSCS Indigenous Land Use Agreement	No representative body specified.	Yes	Yes
Bardi Jawi Conservation Estate Indigenous Land Use Agreement	Bardi and Jawi Niimidiman Aboriginal Corporation	Yes	Yes
Brickhouse and Yinggarda Aboriginal Corporation ILUA	Yinggarda Aboriginal Corporation	Yes	Yes
Cape Preston Project Deed (YM Mardie ILUA)	WAC	Yes	Yes

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Claim/Determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Cape Preston West Export Facility	WAC	Yes	Yes
Dambimangari Country Marine Park Indigenous Land Use Agreement	Dambimangari Aboriginal Corporation, Wanjina-Wunggurr (Native Title) Aboriginal Corporation RNTBC	Yes	Yes
Dambimangari KSCS Marine Parks ILUA	Wanjina-Wunggurr (Native Title) Aboriginal Corporation, Dambimangari Aboriginal Corporation	Yes	Yes
Eco Beach ILUA	Yawuru Native Title Holders Aboriginal Corporation	Yes	Yes
Esperance Nyungar Government ILUA	No representative body specified.	Yes	No
FMG - Kariyarra Land Access ILUA	No representative body specified.	Yes	Yes
Gnaala Karla Booja Indigenous Land Use Agreement	Gnaala Karla Booja Aboriginal Corporation	Yes	Yes
Gnaraloo Indigenous Land Use Agreement	NTGAC	Yes	Yes
Great Sandy Desert Project ILUA - Infrastructure	Karajarri Traditional Lands Association (Aboriginal Corporation)	Yes	Yes
Karajarri Traditional Lands Association KSCS Eighty Mile Beach ILUA	Karajarri Traditional Lands Association (Aboriginal Corporation)	Yes	Yes
Kariyarra and State ILUA	Kariyarra Aboriginal Corporation	Yes	Yes
KM & YM Indigenous Land Use Agreement 2018	WAC, Robe River Kuruma Aboriginal Corporation	Yes	Yes
Kuruma Marthudunera and Yaburara and Coastal Mardudhunera Indigenous Land Use Agreement	No representative body specified.	Yes	Yes
Macedon ILUA	BTAC	Yes	Yes
Malgana Tamala Pastoral Lease Agreement	Malgana Aboriginal Corporation	Yes	Yes
Mayala Country Marine Park Indigenous Land Use Agreement	Wanparta Aboriginal Corporation	Yes	Yes
Ngarla Pastoral ILUA	Wanparta Aboriginal Corporation	Yes	Yes
Ngarla PBC KSCS ILUA	Wanparta Aboriginal Corporation	Yes	Yes
Ningaloo Conservation Estate ILUA	NTGAC	Yes	Yes
NKAC KSCS Eighty Mile Beach ILUA	Nyangumarta Karajarri Aboriginal Corporation	Yes	Yes
Nyangumarta Karajarri and Anna Plains Station ILUA	Nyangumarta Karajarri Aboriginal Corporation	Yes	Yes
Nyangumarta Karajarri and Mandora Station ILUA	Nyangumarta Karajarri Aboriginal Corporation	Yes	Yes

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Claim/Determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Nyangumarta PBC KSCS ILUA	Nyangumarta Warrarn Aboriginal Corporation	Yes	Yes
Nyangumarta Warrarn Aboriginal Corporation & Mandora Pastoral Lease ILUA	Nyangumarta Warrarn Aboriginal Corporation	Yes	Yes
Nyangumarta Warrarn Aboriginal Corporation & Wallal Downs Pastoral Lease ILUA	Nyangumarta Warrarn Aboriginal Corporation	Yes	Yes
Quobba – Yinggarda Pastoral ILUA	YAC	Yes	Yes
RTIO Kuruma Marthudunera People ILUA	Robe River Kuruma Aboriginal Corporation	Yes	Yes
RTIO Ngarluma Indigenous Land Use Agreement (Body Corporate Agreement)	NAC	Yes	Yes
South West Boorah #2 Indigenous Land Use Agreement	Karri Karrak Aboriginal Corporation	Yes	Yes
The Cockatoo Island Co- Existence Indigenous Land Use Agreement	Wanjina-Wunggurr (Native Title) Aboriginal Corporation, Dambimangari Aboriginal Corporation	Yes	Yes
Wagyl Kaip & Southern Noongar Indigenous Land Use Agreement	Wagyl Kaip Southern Noongar Aboriginal Corporation	Yes	No
Whadjuk People Indigenous Land Use Agreement	Whadjuk Aboriginal Corporation	Yes	Yes
Yamatji Nation Agreement	Bundi Yamatji Aboriginal Corporation	Yes	Yes
Yawuru Area Agreement ILUA	No representative body specified.	Yes	Yes
Yawuru Nagulagun/ Roebuck Bay Marine Park ILUA	Yawuru Native Title Holders Aboriginal Corporation	Yes	Yes
Yawuru Prescribed Body Corporate ILUA – Broome	Yawuru Native Title Holders Aboriginal Corporation	Yes	Yes
Yued Indigenous Land Use Agreement	Yued Aboriginal Corporation	Yes	Yes

4.9.4 Marine Parks

Woodside acknowledges Commonwealth and State Marine Park Management Plans have sought to recognise cultural values of First Nations groups. Australian Marine Parks (AMP) describe this framework in the following way: ‘when making decisions about what can occur in marine parks and what action we will take to protect marine parks, we take values into account’. AMP summarises these values as natural values, cultural values, heritage values and socio-economic values.

Woodside is triggered to undertake an assessment of cultural values within Marine Park Management Plans where the operational area or EMBA overlaps an AMP. Woodside considers the

management plans of marine parks that overlap the Operational Area and EMBA to determine whether cultural features and heritage values have been identified and whether there are specified representative bodies referenced to contact regarding potential cultural features and heritage values.

The Operational Area does not overlap any Commonwealth Marine Parks. The EMBA overlaps with 19 AMPs managed under the South-West Marine Parks Network Management Plan 2018, North-West Marine Parks Network Management Plan 2018 and North Marine Parks Network Management Plan 2018, as well as the Christmas Island AMP and Cocos (Keeling) Island AMP for which management plans are still being developed. No First Nations groups or cultural values are identified for these two AMPs in their respective values statements (DNP, 2022a; DNP, 2022b). The Operational Area does not overlap any State Marine Parks however, the EMBA overlaps 15 State Marine Parks. Where the plans for these marine parks specify identifiable representative bodies who may hold knowledge of heritage values or cultural features—including but not limited to Registered Native Title Bodies Corporate—these bodies are consulted. Consultation with these groups may identify heritage values and cultural features beyond those addressed in the marine park management plans. Nine identifiable representative bodies were specified for the AMPs overlapped by the EMBA (see **Table 4-18**).

The marine park management plans did note across the various AMPs that Yamatji Marlpa Aboriginal Corporation (YMAC), Kimberley Land Council (KLC), South West Aboriginal Land and Sea Council (SWALSC) are the relevant Native Title Representative Bodies or Native Title Service Providers. YMAC and KLC were requested to identify Traditional Custodians who may hold knowledge of heritage values or cultural features. SWALSC ceased to be a Native Title Service Provider in 2021 (SWALSC, 2023), and Woodside consults with relevant Regional Corporations formed under the South West Native Title Settlement (see **Appendix F**).

Table 4-18: Summary marine park management plans relevant to the Operational Area and environment that may be affected

Marine Park Management Plan	Operational Area Overlap	EMBA Overlap	Specified Bodies
Commonwealth Marine Park Management Plan			
Abrolhos AMP	No	Yes	No identifiable body specified
Argo-Rowley Terrace AMP	No	Yes	No identifiable body specified
Ashmore Reef AMP	No	Yes	No identifiable body specified
Carnarvon Canyon AMP	No	Yes	No identifiable body specified
Cartier Island AMP	No	Yes	No identifiable body specified
Christmas Island AMP	No	Yes	No management plan
Cocos (Keeling) Islands AMP	No	Yes	No management plan
Dampier AMP	No	Yes	NAC, Yindjibarndi Aboriginal Corporation
Eighty Mile Beach AMP	No	Yes	Karajarri Traditional Lands Association, Nyangumarta Karajarri Aboriginal Corporation, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation
Gascoyne AMP	No	Yes	No identifiable body specified
Geographe AMP	No	Yes	No identifiable body specified
Jurien AMP	No	Yes	No identifiable body specified
Kimberley AMP	No	Yes	Wunambal Gaambera Aboriginal Corporation, Bardi and Jawi Niimidiman Aboriginal Corporation

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Marine Park Management Plan	Operational Area Overlap	EMBA Overlap	Specified Bodies
Mermaid Reef AMP	No	Yes	No identifiable body specified
Montebello AMP	No	Yes	No identifiable body specified
Ningaloo AMP	No	Yes	No identifiable body specified
Perth Canyon AMP	No	Yes	No identifiable body specified
Roebuck AMP	No	Yes	Yawuru Native Title Holders Aboriginal Corporation
Shark Bay AMP	No	Yes	No identifiable body specified
South-west Corner AMP	No	Yes	No identifiable body specified
Two Rocks AMP	No	Yes	No identifiable body specified
State Marine Park Management Plan			
Barrow Island Marine Park	No	Yes	No identifiable body specified
Eighty Mile Beach Marine Park	No	Yes	Karajarri Traditional Lands Association, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation and Nyangumarta Karajarri Aboriginal Corporation
Jurien Bay Marine Park	No	Yes	Yued Aboriginal Corporation (as the "Yued clan native title claim")
Lalang-garram/Camden Sound Marine Park	No	Yes	Dambimangari Aboriginal Corporation
Lalang-garram/Horizontal Falls Marine Park	No	Yes	Dambimangari Aboriginal Corporation
Marmion Marine Park	No	Yes	No identifiable body specified
Montebello Islands Marine Park	No	Yes	No identifiable body specified
Ngari Capes Marine Park	No	Yes	Karri Karrak Aboriginal Corporation (as the "South West Boojarah Working Party")
Ningaloo Marine Park	No	Yes	NTGAC
North Kimberley Marine Park	No	Yes	Wunambal Gaambera Aboriginal Corporation, Balangarra Aboriginal Corporation, Wilinggin Aboriginal Corporation, Yawoorroong Miriwoong Gajirrawoong Yirrageb Noong Dawang Aboriginal Corporation
North Lalang-garram Marine Park	No	Yes	Dambimangari Aboriginal Corporation
Rowley Shoals Marine Park	No	Yes	No identifiable body specified
Shark Bay Marine Park	No	Yes	No identifiable body specified
Shoalwater Islands Marine Park	No	Yes	No identifiable body specified
Yawuru Nagulagun/Roebuck Bay Marine Park	No	Yes	Yawuru Registered Native Title Body Corporate

4.9.5 Sea Country Values

'Sea Country' can be defined as the area of sea over which a First Nations group has interests, cultural value, connection and use. It has been noted that "the saltwater peoples of the north-west are associated with discrete clan estates or tribal areas, often referred to in contemporary Aboriginal English as 'saltwater country' or 'sea country'. 'Country' refers to more than just a geographical area:

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it is shorthand for all the values, places, resources, stories and cultural obligations associated with that geographical area.” (Smyth, 2007). “Sea country is valued for Indigenous cultural identity, health and wellbeing” (DNP, 2018b). Cultural identity is understood to refer to the fact that “essence of being a 'Saltwater' person is ontological rather than merely technological. That is, it is about how people relate spiritually to the sea and engage with spiritual forces that created it, the marine flora and fauna and people” (McDonald and Phillips, 2021).

In terms of seascape extent, McNiven (2004) suggests that “for those mainland groups whose exploitation of the sea was limited to littoral resources, it is likely that seascapes extended no more than c. 20 to 30 km out to sea, out to the horizon and the limit of human visibility. However, in some coastal places, clouds that can be seen well over 100 km out to sea are imbued with spiritual significance. For those groups with elaborate canoe technology, seascapes extend well over the horizon.” While there is some evidence of traditional watercraft in Australia’s North West, the recorded evidence is limited to travel across inland rivers (e.g. Barber and Jackson, 2011) or travel between coastal islands (Paterson et al., 2019).

Woodside recognises the potential for marine ecosystems to include cultural features as well as environmental values. The link between environmental protection and cultural heritage protection is illustrated in the Australian Government’s Indigenous Protected Areas Program. The Indigenous Protected Areas program provides for “areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation...IPAs deliver environmental benefits...Managing IPAs also helps Indigenous communities protect the cultural values of their Country for future generations...” (DCCEEW, 2023). This intrinsic link concept is also described by MAC (2021) as it relates to the values of the marine environment that are of cultural importance to MAC based on engagement with their Elders and Murujuga Land and Sea Unit Rangers. Elders were clear that all living things in Mermaid Sound are connected and that Mermaid Sound and Dampier Archipelago (Murujuga) are considered one place where the entire environment and all ecosystems hold both cultural and environmental value, with these types of values (cultural and environmental) intrinsically linked (MAC, 2021 as cited in Woodside, 2023a).

Cultural features of coastal areas may include marine species that may travel many thousands of kilometres through areas with similar cultural values to multiple First Nations language groups. Some species may travel as far as 5000 km from Antarctica to the Kimberley region of Western Australia (Double et al., 2010, 2012), passing First Nations language groups along the entire west coast of Australia. Distribution and migratory patterns of migratory species are described in **Section 4.6**.

Sea Country values have been defined through desktop assessment of Sea Country values from publicly available sources and consultation with First Nations groups and individuals.

The process for identifying First Nations groups who may have interests and connection in Sea Country are set out in **Section 5**. The scope of advice Traditional Custodians were encouraged to provide through project consultation was not limited by reference to any particular boundaries or limits of Sea Country.

4.9.6 Desktop Assessment of Sea Country Values

4.9.6.1 *Cultural Features and Heritage Values Identified in Publicly Available Literature*

Publicly available sources were assessed for any records of previously identified Sea Country values or cultural features that may overlap with the EMBA or Operational Area. Where cultural features or Sea Country values were identified these are summarised in **Table 4-20** according to the First Nations groups (where identified or inferable) who hold these values. Documents reviewed included Healthy Country Plans; a number of these plans across the Kimberley mention concerns regarding ecological impacts of petroleum activities, particularly in relation to unplanned hydrocarbon releases. Except where specific references are made to cultural values, these are considered to be addressed through the management of environmental values and are not summarised in this section.

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Table 4-19: Cultural features and heritage values identified in publicly available literature

First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Balanggarra	Feature: Resources including black bream (amalat), another fish that looks like black bream (goongomari), cat fish, barramundi, wungalbut (rifle fish), turtle.	Balanggarra Aboriginal Corporation Registered Native Title Body Corporate v Valperlon Bulk Commodities Pty Ltd and Another [2014] NNTTA 113	No	Possible
Bardi and Jawi	Feature: The offspring of Bardi and Jawi men inhabit the phenomenal world as incarnations of pre-existent spirit beings called ray or raya which live in specific locations throughout Bardi and Jawi territory including waterholes, springs, trees and rocks on the land or in the sea.	Sampi on behalf of the Bardi and Jawi People v State of Western Australia [2010] FCAFC 26	No	Possible (unspecified)
	Feature: Mythologically important places.		Possible (unspecified)	Possible (unspecified)
	Feature: Resources including dugong, turtle and trochus shell.		No	Possible
	Value: Activities of mythological beings in the sea area.		Possible (unspecified)	Possible (unspecified)
	Value: Traditional knowledge of the sea and the features within.		Possible (unspecified)	Possible (unspecified)
	Value: The lands and seas and cultural forms and practices making up the body of customary law were created and bequeathed via generations of human forebears by supernatural beings, inamunonjin, who had occupied and/or traversed the Dampier Peninsula-Buccaneer Archipelago region prior to direct human experience of the world.			Possible (unspecified)
	Value: The inamunonjin shaped features of the physical environment and imbued them with their eternal numinal essence. They named sites and set the boundaries of traditional territories and introduced the religious resources such as songs, dances, designs, objects, myths and rituals through which their activities would continue to be celebrated and affirmed. They instituted the basic rules of customs regulating social order.		No	Possible (unspecified)
Value: The offspring of Bardi and Jawi men inhabit the phenomenal world as incarnations of pre-existent spirit beings called ray or raya which live in specific locations throughout Bardi and Jawi territory including waterholes, springs, trees and rocks on the land or in the sea.	No	Possible (unspecified)		

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: Access to the sea around the coast of the mainland of the Dampier Peninsula and among the islands for hunting and fishing.		No	Possible
	Value: Access to the sea around the coast of the mainland of the Dampier Peninsula and among the islands for travelling.		No	Possible
	Value: Nobody may access Alarm Shoals as this includes a very significant sacred site and is a very dangerous spiritual place.		No	Possible
	Value: Lalariny, a rock feature in the vicinity of Thomas Bay, has a close association with a particular spiritual being and "nobody should go there"; people who do may be afflicted by a form of physical discomfort.		No	Possible
	Interest: Environmental characteristics of the sea.		Possible (unspecified)	Possible (unspecified)
Gnulli (Baiyungu, Thalanyji, Yinggarda)	Feature: Resources including marine animals. Value: Traditional knowledge holds that ancestors live on the land and in the water. Therefore, people have obligations to access and care for these places (e.g. keeping them clean).	Peck on behalf of the Gnulli Native Title Claim Group v State of Western Australia [2019] FCA 2090	Possible (unspecified)	Possible (unspecified)
	Feature: Resources including mangrove crabs, gastropods, shellfish, dugong, turtle).	Morse 1993	Possible (turtle; Table 4-6) No (other resources)	Possible (turtle; Table 4-6) No (other resources)
Jabirr Jabirr and Ngumbarl	Feature: Dreaming stories relating to inland areas associated with the headwaters of creeks running west through Jabirr Jabirr country.	National Native Title Tribunal. Registration Test Decision. Rita Augustine & Ors v State of Western Australia (Jabirr Jabirr). NNTT number WC2013/007	No	No
	Feature: During Bugarrlgarra (the Dreaming), a snake travelled from Nurrugun (Carnot Bay) in Jabirr Jabirr country down to Ngumbarl country and across into Yawuru country. When this snake crossed Willie Creek, he changed his name and his kinship group ("skin").		No,	Possible
	Value: Sites along the coast point to protracted economic and spiritual use of the land and include artefact scatters, middens, burials and/or ceremonial sites, sites of mythological and historical significance, fish traps and gender-restricted sites.		No	Possible (unspecified)
	Value: Coastal areas used for hunting, fishing and camping.		No	Possible (unspecified)
	Value: Traditional knowledge of the 'changes in seasons which rests on the relationships between the living things within a particular area'.		No	Possible (unspecified)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Kariyarra	Value: Traditional knowledge recalls that a salt water serpent lives in the sea and brings fish to shore.	Zaunmayr, 2016	Possible (unspecified)	Possible (unspecified)
Malgana	Feature: Resources including bobtail, long-tail, kangaroo, emu, pinkgrey galah, mull-hawk, bird eggs (shags [cormorants], seagull, divers), turtle eggs, dugongs, turtle, mullet, bluebone, whiting, snapper, oysters, mussels, crabs, prawns, scallops, cockles, little 'redies', black snapper and mallee fowl.	Oxenham on behalf of the Malgana People v State of Western Australia [2018] FCA 1929	Possible (unspecified)	Possible (unspecified)
	Value: Access to Country.		No	Possible (unspecified)
	Feature: Resources including dugong, green and loggerhead turtles and sharks.	Statton et al., 2021	Possible (unspecified)	Possible (unspecified)
	Value: Traditional knowledge maintains records of freshwater seeps in the submerged landscape.		Possible (unspecified)	Possible (unspecified)
	Feature: Resources including fish, shellfish, turtles and dugong.	Briggs and Green, 2008	Possible (unspecified)	Possible (unspecified)
	Feature: Archaeological sites.		No	Possible
	Feature: Green sea turtles, dugongs, shags and bottlenose dolphins are species of cultural significance.	Malgana Land and Sea Management et al., 2021	No	Possible
Value: Sharing and controlling the sharing of knowledge.	Lyons et al., 2021	Possible (unspecified)	Possible (unspecified)	
Mayala	Feature: Resources including turtle and dugong, stone at Yalun or Cone Bay, gulngarriny or yams and madilang tubers at Long, Mermaid, Pascoe and other islands, trochus, clams, oysters, fish and sugarbag (native honey).	Mayala #2 registration decision NNTT File No WC2018/020-1	No (stone)	Possible (stone)
	Feature: Spiritual beings [term withheld] live on the islands who have a role in protecting country and to whom visitors must introduce themselves.		No	Possible
	Value: Right to access, utilise and speak for buru or dambi (sea/land estates).		No	Possible
	Value: Caring for Country in buru or dambi 'corresponding duty to protect their country, particularly its spiritual aspects and environmental health; and to protect strangers from its spiritual dangers'.		No	Possible
	Value: Access to country through numurr or 'saltwater highways'.		No	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: Shells are sold overseas for profit.		No	Possible
	Value: Access to/travel between islands.		No	Possible
	Value: Access to "the deep sea" among the islands.		No	Possible
	Value: Access to Brue Reef as a source of trochus, fish and turtle.		No	Possible
	Value: Continuation of traditional Law.		Possible	Possible
	Value: Caring for Country to "make sure that our country isn't ruined in any way".		No	Possible
	Value: Passing on traditional knowledge including collecting aarlngir or trochus.		No	Possible (unspecified)
Miriuwung and Gajerrong	Feature: Resources including food, medicinal plants, wild tobacco, timber, stone, resin and natural water.	Attorney-General of the Northern Territory v Ward [2003] FCAFC 283	Possible (migratory food sources – unspecified) No (other)	Possible (unspecified)
	Value: Access to Country to access resources.		No	Possible (unspecified)
	Value: Hunting, fishing and gathering the natural resources.		Possible (unspecified)	Possible (unspecified)
	Value: Access to Country for ceremonial and religious purposes.		No	Possible (unspecified)
	Value: Caring for Country including protection of sacred sites.		Possible (unspecified)	Possible (unspecified)
Nanda	Value: Access to Country resulting in physical and mental health.	Drury on behalf of the Nanda People v State of Western Australia [2018] FCA 1849	No	Possible (unspecified)
	Value: Water serpents must not be disturbed in pools.		No	No
	Value: Traditional knowledge recalls that a water serpent swam down the Murchison River towards the sound of the ocean's waves and created a tunnel to the sea. Scared by the waves, the serpent swam back up the Murchison.	Kalbarri Visitor Centre, 2023	No	No
	Value: Traditional knowledge recalls that the turtle used to live on the land, but became trapped in the sea due to its greed for berries in the water.	Capewell, 2020	Possible	Possible
	Value: Traditional knowledge recalls that creation ancestors danced at the mouth of the river at Kalbarri and established the Law.	Murdock, 2010	No	Possible (unspecified)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Ngarla-Ngarli (Mardudhunera, Ngarluma, Wong-Goo-Ti-Oo, Yaburara and/or Yindjibarndi)	Feature: Archaeological sites on Murujuga. Feature: Ceremonial sites. Feature: Dreaming sites.	Department of the Environment and Heritage, 2006	No No Possible (unspecified)	Possible (submerged) No Possible (unspecified)
	Value: Traditional knowledge recalls that the sea is a source of creation for flying foxes. Value: Petroglyphs are understood as permanent signs left by ancestral beings. Value: Petroglyphs depict the law. Value: Cultural obligations to look after places of special potency.	DEC, 2013	Possible (unspecified) No No Possible (unspecified) – unlikely given distance offshore No	Possible (unspecified) Possible (submerged) Possible (submerged) Possible (unspecified) – unlikely given distance offshore Possible (submerged)
	Value: The sea is acknowledged as a starting point for songlines, including the flying fox songline.	MAC, 2023a	Possible (unspecified)	Possible (unspecified)
	Feature: Resources including fishes, turtles and dugong. Value: Traditional knowledge recalls a sea serpent which travelled from the coast to inland pools.	Water Corporation, 2019	Possible (turtle; Table 4-6) Possible (fish and Dugongs) Possible (unspecified)	Possible (turtle; Table 4-6) Possible (fish and Dugong) Possible (unspecified)
	Value: Traditional knowledge recalls a water serpent from the ocean now lives in an inland pool. He created many sites and punishes law breakers. Value: In a separate account, a sea serpent punishing people was driven back to the sea by a freshwater serpent.	Barber and Jackson, 2011	Possible (unspecified) Possible (unspecified)	Possible (unspecified) Possible (unspecified)
	Value: Traditional knowledge recalls Manggan created the seas.	NAC n.d.	Yes	Yes
	Value: Traditional knowledge recalls Pannawonica Hill being carried from the sea near Barrow Island or Murujuga by a spirit bird.	Hook et al., 2004	Possible (unspecified)	Likely
	Value: Traditional knowledge recalls Murujuga is where ancestral beings emerged from the sea and brought the Law.	Australian Heritage Council, 2012	Possible (unspecified)	Possible (unspecified)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Feature: Submerged First Nations archaeological sites in Cape Bruguieres channel.	Benjamin et al., 2020	No	Possible
	Feature: Submerged First Nations archaeological sites in Flying Foam Passage.		No	No
	Feature: Submerged First Nations archaeological sites in Cape Bruguieres channel.	Benjamin et al., 2023	No	Possible
	Feature: Submerged First Nations archaeological sites in Flying Foam Passage.		No	No
	Value: Traditional knowledge recalls Maarga (creation ancestors) lifted the land and sky out of the ocean.	Milroy and Revell, 2013	Possible (unspecified)	Possible (unspecified)
	Value: Traditional knowledge recalls Maarga (creation ancestors) lifted the land and sky out of the ocean.	Japingka Aboriginal Art Gallery, 2023	Possible (unspecified)	Possible (unspecified)
	Feature: Submerged waterholes related to the Kangaroo songline.	Kearney et al., 2023	No (feature restricted to Ancient Landscape)	Possible
	Value: Traditional knowledge holds that Songlines continue beyond the current coast and across the submerged landscape.		No	Possible (unspecified)
	Value: Songlines are captured through storytelling, rock art, songs and dance, and in the landmarks themselves.	Bainger, 2021	No	Possible
Value: Murujuga is the start of many songlines, including the Seven Sisters.	No		Possible (unspecified)	
Value: Songlines at Murujuga date back to times when the sea-level was lower.	MAC, 2023b	No	Possible (unspecified)	
Feature: Rock art. Feature: Sacred sites.	Weerianna Street Media Production, 2017	No Possible (unspecified)	Possible (submerged) Possible (unspecified)	

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Feature: Resources including fish, turtles. Feature: Fish traps exist throughout the archipelago. Feature: Shell middens exist on coastal margins. Feature: Submerged archaeological sites. Value: Law emerged from the sea and travelled inland.	Leach, 2020	Possible (turtle; Table 4-6) Possible (fish) No No No (feature restricted to Ancient Landscape) Possible (unspecified)	Possible (turtle; Table 4-6) Possible (fish) Possible Possible Possible Possible (unspecified)
	Feature: Archaeological sites on Murujuga.	McDonald, 2023	No	Possible (submerged)
	Feature: Archaeological sites on Murujuga.	McDonald, 2015	No	Possible (submerged)
	Feature: Archaeological sites on Enderby Island.	McDonald et al., 2022a	No	No
	Feature: Archaeological sites on Rosemary Island.	McDonald et al., 2022b	No	No
	Feature: Petroglyphs on Murujuga.	Mulvaney, 2015	No	Possible (submerged)
	Feature: Resources including mangrove seeds, turtles, turtle eggs). Value: It is recalled that ceremonies were conducted on islands.	Smyth, 2007	Possible (turtle; Table 4-6) No (other resources) No (onshore)	Possible (turtle; Table 4-6) No (other resources) No (onshore)
	Feature: Petroglyph and other archaeological sites at Murujuga.	Dortch et al., 2019	No	Possible (submerged)
	Ngarla	Value: Traditional knowledge recalls that Solitary Island is the petrified form of the ancestral octopus Marnmulkura.	Wanparta Aboriginal Corporation, 2022	No
Value: People access waters.		Brown (on behalf of the Ngarla People) v State of Western Australia, [2007] FCA 1025	Possible (unspecified)	Possible (unspecified)
Value: Use the waters for subsistence.			Possible	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Nimanburr	Feature: Places of cultural importance, including Yarp, Flora, Dora Springs, Jinardi (Turtle Point), Repulsive Point. Piridi, Patterson, Milli Milli Lakes, Common Ground at Bungaduk and top of Milli Milli, Lake Louisa, Valentine Island, Tower Hill, Reserve Hill, Bobbie's Creek, La Djardarr Bay and Old Mission, and Ladogen Pool.	Marshall. M. (2020) Living Heritage: Protecting the Aboriginal Cultural Heritage of the Dampier Peninsula for all. Western Australian Department of Planning Lands and Heritage (DPLH)	No	Yes (to extent of HAT)
	Value: Valentine Island is a culturally significant site for Nimanburr people. Only Traditional Owners and community members should be going to this island as there are concerns for the cultural integrity of the site and the cultural safety of the unauthorised visitors.		No	Yes
Nyangumarta and Karajarri	Feature: Resources including Pirrala (Threadfin Salmon), Ulu (Bluebone Groper), Yilany (Mangrove Jack), Wangkaja (Mudcrab), Janga (Oyster) and Riji/Jakuli (Pearl Shell) which has important cultural and ceremonial value. Karajarri coastal waters contain great numbers of wild pearl shell.	Karajarri Traditional Lands Association (2014) Karajarri Healthy Country Plan 2013–2023: Palanapayana Tukjana Ngurra'Everybody looking after country properly'	No	Possible
	Feature: Saltwater habitats, including Wintirri (sandy beaches, dunes and cliffs), Wangku (rocky headlands), Puntu (intertidal mudflats/freshwater seepages), Parnany (reefs) and Wankurru (deep sea), hold cultural importance.		No	Possible
	Value: Saltwater habitats, including Wintirri (sandy beaches, dunes and cliffs), Wangku (rocky headlands), Puntu (intertidal mudflats/freshwater seepages), Parnany (reefs) and Wankurru (deep sea), provide resources including food resources. An integral part of keeping people healthy on country and maintaining elements of traditional lifestyle is the sustainable harvesting of food resources from Jurrar (coastal country).		No	Possible
	Value: Management of access to coastal areas prevents degradation to landscapes, cultural sites and biodiversity values.		No	Possible
	Value: There is a desire to educate visitors and inform them of the importance of coastal areas.		No	Possible
	Value: Beaches, tidal creeks, bays, reefs and sea-grass beds are breeding and feeding grounds for threatened and migratory sea turtle species such as the Olive Ridley, Hawksbill Turtle, Loggerhead Turtle and Green Turtle. Dugongs and Snubfin Dolphin inhabit the near-shore areas.		Possible	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: Caring for Country including maintaining cultural sites in coastal and inland areas such as fish traps, Ceremonial Increase sites, ceremonial areas and Pulany (mythical Serpent) sites.		No	Possible
	Value: The Wirntirri (sea grass beds) and beaches are important environments for Wilarr (particularly flatback and green turtles).		No	Possible
	Value: Areas of Parnany (reef), Wirntirri (sea grass) and Wurrja (seaweed) along the Karajarri coastline provide important habitats for fish and other marine species that contribute to the diet of Karajarri people.		No	Possible
	Value: Fishtraps and middens along the Karajarri coast show the historic cultural importance of saltwater resources.		No	Possible
	Value: Fishtraps are still in use today and require ongoing maintenance.		No	Possible
	Value: Karajarri want their protocols on country followed by visitors so that their laws and customs are respected. Without respecting what Karajarri want on their country visitors are believed to be putting their own health and that of traditional owners at risk.		No	Possible
	Value: The Kuwaiyinjiala ritual involves spraying spring water from the mouth to cautiously introduce oneself to the Pulany (mythical watersnakes) which reside in springs and Jilas.		No	No
	Value: When deemed necessary, Pirrka (Lawmen) or Yiliwirri (rainmakers) are able to interact with Pulany, some of which are considered 'cheeky' or dangerous, particularly to children, and unpredictable.		No	No
Nyul Nyul	Value: Tjukurrpa (dreaming) story of the bilby travelling from the desert to the sea.	Indigenous Desert Alliance. n.d.	No	Possible (unlikely as predominantly a terrestrial story)
	Feature: Middens near the coast.	Dobbs, R.J., Davies C., Pettit, N., Pusey, B. Walker, Mon s. and Tingle, F. (2015). Nyul Nyul Freshwater Management and	No	Possible (unlikely to survive in intertidal areas)
	Feature: Burial grounds near the coast.		No	Possible (unlikely to survive in intertidal areas)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Feature: Weedong, a large coastal lake located immediately behind sand dunes.	Monitoring Plan. Darwin: Charles Darwin University	No	No
	Feature: Boolamon is a coastal lake-like waterhole located south-west of Bobbis Creek.		No	No
	Value: Access to Weedong for hunting animals including cattle, ducks, goanna, nimunburr (Black flying fox) and Jibalgurr (Little friarbird) and gathering Wirdamunga (Waterlily) for food.		No	No
	Value: Trees (including Garnboorr/Paperbark and Lardik) surrounding Weedong attract animal species hunted as food.		No	No
	Value: Trees (including Garnboorr/Paperbark and Lardik) surrounding Weedong and provide indicators of important seasonal events.		No	No
	Value: Women's sites at Weedong.		No	Possible (unlikely as likely to be terrestrial)
	Value: Water flow on Dampier Peninsula for fish movements.		No	No (onshore)
	Value: Caring for Country including preserving routes for fish movement for breeding, and erecting signs.		No	No (onshore)
Thalanyji	Feature: Resources including fish, shellfish, crabs, crustaceans, sea urchins, turtle, dugong and flora and fauna associated with mangrove communities. Feature: Archaeological sites on Barrow Island. Value: Connection to Country.	Commonwealth of Australia, 2002	Possible (turtle; Table 4-6) Possible (fish) No (dugongs, other resources) No (onshore) Possible (unspecified)	Possible (turtle; Table 4-6) Possible (fish, dugongs, other resources) No (onshore) Possible (unspecified)
	Feature: Resources include turtles, eggs, fish, shellfish and plants.	DBCA et al., 2002	Possible (turtle; Table 4-6) Possible (fish) No (other resources)	Possible (turtle; Table 4-6) Possible (fish) No (other resources)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: Traditional knowledge recalls a water snake is located in inland waters.	Hayes on behalf of the Thalanyji People v State of Western Australia [2008] FCA 1487	No (inland waters)	No (inland waters)
	Value: Connection to Country. Value: Transfer of knowledge. Value: Access to Country.	DBCA, 2022	Possible (unspecified) Possible (unspecified) Possible (unspecified)	Possible (unspecified) Possible (unspecified) Possible (unspecified)
	Value: Access to Barrow and possibly Montebello Islands.	Hook et al., 2004	No	Possible
	Feature: Artefact scatters are located in coastal sand dunes. Feature: Burials are located in coastal sand dunes. Value: Traditional knowledge recalls a water snake is located in inland waters.	Hook, 2020	No No No	Possible (shoreline accumulation areas) Possible (shoreline accumulation areas) No
	Feature: Archaeological sites are located on Barrow Island.	Ditchfield et al., 2018	No	Possible (shoreline accumulation areas)
	Feature: Thalu ceremonial sites for the increase of turtle, shark, ray, fish, squid, octopus, hill kangaroo and emu. Feature: Ceremonies. Value: Connection to Country. Value: Transfer of knowledge. Value: Access to Country.	DBCA, 2022	No No Possible Possible Possible	No (ceremonial use) Possible (submerged thalu sites; e.g. petroglyphs) No Possible Possible Possible
	Feature: Archaeological sites are located at Barrow and Montebello Islands. Feature: Archaeological evidence of the use of resources including fish, turtles, marine mammals, crocodiles, crabs and sea urchins.	Dortch et al., 2019	No No	Possible (shoreline accumulation areas) Possible (submerged, highly unlikely for most evidence of faunal use to survive inundation)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Feature: Archaeological sites are located on Barrow Island.	Paterson, 2017	No	Possible (shoreline accumulation areas)
Wanjina Wunggur Community (Ngarinyin people, Worrorra people, Wunambal Gaambera people)	Feature: Hawksbill turtle nests.	Wanjina-Wunggur (Native Title) Aboriginal Corporation RNTBC v Argyle Corridor Resources Pty Ltd and Another [2020] NNTTA 26	No	Possible
	Feature: Turtle and turtle eggs.		No	Possible
	Feature: Fish traps.		No	Possible
	Feature: Ochre.		No	Possible (likely based on description)
	Feature: Reef sites and fish traps at Maret Island.		No	Likely
	Value: Red ochre (JaaJaa) deposits on the Maret Islands are 'the main source for red ochre in Wunambal Gaambera country' and is 'highly prized' because it 'is greasy and of high quality'. South Maret Island also has ochre (its name Ngalunii means 'place of red ochre'). used 'in different aspects of both men's and women's law' including 'in preparation of body paints for ceremonies' and 'refreshing Wanjina in art galleries'.		No	Possible (likely based on description)
	Value: The Maret Islands and Berthier Island are part of Wuyurru country. The creator being for Wuyurru country lives on a named island, which is approximately 10 km from the Maret Islands The creator being created the islands in Wuyurru country The creator being 'oversees, manages and controls all of Wuyurru saltwater country'.		No	Yes
	Value: Access to and preservation of resources and sites.		No	Yes
	Value: Access to red ochre deposits used in trade, painting, cultural exchange and songs.		No	Possible (likely based on description)
Value: The carrying on of wunan (exchange) of jaajaal is carried out extensively across the Maret Islands.	No	Possible		
Value: Caring for Country including protection of the home of the creator being.	No	Possible (unspecified)		

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Yamatji	Feature: Resources including shellfish, crayfish, periwinkles (sea snail), crayfish, abalone, Octopus, bigurda (hill kangaroo).	Taylor on behalf of the Yamatji Nation Claim v State of Western Australia [2020] FCA 42	No	Possible
	Feature: Bimara is the mythological snake, which is associated with parts of the Irwin River, including a spring at Depot Hill, Noondemarra Pool to the west of the Mullewa, Greys Beach in Geraldton and Ellendale Pool to the south-east of Geraldton.		No	Possible
	Feature: One Bimara site is a soak near Greys Beach which had good water.		No	Possible
	Value: Traditional rules and practices on Country (possibly including Sea Country) include site avoidance, totemic and mythological knowledge, beliefs in the water serpent and spirit beings, ancestral spirits, sanctions for damage to or disregard of Country, protocols when visiting sites such as water holes and the belief in the bimara "complex"		No	Possible
	Value: Traditional knowledge includes catching crayfish by stabbing them with a wooden spear or grabbing them by hand. "To make the spear, you'd have rubber tied around your hand, and a hook on the end or a piece of wire, hold the spear and let go. Was called a Hawaiian spear."		No	Possible
	Value: Traditional knowledge includes caring for Country at the river. "The older people used to clean the water out to clean the river." River gum trees would be cut to make wanna (digging sticks) to dig out the mouth of the river so that it could flow into the ocean.		No	No
	Value: Access to Country for hunting and fishing.		No	Possible
	Value: Beachlands [and Geraldton] Reef is a source of food resources including periwinkles and bullrush roots.		No	Yes
Yawuru	Feature: Resources including bluebone, molluscs, fish, crustaceans, oysters, birrga-birrga (cockles), mulj (periwinkle), njiwa (green crab), umung-umung (hermit crab).	Yawuru RNTBC (2014) Yawuru Indigenous Protected Area. Walyjalajala nagulagabu birrangun buru. Plan of Management 2016 – 2026.	No	Possible
	Feature: Camp sites including middens and shells.		No	Possible (unlikely to survive in intertidal zone)
	Feature: Snubfin dolphin, fish including sharks and rays, and migratory birds.		No	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: Yawuru country is a living cultural landscape.		No	Possible (unspecified)
	Value: The right to enjoy Yawuru country and to maintain customary practices.		No	Possible
	Value: Yawuru are responsible for looking after Yawuru country.		No	Possible
	Value: Yawuru traditional ecological knowledge is the foundation for ecologically sustainable resource management.		No	Possible
	Value: Traditional knowledge allows people to "read the sea" and determine when it is a good day for collecting a resource.		No	Possible
	Value: Ceremony involving song and corroboree would increase populations of fish, oysters and grubs.		No (Species) No (onshore ceremony)	Possible (Species) No (onshore ceremony)
	Value: Reefs and sea-grass beds provide habitats for dugong and sea turtle species including hawksbill turtle, loggerhead turtle, green turtle and flatback turtle.		No	Possible
	Value: Monsoon vine is a culturally important source of bush food, materials and medicine.		No	Possible
	Value: Mangrove communities provide nursery grounds for culturally important fish and crab species, roosting and feeding sites for megabat and microbat populations, and important habitat for numerous bird species.		No	Possible
	Value: Niyamarri (sand dunes) carry many of the stories of our ancestral beings that formed our country, revealed in songlines that cross the Australian continent.		No	Possible
	Value: Sand dunes defend Country from the tidal surges that come with wet season cyclones: "They are also important for cyclone protection, a windbreak for the town".		No	Possible
	Value: Sand dunes at Beacon Hill were filled with middens, artefacts, shells and grinding stones.		No	Possible
	Value: There were three places in the Beacon Hill sand dunes that should never be touched for cultural reasons.		No	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Unspecified	Feature: The ocean can include sacred sites and songlines. Value: People have kin relationships to important animals, plants tides and currents.	Smyth, 2008	Possible (unspecified) Possible (unspecified)	Possible (unspecified) Possible (unspecified)
	Feature: Archaeological sites in submerged landscapes.	Bradshaw, 2021	No (feature restricted to Ancient Landscape)	Possible
	Value: Sea Country has customary law defining ownership and management rights and responsibilities.	Muller, 2008	Possible (unspecified)	Possible (unspecified)
	Value: Knowledge of Sea Country. Value: Connection to Sea Country. Value: Care for Sea Country. Value: The extent of Sea Country is determined by the travels of dreaming ancestors. This is recorded and conveyed through songlines.	Kearney et al., 2023	Possible (unspecified) Possible (unspecified) Possible (unspecified) Possible (unspecified)	Possible (unspecified) Possible (unspecified) Possible (unspecified) Possible (unspecified)
	Feature: Archaeological sites indicate that islands were occupied prior to sea level rise.	DBCA, 2020	No	No
	Value: Sea Country includes values, places, resources, stories and cultural obligations. Value: Activities relating to resources included: <ul style="list-style-type: none"> • dugong hunting • turtle hunting • turtle egg collecting • seabird egg collecting • spearing fish • reef trapping fish • herding fish • line fishing • collecting fish in stone fish traps • poisoning fish • gathering shellfish and other marine resources. 	Smyth, 2007	Possible (unspecified) Possible (unspecified)	Possible (unspecified) Possible (unspecified)

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
	Value: People have kinship relationships with every plant and animal. Value: Certain species, including fish and seafood, must not be eaten during initiation rituals due to their sacredness to the creation being Barrimirndi. Breaking this law may lead to cyclones.	Juluwarlu, 2004	Possible (unspecified) No	Possible (unspecified) No
	Feature: Tangible and intangible heritage. Feature: Archaeological evidence of varied occupation and adaptation. Value: A distinct way of life centred around the use of limited water and coastal resources.	Macfarlane and McConnell, 2017	Possible (unspecified) No (feature restricted to Ancient Landscape) No	Possible (unspecified) Possible (submerged, highly unlikely for most evidence of faunal use to survive inundation) No
Ngarinyin	Value: The rock python/rainbow serpent underlies the entire country and the sea	Willingin Aboriginal Corporation, 2012	Possible (unspecified)	Possible (unspecified)
	Value: Ngarinyin country includes Walcott Inlet and Prince Frederick Harbour.		No	Possible
Yued	Feature: The rainbow serpent formed the islands off Jurien Bay, then created the Nambung River.	NACC NRM, 2021	No	Possible
	Feature: Ospreys are an animal of significance.		Possible	Possible
	Feature: Sacred site at Wedge Island.		No	Possible
Whadjuk	Value: The sea is of great spiritual significance.	Derbal Nara, n.d.	Possible	Possible
	Feature: Significant sites include Carnac Island and Garden Island.		No	Possible
	Value: The spirits of the dead go through the sea to a place far away.		Possible (unspecified)	Possible
	Feature: Nyungar people used all the resources of the coast.		No	Possible
Gnaala Karla Booja	Value: Myths associated with the separation of Rottnest, Garden and Carnac islands from the mainland	Australian Interaction Consultants, 2006	No	Possible
	Value: There are important totemic species along the coast, including mullet and whale.	Ethnoscience, 2020	No (mullet) Possible (whale)	Possible

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First Nations Group	Features and Values	Source	Potential for Overlap	
			Operational Area	EMBA
Karri Karrak	Values: turtles, fish, crustaceans	South West Boorah #2 registration decision NNTT File No WC2006/004	Possible	Possible
	Feature: Wadandi coastal zone (Augusta-Margaret River-Geographe Bay region) has numerous places of cultural significance and subsistence resource sites such as limestone caves, coastal dune systems and waterways. The coastal dunes are believed to be a burial place.	Davies et al., 2022	No	Possible
Wagyl Kaip	Feature: Fish traps at Oyster Harbour	SWALSC, 2024	No	Possible
	Value: Spiritual association with the water and creatures in the water	Scott and Brewster, 2012	Possible (unspecified)	Possible (unspecified)
Esperance Tjaltraak	Feature: Estuaries, islands, sea as part of cultural corridors that are still alive and part of the identity and heritage of the community	Esperance Tjaltraak Native Title Aboriginal Corporation, 2023	Possible	Possible
Mirning	Value: Dreaming stories relating to the sea and the land Feature: Whales are a totemic species Value: The sea is unique and special to the Mirning	Mirning.org, n.d.	Possible (unspecified) Possible	Possible (unspecified) Possible
Ngadju	Feature: People used to travel to the coast near Israelite Bay, or live there all the time, to take advantage of marine foods	O'Conner and Prober, 2010	No	Possible
Larrakia	Feature: Casuarina Coastal Reserve is of cultural importance to the Larrakia people	Parks and Wildlife Commission of the Northern Territory, 2016	No	No
	Feature: Darriba Nungalinya, (Old Man Rock), offshore Casuarina Beach is sacred to the Larrakia people		No	No

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4.9.7 Studies of Cultural Features and Heritage Values

4.9.7.1 First Nations Archaeological Heritage Assessment

Woodside understands communal cultural connection may exist between Traditional Custodians and land and waters. It is understood from the onshore archaeological record that First Nations people have occupied the Australian continent for at least 65,000 years (Clarkson et al., 2017) and in many places maintain a strong continuing connection that is said to extend back in First Nations cosmology to the beginning of time.

It is understood that the sea level has risen significantly during the 65,000 years of First Nations occupation, and areas that were once inhabited are now submerged on the continental shelf (Veth et al., 2019; UWA, 2021). Woodside also understands that, at its lowest level during First Nations occupation, sea level was between 125 m (O’Leary et al., 2020; Veth et al., 2019; Williams et al., 2018) and 130 m below current levels (Benjamin et al., 2020; Benjamin et al., 2023; UWA, 2021). Archaeological material preserved on the Ancient Landscape has the potential to provide further information about the earliest periods of human occupation (Veth et al., 2019; UWA, 2021).

Recent archaeological discoveries demonstrate that the now submerged landscape was occupied and inhabited, and can retain archaeological material from this time (Benjamin et al., 2020; Benjamin et al., 2023; see Ward et al., 2021 for an opposing view).

In recognition of this, Woodside considers the Ancient Landscape between the mainland and the Ancient Coastline KEF (see **Table 4-14**) as an area where potential First Nations archaeological material may exist on the seabed, as this covers the full extent of this possible First Nations occupation. The Operational Area does not overlap the Ancient Landscape; however, the EMBA does.

Known First Nations heritage places including archaeological sites may be protected subject to declarations under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, *Underwater Cultural Heritage Act 2018* or *EPBC Act 1999*. However, these Acts only extend protection to First Nations heritage places specified by declaration or otherwise included on a statutory list. Woodside understands that there is no First Nations archaeology known to exist anywhere within Commonwealth waters, and no areas subject to declarations or prescriptions for First Nations cultural heritage under these Acts are located within the EMBA.

For this EP, a search of DPLH’s Aboriginal Cultural Heritage Inquiry System was undertaken, which showed 315 registered Aboriginal sites in the EMBA.

Where First Nations archaeological material is identified within the EMBA, Woodside will discuss the management of this material with appropriate Traditional Custodian group(s), starting with any adjacent Native Title Body Corporate.

4.9.8 Consultation Feedback to Inform Existing Environment

4.9.8.1 Summary of Values Raised During Consultation

A summary of the topics/interests and values raised by First Nations groups through consultations on this Petroleum Activities Program, or raised in context of other activities are provided in **Table 4-20**. It should be noted that no interests or cultural values were raised specifically in relation to this Petroleum Activities Program, and the information presented in **Table 4-20** was shared during consultation on other Environment Plans.

First Nations cultural values are communally held. This is reflected in Vision 3 of Dhawura Ngilan that “Aboriginal and Torres Strait Islander heritage is managed...according to community ownership” (Heritage Chairs of Australia and New Zealand 2020). Dhawura Ngilan also specifically notes that “Aboriginal and Torres Strait Islander...intangible knowledge systems, which are held in songlines and language, are endangered. This knowledge is held by Elders and the community.” Through

consultation, Registered Native Title Bodies Corporate and nominated representative corporations have identified or raised topics relating to environmental values of cultural interest. Woodside recognises the deep spiritual and cultural connection to the environment⁶ that First Nations people hold.

⁶ Definition of 'Environment' in regulation 5 of the OPPGS (Environment) Regulations are defined as:

- a) ecosystems and their constituent parts, including people and communities
- b) natural and physical resources
- c) the qualities and characteristics of locations, places and areas
- d) the heritage values of places, and includes
- e) the social, economic and cultural features of the matters mentioned in paragraphs (a), (b), (c) and (d).

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Table 4-20: Feedback received via consultation to inform Existing Environment Description

Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
BTAC representing some of the Gnulli native title claimants (Baiyungu and Thalanyji people)	Raised in context of consultation on activities subject to other EPs	Value: Cultural obligation to care for the environmental values of Sea Country. <i>Sea Country extends "out to the vast islands off the coast of the Pilbara, including the Monte Bello Islands, Barrow Island, and the Mackerel Islands".</i>	Possible (unspecified)	Possible (unspecified)
Kariyarra Aboriginal Corporation	Raised in context of consultation across various EPs	Feature: Intangible cultural heritage sites including Yinta (ancestral sites underpinning law and connection to Country).	Possible (highly unlikely due to distance)	Possible (unspecified)
		Feature: coastal landforms.	No	Possible (unspecified)
		Feature: coastal native vegetation.	No	Possible (unspecified)
		Feature: tangible cultural heritage sites.	No (feature restricted to Ancient Landscape)	Possible
		Value: resource collection including fishing; trapping; crabbing; catching turtles, dugong and stingray; and collecting shellfish.	No	Possible
		Value: Access to country including visiting offshore islands at low tide.	No	Possible (unspecified)
		Value: Intergenerational knowledge transfer.	Possible (highly unlikely due to distance)	Possible (unspecified)
		Value: Cultural obligations to care for Country, including Sea Country.	Possible	Possible
		Value: Mermaid Sound – ecosystem health.	No	Possible

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
Murujuga Aboriginal Corporation representing Ngarla-Ngarli people (Mardudhunera, Ngarluma, Wong-Goo-Tt-Oo, Yaburara and Yindjibarndi)	Raised in context of consultation on activities subject to other EPs	Feature: Whale. Value: A whale Thalu is an increase at a totemic site that brings whales into beach. Value: Whales and other species of totemic importance need to be protected, including their populations, biodiversity and migration patterns. Value: Whales are culturally important species that migrate through Mermaid Sound. Humpback whales in particular.	Possible (Table 4-9) Possible (unspecified)	Possible (Table 4-9) Possible (unspecified)
		Feature: Dolphins. Value: There are cultural ceremonies associated with communicating with dolphins.	Possible Possible (unspecified)	Possible Possible (unspecified)
		Feature: Dugongs. Value: Dugongs are a food source associated with seagrasses near Gidley Island.	No No	No No
		Feature: Fish. Value: There are Thalu ceremonies associated with increasing fish stocks.	Possible Possible (unspecified)	Possible Possible (unspecified)
		Feature: Sea snakes. Specifically mentioned as culturally important species.	Possible	Possible
		Feature: Flatback, green, hawksbill, loggerhead and leatherback turtles. Turtles are culturally important species that moves through Mermaid Sound. Turtles are most often seen in shallower areas and where there are seagrasses. Most beaches are nesting sites for turtles, including those on Gidley and Legendre Islands. Value: The songline associated with the turtle comes from Fortescue to Withnell Bay. This song is sung by four or five tribes for day and night without consuming food or water.	Possible (turtles; Section 4.6.2) No No	Possible (turtles; Section 4.6.2) Possible Possible

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
		<p>Interest: Coral. Fish are attracted to areas with coral. Concerned about coral bleaching because corals are important. Beautiful colours. They also attract a lot of other things.</p> <p>Fish carry coral spawn like bees pollinate flowers. If fish were looked after, the corals would get brighter and brighter (by transmitting nutrients and performing other ecosystem services, fish can be symbiotic with corals).</p> <p>Spawning events should be avoided (associated with full moon).</p> <p>Locations identified during consultation include Withnell Bay; Conzinc Bay; south-west of Legendre Island.</p>	No (Section 4.5)	Possible (Section 4.5)
		<p>Feature: Seagrass. Seagrasses provide protection for animals</p> <p>Locations identified during consultation include Conzinc Island; between Angel and Gidley Island.</p>	No (Section 4.5)	Possible (Section 4.5)
		<p>Value: Mangroves would have provided shelter, crabbing, digging for shellfish, could be turtle nurseries.</p> <p>Locations identified during consultation include Conzinc Bay north end; Flying Foam Passage; Searipple Passage; north-east bay of West Lewis Island.</p>	No (Section 4.5)	Possible (Section 4.5)
		<p>Interest: Macroalgal communities, which are important primary production sites, habitats, and food sources (not explicitly identified by elders).</p> <p>Interest: Subtidal soft-bottom communities, which support invertebrate diversity (not explicitly identified by elders).</p> <p>Interest: Intertidal sand and mudflat communities, which are important primary production sites, support invertebrate diversity and provide food for shorebirds (not explicitly identified by elders).</p> <p>Interest: Rocky shores, which are habitats for intertidal organisms and provide food for shorebirds (not explicitly identified by elders).</p>	No (Section 4.5) No (Section 4.5) No No	No (Section 4.5) No (Section 4.5) No No

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
		Feature: Fish traps. There are known fish traps in Conzinc Bay, and others would have or do exist in coastal areas of islands, such as Angel and Gidley Islands. People still use the Conzinc Bay fish traps regularly for catching mangrove jack, trevally and other fish. Value: Squidding (harvesting of squid from the ocean) around Conzinc Island.	No No	No No
Ngarluma Aboriginal Corporation (NAC)	No values raised	-	-	-
Ngarluma Yindjibarndi Foundation Limited (NYFL)	No values raised	-	-	-
Nghanurra Thanardi Garrbu Aboriginal Corporation representing Baiyungu and Thalanyji people	Raised in context of consultation on activities subject to other EPs	Interest: Whales – query regarding noise impacts, monitoring and operational responses to whale sightings.	Possible (Table 4-9)	Possible (Table 4-9)
	Raised in context of decommissioning activities	Interest: Whale sharks – query regarding activity timing. Interest: Marine parks – query regarding risks from activity in relation to decommissioning.	No No	Possible (Table 4-4) Possible (Gascoyne AMP)
Robe River Kuruma Aboriginal Corporation (RRKAC)	Raised in context of consultation on activities subject to other EPs	Feature: Underwater heritage.	No (feature restricted to Ancient Landscape)	Possible
Wirrawandi Aboriginal Corporation representing Ngarda-Ngarli (Mardudhunera and Yaburara)	Raised in context of consultation on activities subject to other EPs	Interest: Whales – query with regard to whale migration and timing of project activities; impact of noise on whale communication. Interest: Turtles – query with regard to turtle monitoring programs. Interest: Underwater heritage – query with regard to where sites have been recently found.	Possible (Section 4.6.3) Possible (Section 4.7) No	Possible (Section 4.6.3) Possible (Section 4.7) Possible
	Raised in context of decommissioning activities	Interest: Rock art – query whether air emissions from activities impacts rock art and controls to minimise potential impacts.	No	No

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
Yamatji Marlpa Aboriginal Corporation (YMAC)	No values raised	-	-	-
Yindjibarndi Aboriginal Corporation	No values raised	-	-	-
Yinggarda Aboriginal Corporation representing Yinggarda People	Raised in context of consultation on activities subject to other EPs	Interest: Whales – query with regard to potential impacts to whale migration patterns and impacts from vessel collision.	Possible (Section 4.6.3)	Possible (Section 4.6.3)
		Value: Shark Bay mullet – important resource.	No (coastal species)	Possible
		Interest: Dugong – raised in context of Shark Bay	No	Possible
		Interest: Seagrass being food source for Dugong	No (Section 4.5)	No (Section 4.5)
Willingin Aboriginal Corporation	No values raised	-	-	-
Gogolayngor Aboriginal Corporation	No values raised	-	-	-
Balangarra Aboriginal Corporation	No values raised	-	-	-
Wunambal Gambera Aboriginal Corporation	No values raised	-	-	-
Dambimangari Aboriginal Corporation	No values raised	-	-	-
Wanjina-Wungurr (Native Title) Aboriginal Corporation	No values raised	-	-	-
Mayala Inninalang Aboriginal Corporation	No values raised	-	-	-
Nyul Nyul PBC Aboriginal Corporation	No values raised	-	-	-

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
Bardi and Jawi Niimidiman Aboriginal Corporation	Raised in context of consultation on this EP	There are values outlined in the Joint Management Plan for the Bardi Jawi Gaarra Marine Park	No	No
Nimanburr Aboriginal Corporation	No values raised	-	-	-
Karajarri Traditional Lands Association	No values raised	-	-	-
Nyangumarta Karajarri Aboriginal Corporation	No values raised	-	-	-
Nyangumarta Warrarn Aboriginal Corporation	No values raised	-	-	-
Wanparta Aboriginal Corporation	Raised in context of consultation on this EP	Water and the ocean are extremely important and they have a responsibility to look after ocean and lore. Bream, octopus, stingray and kestrel are totemic species.	Yes	Yes
Nanda Aboriginal Corporation	No values raised	-	-	-
Malgana Aboriginal Corporation	No values raised	-	-	-
Bundi Yamatji Aboriginal Corporation	No values raised	-	-	-
Yued Aboriginal Corporation	No values raised	-	-	-
Whadjuk Aboriginal Corporation	No values raised	-	-	-
Gnaala Karla Booja Aboriginal Corporation	No values raised	-	-	-
Karri Karrak Aboriginal Corporation	No values raised	-	-	-

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Relevant First Nations Group/ Individuals	Consultation Context	Description of Feature and Value/Interest	Potential for Overlap	
			Operational Area	EMBA
Wagyl Kaip Southern Noongar Aboriginal Corporation	No values raised	-	-	-
Esperance Tjaltjiraak Native Title Aboriginal Corporation	No values raised	-	-	-
Mirning Traditional Lands Aboriginal Corporation	No values raised	-	-	-
Ngadju Native Title Aboriginal Corporation	No values raised	-	-	-
Cocos Malays	No values raised	-	-	-
Kunin (Native Title) Aboriginal Corporation	No values raised	-	-	-
Larrakia Development Corporation	No values raised	-	-	-
Top End (Default) Aboriginal Corporation	No values raised	-	-	-
Daly River/Keats Aboriginal Lands trust	No values raised	-	-	-

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4.9.9 Further Context: Intangible Cultural Heritage

Intangible cultural heritage has been identified through consultation with First Nations people as culturally important. Cultural knowledge, as expressed through songlines, dreaming, dance and other cultural practices, can be associated with tangible objects and physical sites that are culturally important to First Nations people (Adler, 2021; Bursill et al., 2007). Intangible cultural heritage can also be embodied in the practices, representations, expressions, knowledge, uses and skills associated with physical sites (UNESCO, 2003). As a result, physical features may have intangible dimensions (ICOMOS, 2013).

4.9.9.1 Songlines

Oral Songlines are often described by First Nations people as the law of the land and make up part of the Dreaming (Neale and Kelly, 2020:30). Songlines are viewed in Western academia as a framework for relating people to land and consist of a series of invisible, interconnected routes across the landscape that mark significant sites for First Nations people (Higgins, 2021:723). Songlines demonstrate First Nations peoples' strong connections to land by revealing sacred knowledge that is place-specific (Roberts, 2023:5). The land's physical features are instrumental in maintaining songlines because this is how ancestral spirits journeyed through, and interacted with, the physical landscape leaving sacred knowledge behind. The interconnection between the physical and spiritual is where songlines become intrinsically tied to significant places across Country. As a result, geographical landforms are recorded within songlines and become sacred places. Such landforms can include inter alia: rocks, mountains, rivers, caves and hills (Higgins, 2021:724). Songlines can become lost, fragmented or broken when there is a loss of Country or forced removal from Country (Neale and Kelly, 2020:30). Physical sites that have been identified as comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge.

In Australia, songlines can stretch thousands of kilometres, making up a complex and organic network of stories containing cultural knowledge of First Nations communities across the land (Neale and Kelly, 2020:35). Songlines can also extend out to Sea Country and contain cultural knowledge that is tied to geographic features, atmospheric phenomena and marine plants and animals. Often songlines containing references to a seascape or Sea Country make mention of mythical events occurring around marine life, fishing areas, submerged rocks or coral. Songlines that embody seascapes can reflect how a group may relate to, or value, Sea Country; for example. connections to nearby islands that they once inhabited in their songlines (Smyth and Isherwood, 2016:307). Songlines can also be used as proof of long-standing connection to land and support a legal entitlement to land rights (Higgins, 2021:74). Examples where songlines contain strong references to Sea Country are more common in Pacific Islander and Torres Strait Islander communities, who often refer to seascapes and skylines in their songlines in order to communicate sacred knowledge that assists in safe navigation of the ocean (Neale and Kelly, 2020:83-84).

The routes of any songlines in the EMBA have not been provided by Traditional Custodians through consultation.

4.9.9.2 Creation/Dreaming Sites, Sacred Sites and Ancestral Beings

The only sources located by Woodside with detailed descriptions of the location ancestral beings or creation/dreaming/sacred sites placed these on land or within inland water sources such as rivers or pools. However, some ancestral beings are noted to live within or originate from the sea generally, and some creation stories talk to the creation of features from or in the sea. Additionally, every place on shore or at sea must be assumed to have been created on some level in First Nations cosmology.

4.9.9.3 Cultural Obligations to Care for Country

Caring for Country collectively refers to the cultural obligations of individuals and groups, as well as rituals and ceremonies required for the physical and spiritual health of the environment. In the literature reviewed by Woodside, caring for Country was noted to include, but is not limited to, maintenance of the physical environment and ecosystem. It may also have cultural, spiritual and ritual dimensions such as caring for ancestral beings or ensuring cultural safety. Thalu are places where increase ceremonies are performed to enhance or maintain populations of plants, animals or phenomena. All mentions of active ceremonial sites were confined to onshore locations, though the values may extend offshore where, for example, a thalu relates to marine species populations.

4.9.9.4 Knowledge of Country/Customary Law and Transfer of Knowledge

Knowledge of and familiarity with the features of Sea Country is itself a value. The inherent potential for restricted or secret knowledge makes this difficult to assess even through consultation with Traditional Custodians. However, aspects such as limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge. Further, connection to Country may be damaged where people are displaced or disrupted (e.g. during colonisation) or where there is a loss of technical skills or environmental knowledge (McDonald and Phillips, 2021).

Transfer of knowledge includes continuing traditional practices to pass on practical skills. This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).

4.9.9.5 Connection to Country

Connection to Country describes the multi-faceted relationship between First nations people and the landscape, which is envisioned as having personhood and spirit. It is also an aspect of personal identity for many First nations people. In the case of Sea Country this can mean identifying as a Saltwater person, where "essence of being a 'Saltwater' person is ontological... it is about how people relate spiritually to the sea and engage with spiritual forces that created it, the marine flora and fauna and people" (McDonald and Phillips, 2021).

4.9.9.6 Access to Country

Access to Country, including Sea Country, is necessary for the continuation of other values including caring for Country and the transfer of traditional knowledge. Being on Country can be an important way of expressing or maintaining connection to Country (Australian Indigenous HealthInfoNet n.d.). Access is also a value in its own right, as a continuation of traditional Sea Country access and use.

4.9.9.7 Restriction on Access to Country

Some areas of Sea Country identified through the literature review include areas that should not be accessed, or are otherwise subject to access restrictions including requiring ceremonies or being accessed only by people of the correct gender. Failure to comply with these obligations may result in risks to cultural or spiritual safety for those individuals or for Traditional Custodians.

4.9.9.8 Kinship Systems and Totemic Species

Individuals may have kinship to specific species (Smyth, 2008; Juluwarlu, 2004) and/or a responsibility to care for species (Muller, 2008). Kinship arises from totemic associations within First Nations "skin group" systems. It is forbidden for an individual to kill or eat a species who is from the same "skin group" (Juluwarlu, 2004). They may also have certain obligations linked to the discussion of caring for Country below. It is assumed that marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that "skin group" from hunting or eating that same species (Juluwarlu, 2004).

4.9.9.9 Resource Collection

A number of marine species are identified through consultation and literature as important resources, particularly as food sources. In addition to their immediate value as sustenance, the gathering and preparation of these resources are informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations.

4.9.10 Further Context: Marine Ecosystems and Species

4.9.10.1 Marine Mammals

Whales, and in particular humpback whales, have been identified through consultation with First Nations people as culturally important species, with totemic importance including their populations, biodiversity, and migration patterns. Cultural ceremonies associated with communicating with dolphins have also been raised by MAC through consultation.

Whale symbology expressed through stories, music, and dance can reflect a group's connections with the sea, as well as marine fauna, which then comprise a group's cultural values (Ardler, 2023; Bursill et al., 2007; Cressey, 1998). Whales also speak to a broader connection that exists between First Nation people and their surrounding environment. Beyond mythology and symbolism, whales can be connected with various economic and social functions associated with everyday life. Cultural knowledge of whales, whale migration, behaviour and the related marine environment may all be important in ensuring the continuation of these socio-economic functions and other related activities that remain valuable to First Nations people (Fijn, 2021:47).

Details pertaining to whales and dolphins, their distribution, migration patterns and populations are described in **Section 4.6.3**.

4.9.10.2 Marine Reptiles

Turtles and sea snakes have been identified through consultation with First Nations people as culturally important species, with turtles identified as a resource. First Nations people that identify marine reptiles as species of totemic importance or integral to songlines may place high cultural value on their protection. No marine reptiles related songlines have been identified as per **Section 4.9.9** that have the potential to interact with the Operational Area or EMBA. Note the only songline related to marine reptiles (turtles) was shared by MAC, and was geographically restricted from Fortescue to Withnell Bay, in Mermaid Sound (MAC, 2021).

Turtle symbology expressed through stories, music, and dance can reflect an individual or group's connections with the sea, as well as marine fauna, and comprise First Nations' cultural values (Ardler, 2023; Bursill et al., 2007). Beyond mythology and symbolism, turtles can be connected with various economic and social functions associated with everyday life including hunting and settlement location. Turtles speak to a broader connection that exists between First Nation people and their surrounding environment, including cultural values associated with food security (Delisle et al., 2018:250).

Cultural knowledge of turtles at a population level (turtle migration, behaviour and the related marine environment) may all be important in ensuring the continuation of cultural functions and activities that remain valuable to First Nations people (Fijn, 2021:47; Delisle et al., 2018). Details pertaining to marine reptiles, their distribution, and populations are described in **Section 4.6.2**.

4.9.10.3 Fish

Fish have been identified through consultation with First Nations people as a culturally important species, with fish generally being identified as a resource.

First Nations may identify cultural values associated with fish species as important to maintaining both tangible (physical cultural sites) and intangible (cultural knowledge) cultural heritage. Tangible

cultural heritage associated with fish can include important cultural sites such as midden sites, fish traps and thalu sites. Traditional fish traps require traditional knowledge of the surrounding environment and may involve specialised techniques which have been developed in adaptation to location conditions over time (Fijn, 2021:63).

Intangible cultural heritage associated with fish include songlines, dreaming, art, song and dance. Cultural values relating to fish, and other marine fauna, can collectively capture 'Sea Country' which refers to a seascape that Traditional Custodians view, interact with or hold knowledge of. As a result, fish may be culturally value in relationship with broader marine environmental values that are of cultural importance to First Nations people (Smyth, 2007).

Details pertaining to fish, sharks and rays are described in **Section 4.6.1**.

4.9.10.4 Benthic Habitats

Through consultation, First Nations groups identified benthic habitats as valuable for their ecological values, including corals attracting fish and seagrass providing shelters for fauna, as well as an important resource for dugongs. Additionally, coral is valued by MAC for its aesthetic values. Details pertaining to benthic habitats and communities, including their distribution, are described in **Section 4.5**.

4.9.10.5 Shoreline Habitats

Through consultation, First Nations groups identified shoreline habitats as valuable for their ecological values, including coastal vegetation such as mangroves which provide shelter to marine invertebrates, which are identified resources, and potential nursery for turtles. Literature also notes that mangroves are also valued for the flora and fauna they are associated with and support (Commonwealth of Australia 2002) and Smyth (2007) reports that mangrove seeds are used as a resource by Ngarda-Ngarli. Details pertaining to shoreline and coastal habitats, including their distribution, are described in **Section 4.5**.

4.9.10.6 Natural Environment Interests

First Nations people have advised through consultation that they have a general interest in environmental management and ecosystem health, including understanding changes in water quality as a result of the Petroleum Activities Program and potential resultant effects on marine species and benthic communities in the Operational Area and EMBA. This includes marine mammals, marine reptiles, fish, seabirds, plankton and subtidal soft bottom communities, which are described in context of their distribution and populations in **Section 4.6.4**.

4.9.11 Heritage Listed Places

No listed world, national or commonwealth heritage places overlap the Operational Area or EMBA.

A search of the Australasian Underwater Cultural Heritage database, which records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics and other underwater cultural heritage) in Australian waters indicated that there are no underwater heritage sites or shipwrecks within the Operational Area, however there are shipwrecks and other underwater heritage sites within the EMBA. Shipwrecks within 50km of the Operational Area are listed in Table 4-22.

4.10 Socio-cultural Environment

4.10.1 Commercial Fisheries

A number of Commonwealth and State fishery management areas are located within the Operational Area and EMBA. The Annual Fishery Status Reports published by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) were used to identify if Commonwealth managed fisheries that have fished within the Operational Area in the last five years.

FishCube data were also requested from the WA Department of Primary Industries and Regional Development (DPIRD) for the most recently available five-year period of fishery catch and effort data (2018–2022) to analyse the potential for interaction with State managed fisheries within the Operational Area (DPIRD, 2022). Data from FishCube and ABARES was reviewed from the last five years as a subset of past fishing effort. This was deemed an appropriate period to represent potential future fishing effort over the lifecycle of this EP (five years). **Table 4-21** provides an assessment of the potential interaction.

Table 4-21: Commonwealth and State managed commercial fisheries overlapping the Operational Area and/or environment that may be affected

Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Commonwealth Managed Fisheries			
✓ = overlap with fishery; blue shading = possibility for interaction with the Operational Area			
North West Slope Trawl Fishery	✘	✓	The North West Slope Trawl Fishery management area, encompasses waters off north-western Australia from 114°E to 125°E, roughly between the 200 m isobath and the outer boundary of the Australian EEZ, and overlaps the Operational Area and EMBA. Fishery Status Reports indicate less than 6 active vessels were active in the fishery during the 2020–2021 season (ABARES, 2021). Accordingly, Woodside considers it a possibility that interactions with the fishery may occur in the combined EMBA.
Northern Prawn Fishery	✘	✓	The Northern Prawn Fishery overlaps the EMBA, extending from Cape York, across the Gulf of Carpentaria to Cape Londondern, past the border between WA and NT. The majority of the fishing during the 2020-2021 season takes place around the coast of NT (ABARES, 2021). Accordingly, Woodside considers it a possibility that interactions with the fishery may occur in the combined EMBA.
Small Pelagic Fishery	✘	✘	The Small Pelagic extends from the QLD/NSW border around to the 31° south latitude line near Lancelin, Perth. The management area is split into western, eastern and sardine subareas. Fishery Status Reports indicate the maximum area fished between 2020–2021 occurred outside of the EMBA (ABARES, 2021). Accordingly, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Southern and Eastern Scalefish and Shark Fishery (SESSF): Great Australian Bight Trawl Sector	✘	✘	The SESSF: Great Australian Bight Trawl Sector extends along the south coast of WA and SA to Kangaroo Island. Fishery Status Reports indicate the maximum area fished between 2020–2021 occurred outside of the EMBA (ABARES, 2021). Accordingly, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Southern Bluefin Tuna Fishery	✘	✘	The Southern Bluefin Tuna Fishery spans the Australian Fishing Zone. However, since 1992, the majority of Australian catch has concentrated in south-eastern Australia (ABARES, 2021). Accordingly, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Western Deepwater Trawl Fishery	✘	✓	The Western Deepwater Trawl Fishery overlaps the Operational Area and EMBA. The fishery is limited to 11 fishing permits and operates in water deeper than 200 m off the coast of Western Australia from Exmouth to Augusta. Fishery Status Reports indicate most recent activity within the EMBA during the 2020–2021 season (ABARES, 2021). Accordingly, Woodside considers it a possibility that interactions with the fishery may occur in the combined EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Western Skipjack Tuna Fishery	✘	✘	The Western Skipjack Tuna Fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The Fishery is not currently active and no fishing has occurred since 2009 (ABARES, 2021). Accordingly, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Western Tuna and Billfish Fishery	✘	✓	The Western Tuna and Billfish Fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. However, in the last five years (2016–2021), fishing effort has concentrated south of Carnarvon (ABARES, 2021). Accordingly, Woodside considers it a possibility that interaction with this fishery and the Petroleum Activities Program.
Christmas Island Line Fishery	✘	✓	The Christmas Island Line Fishery management area overlaps the EMBA. There have been no reported active vessels for the fishery across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
State Managed Fisheries			
✓ = potential for interaction, blue shading = spatial overlap for EMBA			
Abalone Managed Fishery (Area 3-8)	✘	✓	The Abalone Fishery management area overlaps the EMBA (Area 3-8). The fishery is only active within the EMBA, with 60 NM Catch and Effort System (CAES) block reporting 3 to 15 registered vessels for Greenlip and Brownlip Abalone Fishery. More recently, active vessel numbers were 3 to 10 across the 2021–2022 seasons, (Strain et al., 2023). The Abalone Fishery is primarily based in shallow, coastal waters (<40 m depth) (Strain et al., 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Abrolhos Islands and Mid-West Trawl Managed Fishery	✘	✓	The Abrolhos Islands and Mid-West Trawl Fishery management area overlaps the EMBA. The fishery is only active within the EMBA, with 60 NM CAES block reporting between 3 and 6 vessels across the 2017 to 2022 seasons (Kangas et al., 2023b, with no active vessels in the 2021–2022 financial year. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Broome Prawn Managed Fishery	✘	✓	The Broome Prawn Fishery management area overlaps the EMBA. The fishery is only active within the EMBA, with 60 NM CAES block reporting three active vessels undertaking trial fishing activities to investigate whether catch rates were sufficient for commercial fishing across the 2021–2022 seasons, resulting in negligible landings of western king prawns with no by-product (Kangas et al., 2023a). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Cockburn Sound Managed Fishery	✘ (Crab)	✘	The Cockburn Sound (Crab) Fishery management area overlaps the EMBA. The Cockburn Sound Crab Managed Fishery has been closed since 2014 (Johnston et al., 2020). If the fishery were to resume, Woodside only considers it a possibility that interactions with the fishery would occur only in the EMBA.
	✘ (Fish Net)	✓	The Cockburn Sound (Fish Net) Fishery management area overlaps the EMBA. There have been no reported active vessels for the fishery across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
	x (Line and Pot)	✓	The Cockburn Sound (Line and Pot) Fishery management area overlaps the EMBA. The fishery is only active within the EMBA, with 60 NM CAES block reporting between 6 and 8, consistently active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
	x (Mussel)	x	The Cockburn Sound (Mussel) Fishery management area overlaps the EMBA. There has been no reported catch in the period between 2014–2022 (DPIRD, 2023). If the fishery were to resume, Woodside only considers it a possibility that interactions with the fishery would occur only in the EMBA.
Cocos (Keeling) Islands Marine Aquarium Fish Fishery	x	✓	The Cocos (Keeling Islands Marine Aquarium Fish Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with only 2 people reportedly employed during the 2019–2020 (Newman et al., 2021). The fishery also harvests from shallow, coastal waters between 15 m to 70 m (Newman et al., 2021). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Exmouth Gulf Beach Seine and Mesh Net Managed Fishery	x	✓	The Cockburn Sound (Fish Net) Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Exmouth Gulf Prawn Managed Fishery	x	✓	The Exmouth Gulf Prawn Managed Fishery management area overlaps the EMBA. The fishery is only active within the EMBA, with 60 NM CAES block reporting 6 consistently active vessels across the 2017 to 2022 seasons (DPIRD, 2023). The CAES reporting block overlaps the Operational Area (indicating fishing effort within the Operational Area), the fishery is limited to the spatial extent within the Exmouth Gulf and Muiron Islands. Therefore, Woodside only considers it a possibility that interactions with the fishery may occur only in the EMBA.
Gascoyne Demersal Scalefish Fishery	x	✓	The Gascoyne Demersal Scalefish Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between three and 12 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). FishCube data reported no fishing effort at 10 NM CAES blocks overlapping the Operational Area (DPIRD, 2022). Woodside considers there to be potential for interaction with the fishery within the EMBA.
Hermit Crab Fishery	x	✓	The Hermit Crab Fishery area overlaps the Operational Area and the EMBA. There has been no reported fishing effort in the Operational Area at the 10 NM or 60 NM CAES reporting blocks. The collection method for the fishery is hand-catch, on shorelines, and therefore the potential for interaction with the Operational Area is not considered possible. Less than 3 licences have been active in the fishery within the EMBA, during the 2017–2022 period Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Joint Authority Southern Demersal Gillnet and Demersal Longline Fishery	x	✓	The Joint Authority Southern Demersal Gillnet and Demersal Longline Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 3 and 11 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Kimberley Crab Managed Fishery	x	✓	The Kimberley Crab Fishery management area overlaps the EMBA. The fishery is active in the EMBA, with an allocation of 1200 units (600 traps) to license holders and an equivalent allocation of 600 traps to Traditional Owner groups, with 7 people employed in 2021-2022 season (Johnston et al., 2023). Accordingly, Woodside considers there to be a potential for interaction with this fishery in the EMBA
Kimberley Gillnet and Barramundi Fishery	x	✓	The Kimberley Gillnet and Barramundi Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Kimberley Prawn Managed Fishery	x	✓	The Kimberley Prawn Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting 3 to 14 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Woodside considers there to be potential for interaction with the fishery in the EMBA.
Mackerel Managed Fishery	✓	✓	The Mackerel Managed Fishery overlaps the Operational Area and EMBA. FishCube data for the Mackerel Managed Fishery is not provided at the 10 NM scale; however, effort reported in the 60 NM CAES block reporting between 3 and 7 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent in the years since 2012. Woodside considers there may be potential for interaction with the fishery in the Operational Area and EMBA.
Mandurah to Bunbury Developing Crab Fishery	x	✓	The Mandurah to Bunbury Developing Crab Fishery overlaps the EMBA. The fishery is active within the EMBA, but was closed in 2022 (Johnston et al., 2023). Therefore, if the fishery reopens, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Marine Aquarium Fish Managed Fishery	x	✓	The Marine Aquarium Fish Managed Fishery overlaps the Operational Area and EMBA. FishCube data for the Marine Aquarium Fish Managed Fishery is not provided at the 10 NM scale, however effort reported in the 60 NM CAES block reporting between 3-5 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent in the years since 2017. The Marine Aquarium Fish Managed Fishery generally collects fish for display in water depths <30m. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Nickol Bay Prawn Limited Entry Fishery	x	✓	The Nickol Bay Prawn Limited Entry Fishery management area overlaps the EMBA. The fishery is active in the EMBA, with 60 NM CAES block reporting between 3-8 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
North Coast Shark Fishing	x	x	The North Coast Shark Fishing area overlaps EMBA. The northern shark fisheries comprise of the North Coast Shark Fishery in the Pilbara and Western Kimberley (closed since 1998), and the Joint Authority of Northern Shark Fishery in the eastern Kimberley, which has not been active since the 2008–2009 season (AFMA, 2021). Therefore, Woodside considers there to be no interaction with the fishery and the Petroleum Activities Program.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Northern Demersal Scaefish Managed Fishery	x	✓	The Northern Demersal Scaefish Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 3 and 7 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Northern Territory Aquaculture Managed Fishery	x	x	The Northern Territory Aquaculture Managed Fishery management area overlaps the EMBA. The fishery primarily operates in shallow coastal waters (Northern Territory Government, 2023c). However, there has been no catch effort from 2017-2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Northern Territory Aquarium Managed Fishery	x	x	The Northern Territory Aquarium Managed Fishery management area overlaps the EMBA. There were up to 5 active licences between 2019 and 2022, with the number of licences capped at 12 (DCCEEW, 2022b). While the fishery is permitted to fish in the EMBA, there has been no catch effort from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program
Northern Territory Demersal Managed Fishery	x	x	The Northern Territory Demersal Managed Fishery management area overlaps the EMBA. There are currently 16 licences and 7 vessels issued in the fishery and permitted to fish 15NM from the low water mark to the outer boundary of the Australian fishing zone, excluding the area of the Timor Reef Fishery (Northern Territory Government, 2023a). Given that the fishery area overlaps the EMBA, there has been no catch effort from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Northern Territory Mollusc Managed Fishery	x	x	The Northern Territory Mollusc Managed Fishery management area overlaps the EMBA. The fishery collects molluscs by hand and are permitted to harvest in intertidal waters from the high to low water mark (Northern Territory Government, 2023b). Given that the fishery is permitted to operate, there has been no catch effort from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Northern Territory Mud Crab Managed Fishery	x	x	The Northern Territory Mud Crab Managed Fishery management area overlaps the EMBA. The fishery is restricted to 49 individual licences, with each licence entitled to 30 pots (DSEWPC, 2012a), and cannot fish for mud crabs in waters that are not subject to tidal influence (DITT, 2006). While the fishery is permitted to operate in the EMBA, there is no catch effort from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.
Northern Territory Offshore Net and Line Managed Fishery	x	x	The Northern Territory Offshore Net and Line Managed Fishery management area overlaps the EMBA. The fishery operates in Northern Territory and Commonwealth waters from the low water mark to the extent of the Australian Fish Zone (DCCEEW, 2022). However, even though the fishery is permitted to fish in the EMBA, there is no catch effort captured from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Northern Territory Spanish Mackerel Managed Fishery	x	x	The Northern Territory Spanish Mackerel Managed Fishery management area overlaps the EMBA. The fishery is not permitted to fish in Marine Parks and with a limit of 12 unrestricted licences and 3 restricted licenses (DITT, 2020). While the fishery is permitted to operate in the EMBA, there has been no catch effort from 2017 to 2022 within the EMBA. Therefore, Woodside considers it unlikely for any potential for interaction with this fishery and the Petroleum Activities Program
Octopus Interim Managed Fishery	x	✓	The Octopus Interim Managed Fishery management area overlaps the EMBA. The fishery is active within the EMBA, 60 NM CAES block reporting between 3 and 9 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Onslow Prawn Limited Entry	x	✓	The Onslow Prawn Limited Entry Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). The CAES reporting block for the fishery overlaps the Operational Area (indicating fishing effort within the OA), however, the fishery is limited to the spatial extent and boundaries of the fishery. At the nearest point the fishery could only be active at a distance >45 km from the Operational Area. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Open Access in the North Coast	x	✓	The Open Access in the North Coast Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 3 and 7 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Pearl Oyster Managed Fishery	x	✓	The Pearl Oyster Managed Fishery management area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 3 and 6 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). At the nearest point the fishery could only be active at a distance >45 km from the Operational Area. The Pearl Oyster Managed Fishery fishing effort is mostly focused in coastal waters (10 to 15 m depth) with a maximum depth of 35 m (Lulofs et al., 2002). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Pilbara Crab Managed Fishery	x	✓	The Pilbara Crab Managed Fishery management area overlaps the Operational Area and the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). The Pilbara Crab Managed Fishery covers inshore waters (<50 m) from Onslow to Port Hedland, with most activity around Nickol Bay (Johnston et al., 2020). However, areas of the fishery north and east of Exmouth and nearshore are currently closed as per Schedule 2 of the Draft Management Plan for the Pilbara Crab Managed Fishery (DPIRD, 2018b). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Pilbara Fish Trawl (Interim) Managed Fishery	x	✓	The Pilbara Fish Trawl (Interim) Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 3 and 4 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). The Pilbara Fish Trawl (Interim) Managed Fishery is divided into 2 zones and an area governed by Schedule 5 (prohibited to trawling) (Newman et al., 2020). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Pilbara Line Fishery (condition)	✓	✓	The Pilbara Line Fishery (condition) licensees are permitted to operate anywhere within Pilbara waters (Newman et al., 2021), overlapping the Operational Area and the EMBA. The fishery is active in the EMBA, with one 60 NM CAES block reporting up to 5 licences across the 2017 to 2022 seasons (DPIRD, 2023). FishCube data for the Pilbara Trap Fishery is not provided at the 10 NM scale. Therefore, Woodside considers it a possibility that interactions with the fishery may occur within the Operational Area and/or the EMBA.
Pilbara Trap Managed Fishery	✘	✓	The Pilbara Trap Fishery management area overlaps the EMBA. The fishery is active with the overlapping 60 NM CAES block reporting <3 vessels across the 2017 to 2022 seasons (DPIRD, 2023). FishCube data for the Pilbara Trap Managed Fishery is not provided at the 10 NM scale. Fishing effort at this level has been consistent for the previous 10-year catch report. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Shark Bay Beach Seine and Mesh Net Managed Fishery	✘	✓	The Shark Bay Beach Seine and Mesh Net Managed Fishery management area overlaps the EMBA. The fishery operates in the EMBA and uses both beach seine and mesh net gears with approximately 7 licenses active (WAFIC, 2023b). Given the methods, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Shark Bay Crab Managed Fishery	✘	✓	The Shark Bay Crab Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 17 and 23 consistently active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Shark Bay Prawn Managed Fishery	✘	✓	The Shark Bay Prawn Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting between 16 and 18 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Shark Bay Scallop Managed Fishery	✘	✓	The Shark Bay Scallop Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 24 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South Coast Crustacean Managed Fishery	✘	✓	The South Coast Crustacean Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 5 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South Coast Estuarine Managed Fishery	✘	✓	The South Coast Estuarine Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 13 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South Coast Line and Fish Trap Managed Fishery	✘	✓	The South Coast Line and Fish Trap Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 19 active vessels across the 2021–2022 season (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
South Coast Nearshore Net Managed Fishery	x	✓	The South Coast Nearshore Net Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 10 active vessels across the 2021–2022 season (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South Coast Purse-Seine Managed Fishery	x	✓	The South Coast Purse-Seine Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 6 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South Coast Salmon Managed Fishery	x	✓	The South Coast Salmon Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 4 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South West Coast Beach Net Fishery (order)	x	✓	The South West Coast Net Fishery (order) area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 9 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South West Coast Salmon Fishery	x	✓	The South West Coast Salmon Fishery management area overlaps the Operational Area and the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting up to 3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023). The fishery primarily uses haul, beach seine and gill netting for catching targeted species, which typically occurs in depths <100 m (Duffy et al., 2022). Given the depth of the Operational Area (340 m), Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
South West Trawl Fishery	x	✓	The South West Trawl Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent during this time. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Specimen Shell Managed Fishery	x	✓	The Specimen Shell Managed Fishery management area overlaps the Operational Area and EMBA. The fishery is active within 60 NM CAES block overlapping the Operational Area, with <3 licences active during the 2019–2022 season. FishCube data reported <3 licences at the 10 NM CAES block overlapping the Operational Area (DPIRD, 2023), with the only activity occurring for a duration of four months in the 2017–2018 season. Although there is overlap with the Operational Area and the CAES reporting block, given the depth and offshore location of the Operational Area and the collection methods of the fishery, it is highly unlikely interactions would occur. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
Trochus Fishery	x	✓	The Trochus Fishery management area overlaps the Operational Area and the EMBA. The Trochus Fishery is a small fishery operated by the Bardi Jawi and Maula and harvested by hand on reef tops during low tide (WAFIC, 2023a). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
Warnbro Sound Crab Managed Fishery	✘	✓	The Warnbro Sound Crab Managed fishery management area overlaps the Operational Area and the EMBA. The fishery is active within the EMBA, with 60 NM CAES. However, the fishery was closed in 2022 (Johnston et al., 2023). If the fishery were to reopen, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast (Beach Bait Fish Net) Managed Fishery	✘	✓	The West Coast (Beach Bait Fish Net) Managed Fishery area overlaps the EMBA. The fishery is active within the EMBA, with 60 NM CAES block reporting <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent during this time. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	The West Coast Deep Sea Crustacean Managed Fishery is permitted to fish in waters deeper than the 150 m isobath, overlapping the Operational Area and EMBA. The fishery may be active in the Operational Area, with one 60 NM CAES block reporting <3 vessels in the 2021–2022 season (DPIRD, 2023). FishCube data reported no fishing effort at 10 NM CAES blocks in the last five years overlapping the Operational Area (DPIRD, 2023). Woodside considers there to be potential for interaction with the fishery in the Operational Area or EMBA.
West Australian Sea Cucumber Fishery	✘	✓	The West Australian Sea Cucumber Fishery management area overlaps the Operational Area and EMBA. The fishery is active in the EMBA with 60 NM CAES block with <3 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent during this time. FishCube data reported no fishing effort at 10 NM CAES blocks overlapping the Operational Area (DPIRD, 2023). Fishing primarily occurs from the Exmouth Gulf to the Northern Territory border, with Shark Bay being fished for the second time in the 2020–2021 (Hart et al., 2022). The fishery is a commercial only fishery, collecting targeted species by diving and wading, which typically occur in nearshore, shallow waters (Hart et al., 2021). Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast Demersal Gillnet and Demersal Longline	✘	✓	The West Coast Demersal Gillnet and Demersal Longline Fishery area overlaps the EMBA. The fishery is active in the EMBA with 60 NM CAES block with up to 4 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent during this time. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast Demersal Scalefish (Interim) Managed Fishery	✘	✓	The West Coast Demersal Scalefish (Interim) Managed Fishery area overlaps the EMBA. The fishery is active in the EMBA with 60 NM CAES block with up to 16 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort consistent during this time. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast Estuarine Managed Fishery	✘	✓	The West Coast Estuarine Managed Fishery area overlaps the EMBA. The fishery is active in the EMBA with 60 NM CAES block with up to 11 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort reducing to 7 vessels in the 2020-2022 seasons. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.

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Fishery	Potential for Interaction		
	Operational Area	EMBA	Description
West Coast Purse Seine Fishery	*	✓	The West Coast Purse Seine Fishery area overlaps the EMBA. The fishery is active in the EMBA with 60 NM CAES block with up to 4 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), with fishing effort reducing to <3 vessels in the 2018–2022 seasons. Therefore, Woodside considers it a possibility that interactions with the fishery may occur only in the EMBA.
West Coast Rock Lobster Fishery	*	✓	The Western Rock Lobster Fishery management area overlaps the EMBA (DPIRD, 2023). The fishery is active in the EMBA with 60 NM CAES block with up to 94 active vessels across the 2017 to 2022 seasons (DPIRD, 2023), Vessel numbers in the fishery have steadily declined over the 5-year period with up to 80 and 74 vessels active during the 2020 and 2022 seasons respectively. Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activities Program.
Charter based commercial operators ✓ = overlap with fishery; blue shading = possibility for interaction with the Operational Area			
Tour Operators	✓	✓	Fishing Tour Operators are permitted to operate across WA state waters and are required to report monthly logbook records of client fish catches. FishCube data reports consistent fishing effort across the 60 NM CAES block that overlaps the EMBA (DPIRD, 2023). Fishing effort was reported by a maximum of 12 licence holder during the 2018–2019 season, with licence numbers varying between <3 and 12 overall during the 2017 to 2022 seasons (DPIRD, 2023). FishCube data reported <3 active tour operators at 10 NM CAES blocks overlapping the Operational Area (DPIRD, 2023), which were only active during the 2020–2021 period. FishCube data indicate tour operator fishing effort highest around Ningaloo and Murion Islands and at Barrow Island and the Montebello Islands, east of the EMBA. Woodside considers there to be potential for interaction with the fishery in the Operational Area or EMBA.

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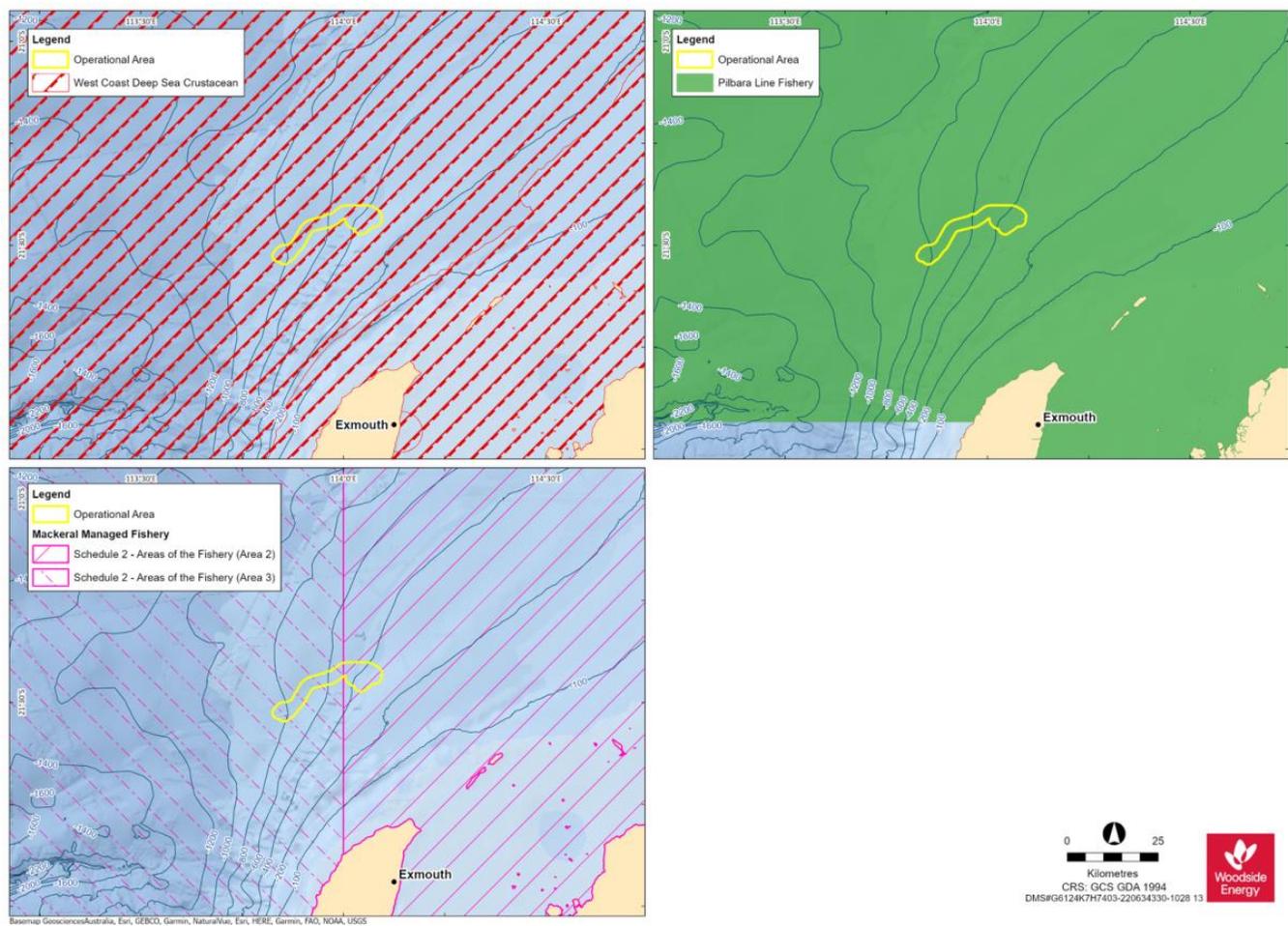


Figure 4-12: State managed commercial fisheries overlapping the Operational Area with a potential for interaction with the Petroleum Activities Program

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4.10.2 Traditional Fisheries

There are no identified traditional or customary fisheries within the offshore waters of the Operational Area and EMBA, as these are typically restricted to shallow coastal waters and/or areas with structure such as reef.

A key feature of the north-west marine region is the large tidal range in this part of the Australian coast with daily fluctuations up to 12 meters resulting in vast areas of intertidal land and reef flats available for marine resource harvesting (Smyth, 2007). Further, the tidal range also results in strong tidal currents, especially between islands and at the entrance to embayment's that First Nations people used to travel long distance on rafts and canoes between mainland and the reefs and islands (Smyth, 2007). There are no traditional or customary fisheries within the Operational Area, as these are typically restricted to shallow coastal waters and/or areas with structures such as reefs. However, it is recognised that Barrow Island, Montebello Islands and Ningaloo Reef, all within the wider EMBA, have a known history of fishing when areas were occupied (as from historical records) (CALM, 2005).

A Memorandum of Understanding was established with Indonesian fisheries for parts of the Australia Fishing Zone and Continental Shelf (MoU 74). Currently, Scott Reef is the principal reef in the MoU 74 box. This MoU allows Indonesian fishers to participate in traditional fishing activities using traditional methods and is used seasonally. The Operational Area is located outside of the MoU 74 Box; however, it is overlapped by the EMBA.

4.10.3 Historic Sites of Significance

There are no known sites of historic heritage significance within the Operational Area.

It is understood that Indigenous Australian people have a strong continuing connection with the area that extends back some 50,000 years. Woodside acknowledges this unique connection between Aboriginal peoples and the land and sea in which the company operates. Woodside also understands that while marine resources used by Indigenous people are generally limited to coastal waters for activities such as fishing, hunting and maintenance of culture and heritage, many Aboriginal groups have a direct cultural interest in decisions affecting the management of deeper offshore waters. In particular, the Yinggarda, Baiyungu and Thalanyji People have direct interest in the operation and impacts of the Petroleum Activities Program as Traditional Owners of the area overlapped by the EMBA (potential for shoreline accumulation along the Gascoyne coast).

4.10.4 Underwater Heritage

A search of the Australian National Shipwreck Database which records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics and other underwater cultural heritage) in Australian waters indicated that there are no sites within the Operational Area, however, numerous shipwrecks exist within the EMBA. **Table 4-22** lists shipwrecks within 50 km of the Operational Area.

Table 4-22: Recorded shipwrecks within the environment that may be affected and within 50 km of the Operational Area

Vessel Name (ID number)	Year Wrecked	Latitude	Longitude
Gem (4144)	1893	-21.6166667	113.9833333
Beatrice (3731)	1899	-21.6166667	113.9833333
Emlyn Castle (4037)	1960	-21.78472167	114.165
Mildura (4516)	1907	-21.784092	114.167735
Lady Ann (4359)	1983	-21.400000	114.200000
Veronica (5061)	1928	-21.683333	114.383333
Fairy Queen (4088)	1875	-21.817150	114.189117
Nellie (4567)	1893	-21.750000	114.083333
Kapala (4318)	1964	-21.750000	114.083333
Ellen (4021)	1893	-21.750000	114.083333
Wild Wave (5112)	1875	-21.750000	114.083333
Sea Queen (4788)	1893	-21.750000	114.083333
Ruby (4749)	1893	-21.750000	114.083333
Lily of the Lake (4403)	1875	-21.750000	114.083333
Unidentified Lugger (5001)	1893	-21.750000	114.083333
Elizabeth (4013)	1893	-21.750000	114.083333
Bell (3736)	1893	-21.750000	114.083333
Agnes (3623)	1893	-21.750000	114.083333
Leave (4385)	1893	-21.750000	114.083333
Lamareaux (4369)	1893	-21.750000	114.083333
Mabel (4427)	1893	-21.750000	114.083333
Smuggler (4824)	1893	-21.750000	114.083333
Pearl (4628)	1896	-21.750000	114.083333
Olive (4598)	1893	-21.750000	114.083333
Florence (4111)	1893	-21.750000	114.083333

4.10.5 World, National and Commonwealth Heritage-Listed Places

No listed heritage places overlap the Operational Area. World, National and Commonwealth heritage places within the EMBA are identified in **Table 4-23**.

Table 4-23: World Heritage Properties and National/Commonwealth Heritage Listed Places within the environment that may be affected

Listed Place	Distance and Direction from Operational Area to Listed Place (km)
World Heritage Properties	
Ningaloo Coast	8.6 km south-east
Shark Bay, Western Australia	357 km south-west
National Heritage Places	
Ningaloo Coast	8.6 km south-east
Dampier Archipelago (including Burrup Peninsula)	257 km north-east
Shark Bay, Western Australia	357 km south-west
Dirk Hartog Landing Site 1616 – Cape Inscription Area	445.3 km south-west
HMAS Sydney II and HSK Kormoran Shipwreck Sites	578.1 km south-west
Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos	761.4 km south-west
The West Kimberley	855.4 km north-east
Christmas Island Natural Areas	1503.1 km north-west
Great Western Woodlands of Western Australia	1641.9 km south-east
Barrow Island and the Montebello-Barrow Islands Marine Conservation Reserves	128.2 km north-east
Cape Riche	1517.1 km south-east
Commonwealth Heritage Places	
Ningaloo Marine Area – Commonwealth waters	8.6 km south-east
Learmonth Air Weapons Range Facility	92.6 km south-west
HMAS Sydney II and HSK Kormoran Shipwreck Sites	578.1 km south-west
Mermaid Reef – Rowley Shoals	746 km north-east
Lancelin Defence Training Area	1030.2 km south-east
Scott Reef and Surrounds – Commonwealth Area	1146.8 km north-east
Garden Island	1180.2 km south-east
Cliff Point Historic Site	1184 km south-east
Ashmore Reef National Nature Reserve	1384.4 km north-east
Christmas Island Natural Areas	1502.6 km north-west
Settlement Christmas Island	1515.5 km north-west
Oceania House and Surrounds	2128.9 km north-west
North Keeling Island	2151.4 km north-west
Cape Leeuwin Lighthouse	1420.5 km south-east

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4.10.6 Tourism and Recreation

Year end March 2023 WA saw 11.7 million overnight (domestic and international) visitors who contributed \$15.9 billion into the economy, \$7.3 billion of which was spent in regional WA (Tourism Research Australia, 2023):

- Australia's South West accounted for approximately 3.1 billion.
- Australia's Coral Coast accounted for approximately 1.1 billion.
- Australia's North West accounted for approximately 1.9 billion.
- Australia's Golden Outback accounted for approximately 1.1 billion (Tourism WA, 2023).

The Operational Area is located offshore of the North West tourism region which includes parts of the Gascoyne region, the Pilbara region, the Kimberley region. Tourism is concentrated in the vicinity of population centres such as Broome, Dampier, Exmouth, Coral Bay and Shark Bay. Population centres closest to the Operational Area are the towns of Onslow (~93 km) and Exmouth (~39 km). Onslow is a coastal town offering easy access to tourists, vacationers and recreational fishers to the Mackerel Islands, a group of ten islands 22 km offshore. Exmouth has become a significant tourist centre with Cape Range National Park, Ningaloo Marine Park and adjacent inshore waters. In 2018–2019, the Ningaloo region (Ningaloo Reef and the surrounding coastal region Exmouth Gulf, communities of Exmouth and Coral Bay, and adjacent proposed southern coastal reserves and pastoral leases) contributed an estimated \$110 million in value added to the WA economy (DCBA, 2020).

Peak tourism in the North West occurs from April to October coinciding with winter or the dry season. Marine-based activities are typically concentrated around infrastructure such as boat ramps and camping areas (Smallwood, 2009). Marine facilities, including boat launching ramps, jetties, marinas, etc., near the Operational Area are limited, with most located along the Exmouth Gulf side of the peninsula, including:

- Port of Onslow, Beadon Creek
- Point Murat naval supply jetty (restricted access)
- Bundegi – facilities include a concrete launching ramp, car park and public toilets
- Exmouth Marina – provides launching, mooring, fuelling and supply facilities for commercial fishing, charter fishing, tourist and commercial/private vessels.

Boat ramps on the Ningaloo side are located at:

- Tantabiddi Creek – facilities include a concrete launching ramp, car park and public toilets
- Coral Bay – concrete launching ramp.

Recreational fisheries and charter boat operators are managed by the Western Australian Department of Primary Industries and Regional Development. With an estimated 740,000 people fishing recreationally in WA, it makes a significant contribution to the economy and attracts vast numbers of visitors to the region each year (Department of Fisheries, 2014). The Ningaloo Marine Park (~9 km from the Operational Area) also provides high-quality fishing for species such as spangled emperor, Spanish mackerel and coral trout. The Muiron Islands are ~36 km from the Operational Area and are used recreationally for swimming, snorkelling and scuba diving. Further, the Montebello Islands ~178 km from the Operational Area are used for recreational activities including camping, fishing, diving and boating.

4.10.7 Commercial Shipping

The Australian Maritime Safety Authority (AMSA) has introduced a network of marine fairways across the NWMR off WA to reduce the risk of vessel collisions with offshore infrastructure. The NY FPSO Operational Area within Petroleum Licence WA-28-L and WA-59-L lies outside of these declared and charted shipping fairways.

Refer to **Figure 4-13** for vessel density within the Operational Area and EMBA.

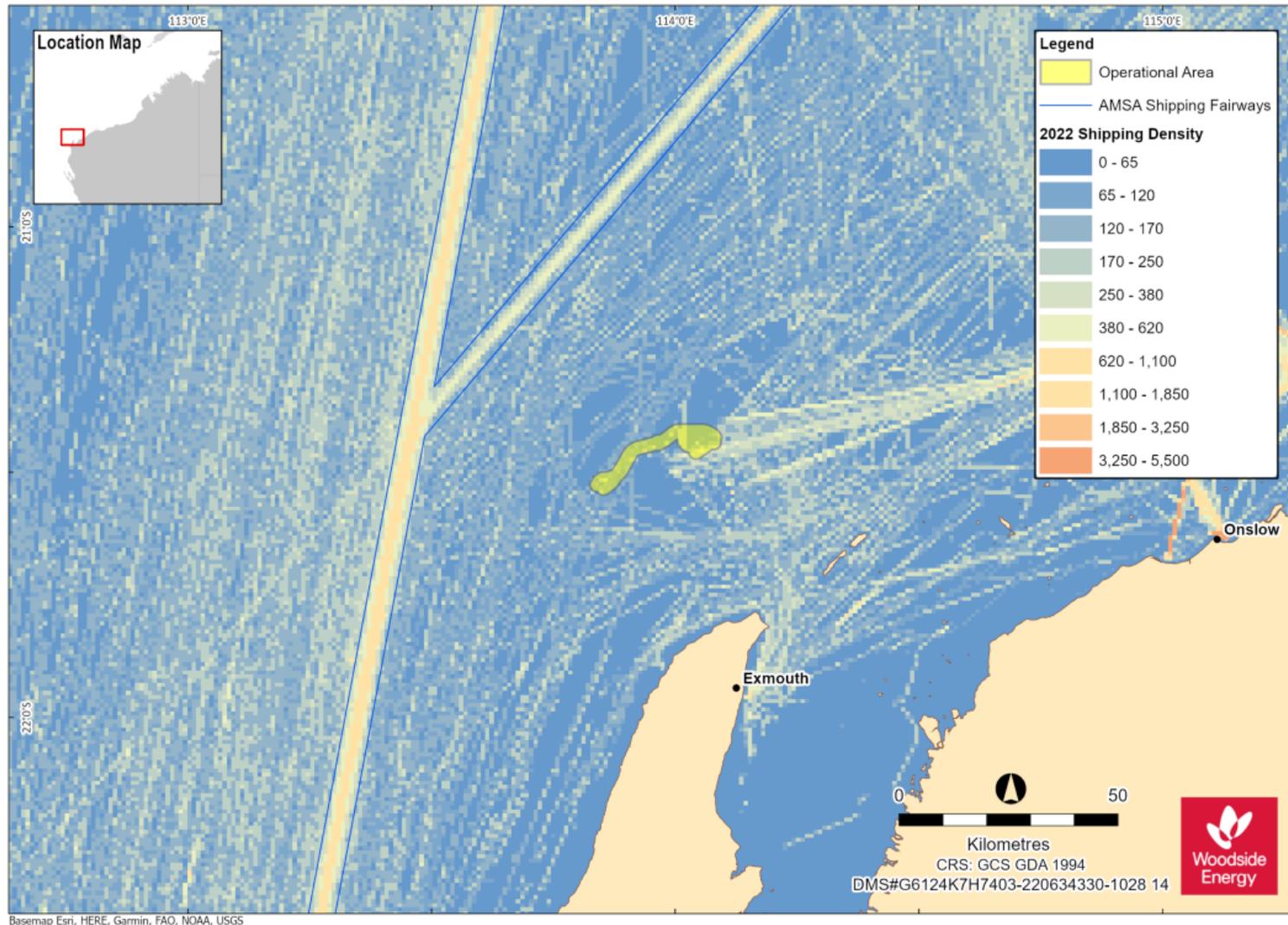


Figure 4-13: Vessel density map for the Operational Area and environment that may be affected, derived from Australian Maritime Safety Authority satellite tracking system data (vessels include cargo, liquefied natural gas tanker, passenger vessels, support vessels and others/unnamed vessels)

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4.10.8 Oil and Gas

The Operational Area is located within an area of established oil and gas operations within the North West Marine Region. **Table 4-24** details other oil and gas facilities located within 50 km of the Operational Area.

Table 4-24: Other oil and gas facilities located within 50 km of the Operational Area

Facility Name and Operator	Distance and Direction from Operational Area to the Facility (km)
Santos Van Gogh/Coniston/Novara Development (Ningaloo Vision FPSO)	1 km north-east
Woodside Pyrenees Facility (Pyrenees FPSO)	2 km south-east
Woodside Macedon Subsea Gas Field	2 km south-east

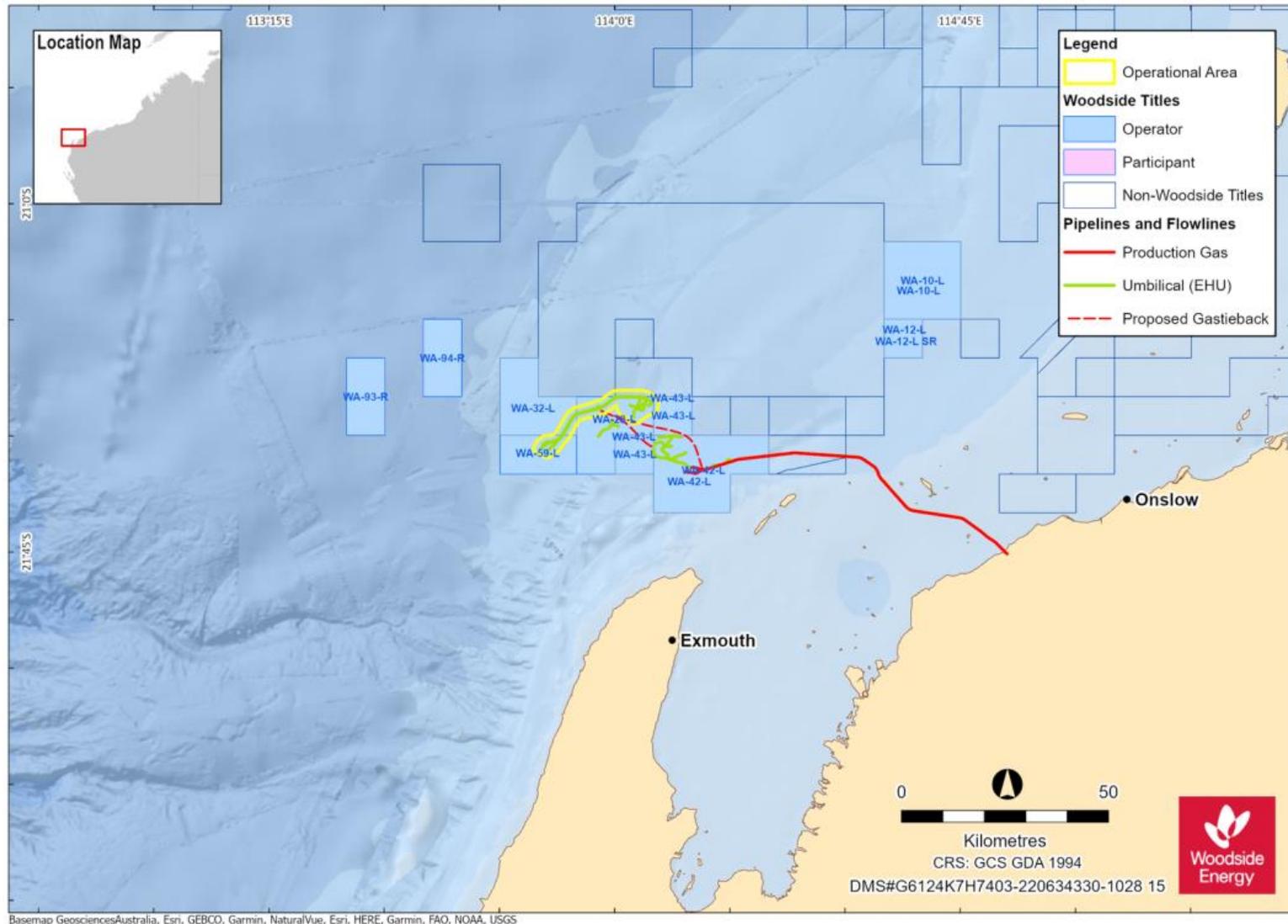


Figure 4-14: Oil and gas Infrastructure within the Operational Area and environment that may be affected

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4.10.9 Defence

Department of Defence (DoD) areas, facilities and UXOs overlapping the Operational Area and EMBA are outlined in **Table 4-25**. The Learmonth air training area is the only DoD area that overlaps the Operational Area, but there are a wide range of others throughout the broader EMBA.

Table 4-25: Defence areas, facilities and unexploded ordnances overlapping the Operational Area and/or environment that may be affected

Defence area/facility	Presence	
	OA	EMBA
Learmonth Air Weapons Range Facility.		✓
Learmonth air training area (associated with the Learmonth Air Weapons Range Facility).	✓	✓
Naval Communications Station Harold E. Holt.		✓
UXO SDG096 Sea Dumping: Anchor Island. This site is an area used for the dumping at sea of ordnance and other items.		✓
Potential Depth Charge UXO DEP022: Northwest of Bessieres Island. This site was an area where Depth Charges were used in WWII and where some depth charges failed to function.		✓
UXO 793 and 794: Exmouth Gulf: Prior to WWII, RAN bombarded both land and sea targets on and near the peninsula.		✓
UXO 1018: Exmouth Gulf: Allied WWII base high explosive ordnance were stored and fired.		✓
UXO 1019: Exmouth Gulf: Aerial bombing in the Rough Range area during WWII. Two depth charges were lost overboard in the Bay of Rest area. Artillery fired on land and sea targets.		✓
UXO 940: Onslow. Anti-aircraft artillery live firing practices using high explosive ammunition during WWII. Aerial bombing also highly likely.		✓
Potential Depth Charge UXO DEP027: East of Montebello Islands. This site was an area where Depth Charges were used in WW2 and where some depth charges failed to function.		✓
UXO SDG082: Sea Dumping – Ningaloo. This site is an area used for the dumping at sea of ordnance and other items.		✓
UXO SDG129 and 116 Sea Dumping – Indian Ocean. This site is an area used for the dumping at sea of ordnance and other items.		✓
Geraldton Seaward – artillery fired seaward during WWII and small quantities of high explosive ammunition were dumped at sea off Geraldton during the 1950s.		✓
Oakajee Air Gunnery Range Geraldton – danger area shown seaward of coast. Probable ordnance impacted on land.		✓
Rangeway – live fire anti-armour exercises.		✓
Narngulu – areas most likely to contain UXO are the sand dunes to the west, south-west and south of Meru.		✓
Separation Point – artillery unit fired from vicinity of Wonthella to beach area of Separation Point in 1942.		✓
Mouth of Greenough River & Southgate Dunes – artillery and anti-armour firings into sand dunes.		✓
Jurien Bay Bombing Range – high explosive aerial bombing and strafing.		✓
UXO SDG097 Sea Dumping – Coastal WA – Nambung. Area used for the dumping at sea of ordnance and other items.		✓
Flat Rock – area used since 1940 as a high explosive bombing target.		✓
Wedge Island – RAAF/Allied Air Forces used Wedge Island as an aerial bombing target during WWII.		✓
Ran Gunnery Range Lancelin – area of Ocean west of current Naval Gunnery Range.		✓

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Defence area/facility	Presence	
	OA	EMBA
Lancelin Moore River Artillery Range – used as a high explosive target area by Army from WWII until 1975.		✓
Moore River RAAF Armament Range – used as RAAF air to air gunnery training area.		✓
Rottneest Seaward Firing – site is one of many that was used for dumping at sea of ammunition and other items after WWII.		✓
Cockburn Sound Seawards Firing – WWII live firing of mortars. Post WWII use by army firing 81mm high explosive ammunition, anti-armour rockets and grenades.		✓
UXO Sea Dumping sites West of Rottneest Island. Area used for the dumping at sea of ordnance and other items. SDG090, SDG092, SDG117, SDG114, SDG113, SDG118, SDG100, SDG115, SDG098, SDG119, SDG086, SDG124, SDG120, SDG084, SDG094, SDG095, SDG083.		✓
Potential Depth Charge UXO North West of Rottneest Island: DEP024, DEP028, DEP029.		✓
Albany Seaward – Slight potential of shells on the Harbour floor following the end of WWII, live ammunition was dumped into the channel at Point King.		✓
Albany – slight potential of artillery and mortar live fire from 1890–1993.		✓
Gardner River – slight potential of high explosive mortars and grenades following the end WWII.		✓
Cape Mantelle – RAAF aircraft used Cow Rock Island as a bombing target during WWII.		✓
Margaret River – live fire mortar shoot from 1944.		✓
Dunsborough – possible live firing mortar practice in 1994.		✓
Gardner River – slight potential of high explosive mortars and grenades following the end WWII.		✓
Cape Mantelle – RAAF aircraft used Cow Rock Island as a bombing target during WWII.		✓
Margaret River – live fire mortar shoot from 1944.		✓
Wonnerup Air Gunnery Area – air-to-ground gunnery range was gazetted in 1942.		✓
UXO SDG126 – Sea Dumping – Coastal WA – Margaret River. This site is an area used for the dumping at sea of ordnance and other items.		✓
UXO SDG116 – Sea Dumping – Indian Ocean. This site is an area used for the dumping at sea of ordnance and other items.		✓
Scarborough Seawards Firing – Reports of anti-aircraft battery firing seaward.		✓
Red Peak – Army artillery group conducted training exercises in 1942.		✓
UXO SDG096 – Anchor Island. This area is used for the dumping at sea of ordnance and other items.		✓
Potential Depth Charge UXO DEPO20 and 21 – Yampi Sound. This site was an area where depth charges were used in WWII and where some depth charges failed to function.		✓
Potential Depth Charge UXO DEP036 and 38 – Timor Sea. This site was an area where Depth Charges were used in WWII and where some depth charges failed to function.		✓
UXO 1111 – Darwin Area. Former Air-to-Air Weapons Range.		✓

5 CONSULTATION

5.1 Summary

Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 25 of the Environment Regulations. Consultation is designed to identify relevant persons and provide them with sufficient information and a reasonable period to allow them to make an informed assessment of the possible consequences of the proposed activity on their functions, interests and activities, to enable titleholders to consider and adopt appropriate measures in response to objections or claims received from relevant persons. Consistent with regulation 4 of the Environment Regulations, consultation also supports the objective to ensure that the activity is carried out in a manner by which the environmental impacts and risks of the activity will be reduced to ALARP and will be of an acceptable level.

Woodside acknowledges a titleholder's approach to consultation is to be informed by both the Environment Regulations and the findings of relevant Courts, including the Full Federal Court in the *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Tipakalippa Appeal) (see **Sections 5.2** and **5.5.1**) delivered on 2 December 2022.

For this Petroleum Activities Program, Woodside has considered both the Operational Area and the broader EMBA in undertaking consultation (see further discussion in **Section 5.2**). The broadest extent of the EMBA has been determined by reference to the highly unlikely event of a hydrocarbon release resulting from the Petroleum Activities Program (see **Section 4**).

Woodside's consultation methodology is divided into two parts:

1. The first section (**Section 5.2 to 5.5**) provides an overview of Woodside's consultation methodology for its EPs, including how we apply regulation 25(1) of the Environment Regulations to identify relevant persons.
2. The second section (**Section 5.6 to Section 5.7**) details Woodside's approach to accepting feedback and assessment of the merit of each objection or claim, and engaging in ongoing consultation for this EP.

Woodside's consultation record includes:

- assessment and identification of relevant persons
- consultation information provided to relevant persons, feedback received and Woodside's assessment of the merits of objections or claims
- engagement with persons or organisations that Woodside chose to contact who are not relevant persons for the purposes of regulation 25(1) of the Environment Regulations (see **Section 5.3.2.1**)
- opportunities provided to persons or organisations to be aware of Woodside's proposed EP and participate in consultation, including individual Traditional Custodians.

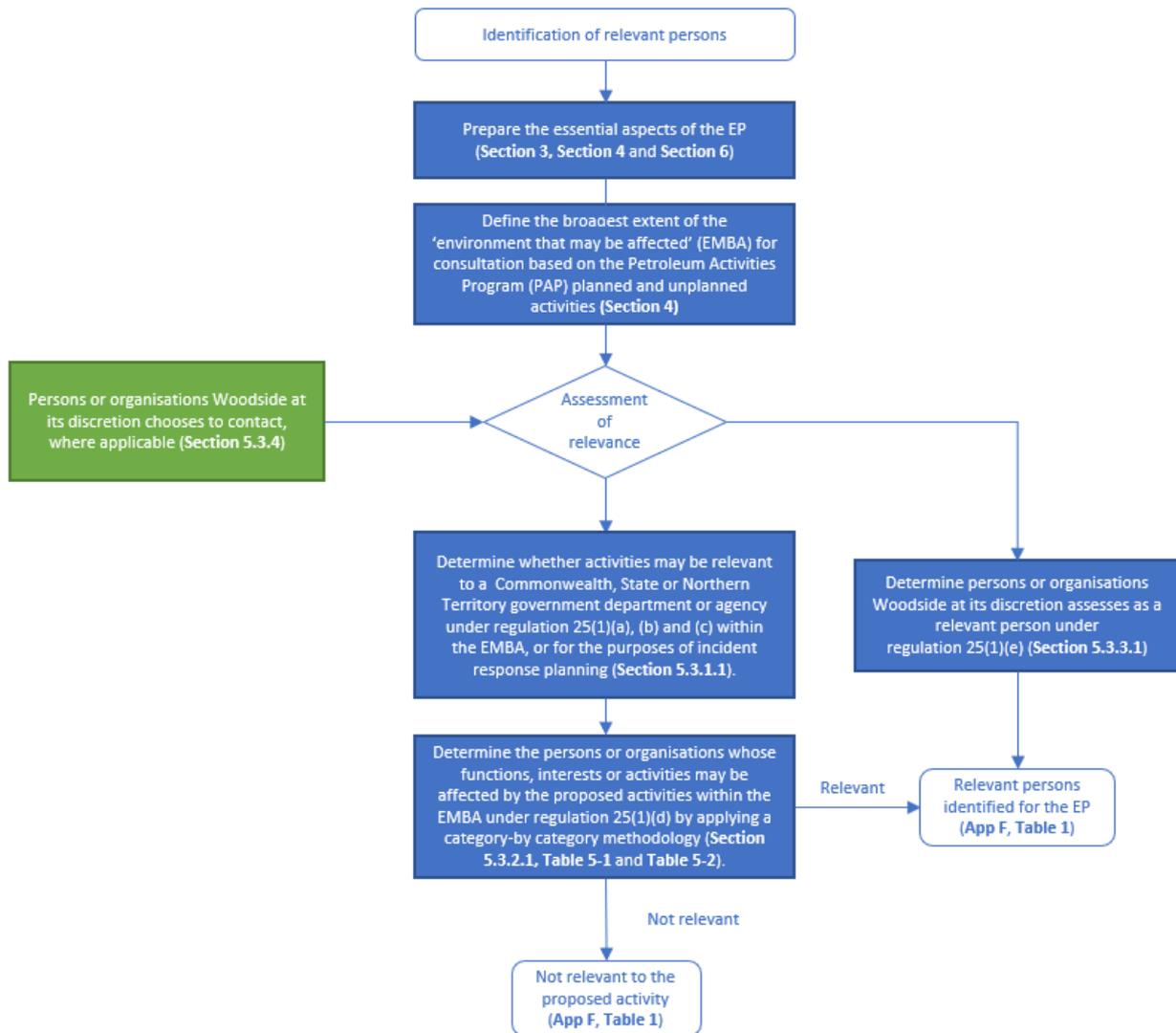


Figure 5-1: Overview of Woodside’s methodology to identify relevant persons

5.2 Consultation – General Context

Woodside has a portfolio of quality oil and gas assets and more than 30 years of operating experience. We have a strong history of working with local communities, the relevant regulators and a broad range of persons and organisations to understand the potential risks and impacts from our proposed activities and to develop appropriate measures to manage them.

The length of time that we have operated in Commonwealth and State waters, and the history of continued engagement with a wide range of persons and organisations enables Woodside to develop an extensive consultation list to inform its consultation process. This consultation list is not used as a definitive list of persons to consult, but rather, assists Woodside as an input to its understanding of relevant persons with whom to consult on a proposed petroleum activity. The information in the consultation list has been captured from years of experience, it contains insights relating to the type of information particular persons or organisations want to receive during consultation, the appropriate method of consultation for relevant persons and includes appropriate contact details, which are reviewed and updated periodically.

Woodside acknowledges NOPSEMA's Guideline on *Consultation in the course of preparing an environment plan* (12 May 2023) as well as judicial guidance in the Tipakalippa Appeal on the intent of consultation as follows:

- At paragraph 54 of the appeal decision: ... *provide a basis for NOPSEMA's considerations of the measures, if any, that a titleholder proposes to take or has taken to lessen or avoid the deleterious effect of its proposed activity on the environment, as expansively defined.*
- At paragraph 89 of the appeal decision: ...*its purpose is to ensure that the titleholder has ascertained, understood and addressed all the environmental impacts and risks that might arise from its proposed activity. Consultation facilitates this outcome because it gives the titleholder an opportunity to receive information that it might not otherwise have received from others affected by its proposed activity. Consultation enables the titleholder to better understand how others with an objective stake in the environment in which it proposes to pursue the activity perceive those environmental impacts and risks. As the Regulations expressly contemplate, it enables the titleholder to refine or change the measures it proposes to address those impacts and risks by taking into account the information acquired through the consultations. Objectively, the scheme intends that this is likely to improve the minimisation of environmental impacts and risks from the activity.*

The Tipakalippa Appeal has also been further considered in the context of specific methods for consultation with First Nations relevant persons (**Section 5.5.1**).

To undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations (**Section 5.3**). This methodology is consistent with NOPSEMA's guideline and demonstrates that, to meet the requirements of regulation 34 (criteria for EP acceptance) when preparing the EP, Woodside understands:

- our planned activities in the Operational Area, being the area in which our planned activities are proposed to occur (see **Section 3.3**)
- the geographical extent to which the environment may be affected (EMBA) by risks and impacts from our activities (unplanned) (identified in **Section 4.1** and assessed in **Section 6.8**).

Woodside has undertaken consultation in the course of preparing this EP in compliance with regulation 25 of the Environment Regulations, which requires a titleholder to:

- consult with each of the following (a **relevant person**) in the course of preparing an environment plan:
 - each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the environment plan may be relevant;
 - if the plan relates to activities in the offshore area of a State – the Department of the responsible State Minister;
 - each Department or agency of a State or the Northern Territory to which the activities to be carried out under the EP, or the revision of the EP, may be relevant
 - if the plan relates to activities in the Principal Northern Territory offshore area – the Department of the responsible Northern Territory Minister;
 - a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP; and
 - any other person or organisation that the titleholder considers relevant (regulation 25(1)).
- give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on their functions, interests or activities (regulation 25(2));
- allow a relevant person a reasonable period for the consultation (regulation 25(3));

- tell each relevant person that the titleholder consults with, that the relevant person may request that particular information it provides in the consultation not be published and any information subject to such a request is not to be published (regulation 25(4)).

Further, Woodside seeks to carry out consultation in a manner that:

- is consistent with the principles of ecologically sustainable development set out in Section 3A of the EPBC Act – see **Section 2**
- is intended to reduce the environmental impacts and risks from the activity to ALARP (regulation 4 of the Environment Regulations);
- seeks to ensure that the environmental impacts and risks of the activity will be of an acceptable level (regulation 4 of the Environment Regulations);
- is intended to minimise harm to the relevant person and the environment from the proposed petroleum activities and to enable Woodside to consider measures that may be taken to mitigate the potential adverse environmental impacts from the petroleum activity;
- is collaborative. Woodside respects that for a relevant person, consultation is voluntary. Where the relevant person seeks to engage, Woodside collaborates with the relevant person with the aim of seeking genuine and meaningful two-way dialogue;
- provides opportunities for relevant persons to provide feedback throughout the life of the EP through its ongoing consultation process (refer to **Section 5.7** and **Section 7.10**).

An overview of Woodside’s consultation approach is outlined at **Figure 5-2**.

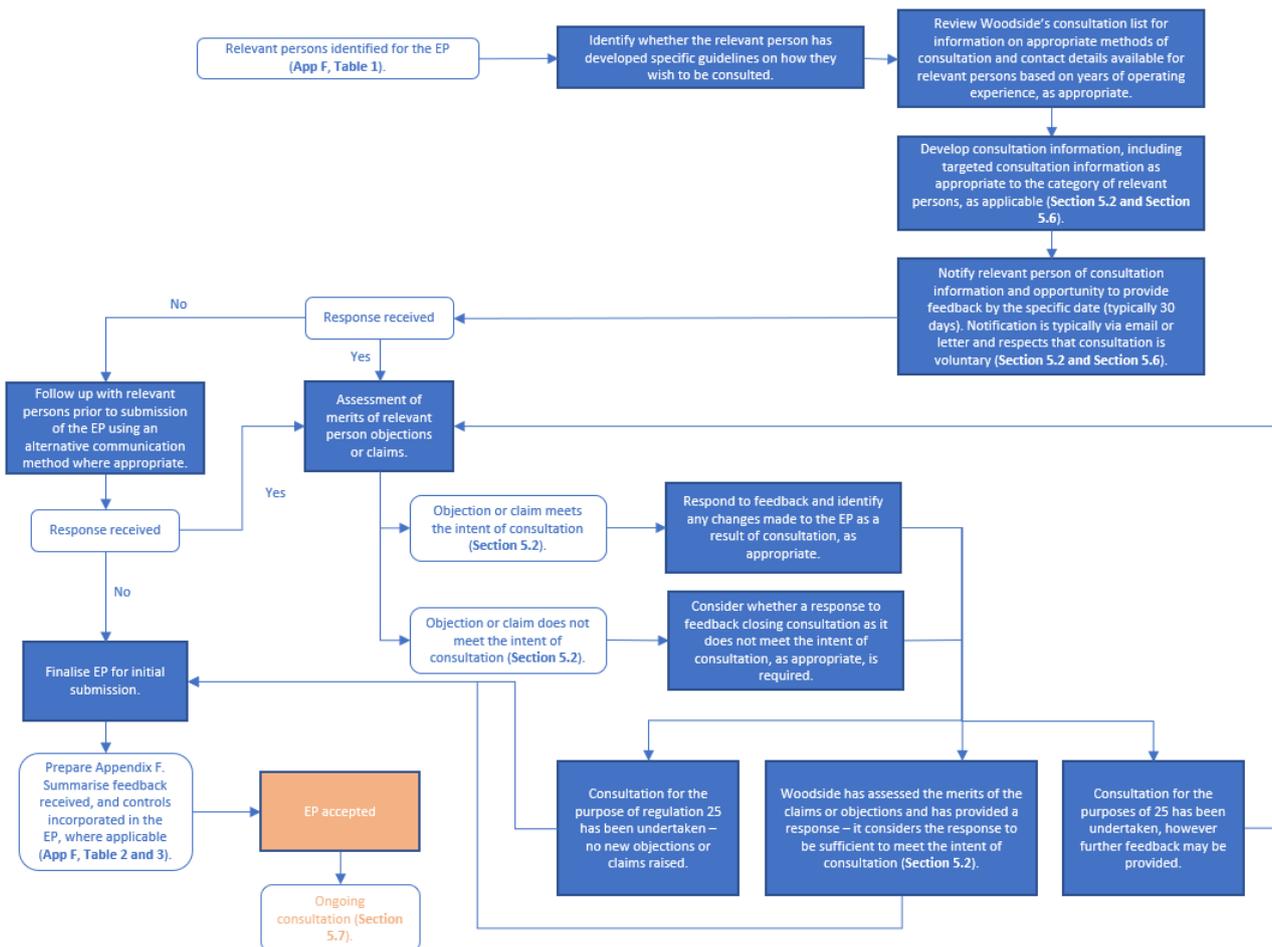


Figure 5-2: Overview of Woodside’s consultation approach.

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The methodology for consultation for this activity has been informed by various guidelines and relevant information for consultation on planned activities, including:

Federal Court:

- [Santos NA Barossa Pty Ltd v Tipakalippa \[2022\] FCAFC 193](#)
- [Munkara v Santos NA Barossa Pty Ltd \(No 3\) \[2024\] FCA9](#)

NOPSEMA:

- [GL2086 – Consultation in the course of preparing an environment plan – May 2023](#)
- [GN1847 – Responding to public comment on environment plans – January 2024](#)
- [GN1344 - Environment plan content requirements - September 2020](#)
- [GL1721 – Environment Plan decision making – January 2024](#)
- [GN1488 - Oil pollution risk management - July 2021](#)
- [GN1785 – Petroleum activities and Australian Marine Parks – January 2024](#)
- [GL 1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024](#)
- [PL9028 Managing gender-restricted information – December 2023](#)
- [Consultation on offshore petroleum environment plans – Information for the community](#)

Department of Climate Change, Energy, the Environment and Water:

- [Sea Countries of the North-West; Literature review on Indigenous connection to and uses of the North West Marine Region](#)

Australian Fisheries Management Authority:

- [Petroleum industry consultation with the commercial fishing industry](#)

Commonwealth Department of Agriculture and Water Resources:

- [Fisheries and the Environment – Offshore Petroleum and Greenhouse Gas Act 2006](#)
- [Offshore Installations Biosecurity Guide](#)

WA Department of Primary Industries and Regional Development:

- [Guidance statement for oil and gas industry consultation with the Department of Fisheries](#)

WA Department of Transport:

- [Offshore Petroleum Industry Guidance Note](#)

Good practice consultation:

- [IAP2 Public Participation Spectrum](#)
- [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Act 1999](#)

5.3 Identification of Relevant Persons for Consultation

5.3.1 Regulations 25(1)(a), (b) and (c)

The relevant inquiry for determining relevant persons within the description of regulations 25(1)(a) and (b) of the Environment Regulations is whether the activities to be carried out under the EP may be relevant to one of the government departments or agencies in those regulations. The government

departments and agencies relevant to the EP are also listed. In accordance with regulation 25(1)(c) of the Environment Regulations, Woodside consults with the department of the relevant State Minister.

5.3.1.1 Identification of relevant persons under regulations 25(1)(a), (b) and (c)

Woodside’s methodology for identifying relevant persons under regulations 25(1)(a), (b) and (c) is as follows:

- Woodside considers the defined responsibilities of each of the departments and agencies to which the activities in the EMBA to be carried out under the EP may be relevant. This list of relevant department and agencies is formulated by reference to the responsibilities of the government departments as set out on their websites, in NOPSEMA’s *GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area* guideline (January 2023), which describes where the Department is a relevant agency under the Environment Regulations, as well as experience and knowledge that Woodside has gained from years of operating in relation to the departments and agencies which Woodside has historically consulted over the years. This list is revised from time to time, for example, for the purposes of accommodating government restructures, renaming of departments, shifting portfolios and/or to account for new agencies that might arise.
- Woodside has categorised government department or agency groups as follows:

Government departments / agencies – marine	Agencies with legislated responsibilities for use of the marine environment.
Government departments / agencies – environment	Agencies with legislated responsibilities for the protection of the marine environment.
Government departments / agencies – industry	The legislated Department of the responsible Commonwealth, State or Northern Territory Minister for Industry.

- Woodside considers each of the responsibilities of the departments and agencies and determines whether those responsibilities overlap with potential risks and impacts specific to the proposed petroleum activity in the EMBA. The assessment is both activity and location based.
- Woodside acknowledges the roles and responsibilities of government departments and agencies acting on behalf of various industry participants. For example, AMSA – Marine Safety is responsible for the safety of vessels and the seafarers who are operating in the domestic commercial shipping industry and AHO is responsible for maritime safety and Notices to Mariners. To undertake the Petroleum Activities Program in a manner that prevents a substantially adverse effect on the potential displacement of marine users, Woodside therefore consults AMSA – Marine Safety and AHO on its proposed activities. Woodside considers each of the responsibilities of the departments and agencies and determines those that would either be involved in the incident response itself or in relation to the regulatory or decision-making capacity with respect to planning for the unlikely event of a worst-case hydrocarbon release incident response specific to the Petroleum Activities Program. Feedback received, if any, is assessed in accordance with the intended outcome of consultation.
- The list of those government departments and agencies assessed as relevant is set out in **Table 1**.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation and summarised at **Table 2 and Table 3** as appropriate to the relevance assessment.

Woodside does not consult with departments or agencies with interests that do not overlap with risks and impacts specific to the proposed petroleum activity in the EMBA or would not be involved in incident response planning.

5.3.2 Regulation 25(1)(d)

To identify a relevant person for the purposes of regulation 25(1)(d) of the Environment Regulations, the meaning of “functions, interests or activities” needs to be understood. In regulation 25(1)(d) of the Environment Regulations, the phrase “functions, interests or activities” should be construed broadly and consistently with the objects of the Environment Regulations (regulation 4) and the objects of the EPBC Act (section 3A).

In developing its methodology for consultation, Woodside acknowledges that the guidance on the definition of functions, interests and activities is as follows in accordance with NOPSEMA’s *GL2086 – Consultation in the course of preparing an environment plan* guideline (May 2023):

Functions	Refers to a power or duty to do something.
Interests	Conforms to the accepted concept of ‘interest’ in other areas of public administrative law and includes any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation.
Activities	Broader than the definition of ‘activity’ in regulation 5 of the Environment Regulations and is likely be directed to what the relevant person is already doing.

Woodside’s methodology for determining ‘relevant persons’ for the purpose of regulation 25(1)(d) of the Environment Regulations includes consideration of:

- whether a person or organisation has functions interests or activities that overlap with the Operational Area and EMBA
- whether a person or organisation’s functions, interests or activities may be affected by Woodside’s proposed planned or unplanned activities.

On the topic of consulting outside of Australia’s jurisdiction, when assessing potential impacts from planned and unplanned activities for this EP, it was determined there was an extremely low probability of an unplanned hydrocarbon release entering international waters (**Section 6.8.3**), specifically Indonesian and Timor Leste waters. Consideration has been given to the functions, interests or activities that may be affected by the activities to be carried out should a worst-case scenario eventuate, noting that modelling completed to predict the extent of potential impact is based on there being no mitigative controls in place. The more realistic scenario is that appropriate mitigation controls set out in Woodside’s Oil Spill Preparedness and Response Mitigation Assessment and Oil Pollution First Strike Plans would be in place or will be implemented.

The obligation to consult must be construed in a practical and pragmatic way that makes this process reasonable and workable,⁷ and capable of being discharged within a reasonable time.⁸ The obligation to identify relevant persons for the purpose of consultation must be capable of practicable and reasonable discharge. The Regulations require relevant persons, and their interests, to be readily ascertainable to the titleholder.⁹ In the case of Indonesia and Timor Leste, which comprises extensive coastlines and potentially remote communities, Woodside considers potential relevant persons within these communities are not readily ascertainable, for reasons including that there are limited electronic records and public records which allow for the identification of potential functions, interests or activities, e.g. fisheries, tourism licences and permits.

For example, there are no known licensing requirements either in Australia or in Indonesia or Timor Leste for traditional fishers, therefore, no publicly available information to identify and make contact with persons for consultation purposes. The logistics of access to these fishers, the nature of their activities and distance and remoteness from the Operational Area of this activity of over 1300

⁷ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [109], [136], [138], [141]

⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [136].

⁹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [136], [147], [153]

kilometres makes international consultation impractical to discharge from a reasonable time and efforts perspective.

Given the extremely low probability of potential impacts, the difficulty of identifying international individuals, and the impracticality of engaging where feedback on unplanned impacts is highly unlikely to inform proposed activities, consultation with international individuals is not required or the activities described in this EP.

Having regard to nature and scale and given the extremely low probability of potential impacts (which are the highly unlikely occurrence of spill traversing international waters), the current processes in place with Department of Foreign Affairs and Trade (DFAT) and the processes and consultation triggers set out in the Woodside's Oil Spill Preparedness and Response Mitigation Assessment and Oil Pollution First Strike Plans provide a mechanism for consultation in international waters that will be complied with at the appropriate time, if an incident occurs. In such circumstances, consultation with the DFAT discharges the requirement for consultation with international persons.

Woodside will continue to consult the DFAT for proposed activities outside of Australia's jurisdiction including in the event of a hydrocarbon spill that is likely to traverse international waters as described in the Oil Pollution Emergency Plan – Appendix H of this EP. The process for working with DFAT to manage activities and consultation in the highly unlikely event of a hydrocarbon spill that may traverse international waters is described in the Oil Pollution Emergency Plan – Appendix H of this EP.

5.3.2.1 Identification of relevant persons under regulation 25(1)(d)

Relevant persons under regulation 25(1)(d) are defined as a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP. In identifying relevant persons, Woodside considers:

- the planned activities to be carried out under this EP (described in **Section 3**)
- the EMBA by unplanned activities (identified in **Section 4** and assessed in **Section 6**).

To identify relevant persons who fall within regulation 25(1)(d), Woodside adopts the following methodology, and then undertakes consultation with relevant persons.

As a general proposition, Woodside assesses whether a person or organisation is a relevant person having regard to:

- whether a person or organisation has functions interests or activities that overlap with the Operational Area and EMBA
- whether a person or organisation's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities to be carried out under the EP.

This assessment will include applying judgement, knowledge and current literature.

Further, to assist in identifying the full range of relevant persons, Woodside considers the impacts and risks associated with its proposed activities and considers the broad categories of relevant persons who may be affected by the activities proposed to be carried out under the EP. The broad categories are identified in **Table 5-1** and identification methodology applied as set out in **Table 5-2**.

The list of those persons or organisations assessed as relevant and persons or organisations Woodside separately chose to contact is set out in **Table 1**.

Feedback received, if any, is assessed in accordance with the intended outcome of consultation and applying the categories of relevant persons methodology outlined in **Table 5-2**, as appropriate.

Feedback from relevant persons is summarised at **Table 2**. Feedback from persons assessed as not relevant but whom Woodside chose to contact or self-identified and Woodside assessed as not relevant are summarised at **Table 3**.

Table 5-1: Categories of relevant persons

Category	Explanation
Commercial fisheries (Commonwealth and State) and peak representative bodies	Commonwealth or State Commercial Fishery with a fishery management plan recognised under the Commonwealth <i>Fisheries Management Act 1991</i> and Western Australian <i>Fish Resources Management Act 1994</i> , which may be amended from time to time. Commonwealth peak fishery representative bodies are identified by AFMA. WAFIC is the peak representative body for state fishers in Western Australia.
Recreational marine users and peak representative bodies	Charter boat, tourism and dive operators identified by DPIRD specific to the location of the proposed activity. Representative bodies are the recognised peak organisation(s) for recreational marine users.
Titleholders and Operators	Registered holder of an offshore petroleum title or GHG title governed by the <i>OPGGs Act</i> and associated regulations.
Peak industry representative bodies	Recognised peak organisation(s) for the oil and gas sector.
Traditional Custodians (individuals and/or groups/entity)	Traditional Custodians are First Nations Australians who hold cultural rights and interests, or have cultural functions or perform cultural activities over particular lands and waters. Where a First Nations person, group or entity self-identifies and/or asserts cultural rights, functions, interests or activities they will be included in the definition of Traditional Custodian for the purpose of this EP.
Nominated Representative Corporations	Nominated representative corporations are Traditional Custodians' nominated representative institutions such as Prescribed Body Corporates (PBC). PBCs are established under the <i>Native Title Act 1993</i> by Traditional Custodians to represent their entire Traditional Custodian group (defined broadly by reference to descents from an ancestor set who were known to be the Traditional Custodians at the time of European colonisation) and their interests including, among other things, management and protection of cultural values.
Native Title Representative Bodies	A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions, set out in Part 11 of the <i>Native Title Act 1993</i> , which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies.
Historical heritage groups or organisations	Legislated or government enlisted groups or organisations responsible for the management of marine heritage.
Local government and recognised local community reference/liaison groups or organisations	Local government governed by the <i>Local Government Act 1995</i> (WA) which is responsible for representing the local community. Recognised local community reference/liaison group or organisation in relation to oil and gas matters.
Other non-government groups or organisations	Non-government organisation with public website material targeting the proposed activity.
Research institutes and local conservation groups or organisations	Research institutes are government or private institutions that conduct marine or terrestrial research. Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.

Table 5-2: Methodology for identifying relevant persons within the environment that may be affected undertaken under subcategory 25(1)(d) – by category

Category	Relevant Person Identification Methodology
<p>Commercial fisheries (Commonwealth and State) and peak representative bodies</p>	<p>Woodside assesses relevance for commercial fisheries (Commonwealth and State) and their representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> • Define the parameters having regard to timing, location and duration of the proposed petroleum activity. • Confirm whether the EMBA overlaps with the fisheries management area (i.e. the spatial area the fishery is legally permitted to fish in) (see Section 4.10). <p>Woodside acknowledges WAFIC’s consultation guidance¹⁰ (accessed on 2 February 2023), that Titleholders develop separate consultation strategies for significant unplanned events (for example oil spill) where Titleholders can demonstrate the likelihood of such events occurring is extremely low. WAFIC’s guidance is that consultation on unplanned events resulting in an emergency scenario should only be undertaken if an incident occurs.</p> <p>For Commonwealth and State commercial fisheries, Woodside assesses the potential spatial and temporal extent for interaction with the fishery by reviewing AFMA ABARES and DPIRD FishCube data within the Operational Area and EMBA (see Section 4.10).</p> <p>Assessment of Relevance</p> <p>State commercial fisheries that have been assessed as having a potential for interaction within the Operational Area or EMBA (see Section 4.10) are assessed as relevant to the proposed activity. Woodside acknowledges WAFIC’s consultation guidance¹ (see above) and applies this by:</p> <ul style="list-style-type: none"> • directly consulting fishery licence holders that are assessed as having a potential for interaction in the Operational Area • consulting fisheries that are assessed as having a potential for interaction in the EMBA via WAFIC. <p>Commonwealth commercial fisheries that have been assessed as having a potential for interaction within the Operational Area or EMBA (see Section 4.10) are assessed as relevant to the proposed activity.</p> <p>If Woodside has identified that a Commonwealth or State fishery is a relevant person, then Woodside also consults the fisheries relevant representative body. For example, WAFIC represents the interests of State fisheries in Western Australia. If a State fishery is identified as relevant, Woodside would also identify WAFIC as relevant. Recognised Commonwealth fishery representative bodies are identified by AFMA via its website. WAFIC is the only recognised State fishery representative body.</p>
<p>Recreational marine users and peak representative bodies</p>	<p>Woodside assesses relevance for recreational marine users and peak representative bodies using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. From Woodside knowledge and operating experience, knowledge of recreational marine users in the area. This assessment is both activity and location based. 2. Defining the parameters having regard to timing, location and duration of the proposed petroleum activity. 3. Assessing the potential spatial and temporal extent for interaction with recreational marine users by reviewing DPIRD FishCube data to assess whether there has been activity within the EMBA in the past 5 years. <p>Assessment of Relevance</p> <ol style="list-style-type: none"> 1. Recreational marine users that have been active in the past 5 years within the EMBA are assessed as relevant to the proposed activity. Woodside is provided with the contact details of charter, boat tourism and dive operators specific to the region of the EMBA by DPIRD to consult with the relevant persons. 2. If Woodside has identified recreational marine users as relevant persons, then Woodside also consults identified peak recreational marine user representative bodies. For example, Recfishwest represents the interests of recreational fishers. These representative bodies are identified via Woodside’s existing consultation list, which is updated as appropriate via advice from known groups and DPIRD.

¹⁰ [Consultation Approach for Unplanned Events - WAFIC.](#)

Category	Relevant Person Identification Methodology
<p>Titleholders and Operators</p>	<p>Woodside assesses relevance for other Titleholders and operators using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Using WA Petroleum Titles (DMIRS-011) to determine overlap with other Titleholders or Operators permit areas within the EMBA. 2. From Woodside knowledge and operating experience, knowledge of other operators in the area. 3. Woodside produces a map showing the outcome of this assessment. <p>Assessment of Relevance</p> <p>Titleholders and Operators whose permit areas are identified as having an overlap within the EMBA are assessed as relevant.</p>
<p>Peak industry representative bodies</p>	<p>Woodside assesses relevance for peak industry representative bodies using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Review peak industry representative bodies responsibilities that Woodside actively participates in, with consideration of overlap between industry focus area and Woodside's proposed activities within the EMBA. 2. Review Woodside's existing consultation list. 3. Search websites to identify whether any additional peak industry representative bodies have been created whose responsibilities may overlap with Woodside's proposed activities within the EMBA. <p>Assessment of Relevance</p> <p>Peak industry representative bodies whose responsibilities are identified as having an overlap with Woodside's proposed activities within the EMBA are assessed as relevant.</p>

Category	Relevant Person Identification Methodology
<p>Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations</p>	<p>Consistent with its understanding of the matters discussed in Section 4.9, to identify Traditional Custodian groups or individuals, Woodside:</p> <ul style="list-style-type: none"> • uses existing systems of recognition to identify First Nations groups who overlap or are coastally adjacent to the EMBA (for example, recognition provided under native title or cultural heritage legislation, or marine park management plans, or identification by other First Nations groups or entities) • notifies and invites consultation with First Nations people through their nominated representative corporation (for example PBCs); or, in the case of native title, and where appropriate, the Native Title Representative Body • requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders) • requests advice as to other First Nations groups or individuals that should be consulted • advertises widely so as to invite self-identification and consultation by First Nations groups and/or individuals. <p>Further detail to Woodside’s methodology is as follows.</p> <p>Woodside uses the databases of the National Native Title Tribunal to understand whether there are any:</p> <ul style="list-style-type: none"> • Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA • relevant Indigenous Land Use Agreements (ILUA), registered with the National Native Title Tribunal that overlap or are adjacent to the EMBA that may identify Traditional Custodians or representative bodies to contact regarding potential cultural values. <p>Where there is a positive determination of native title, Woodside contacts the PBC or, where their representative is a Native Title Representative Body, contacts the Native Title Representative Body.</p> <p>Where appropriate, Woodside contacts the relevant Native Title Representative Body to request a list of any First Nations groups asserting Traditional Custodianship over an area of coastline adjacent to the EMBA.</p> <p>Woodside reviews Commonwealth and State Marine Park Management Plans that overlap the EMBA which may identify Traditional Custodians or representative bodies to contact regarding potential cultural values.</p> <p>Woodside contacts First Nations groups or individuals identified by a Traditional Custodian, nominated representative corporation, Native Title Representative Body.</p> <p>Woodside requests the PBC to distribute consultation materials through its membership. Woodside is unable to contact this membership through any other means.</p> <p>Woodside has a number of public notification and information sharing processes by which individual Traditional Custodians can become aware of the proposed activity, its risks and impacts, and self-identify.</p> <p>Individuals that consider their functions, interests or activities may be affected by a proposed activity are provided an opportunity to self-identify for each EP. Woodside does not presume that self-identification for an activity, covered by another EP, automatically means an individual(s) functions, interest and activities may be affected by other activities where EMBA’s overlap. This decision is for the individual to make. The public notification, information sharing, and consultation processes Woodside puts in place enables Traditional Custodians to become aware of proposed activities, assess any risks and impacts to their values, and enable individuals to self-identify.</p> <p>Assessment of Relevance</p> <p>Traditional Custodian groups, entities or individuals and Nominated Representative Corporations who are identified through the above methodology and overlap or are coastally adjacent to the EMBA are assessed as relevant.</p>

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Category	Relevant Person Identification Methodology
<p>Native Title Representative Bodies</p>	<p>Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology:</p> <p>A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions set out in Part 11 of the <i>Native Title Act</i>, which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies.</p> <p>Woodside reviews National Native Title Tribunal RATSIB areas that overlap or are coastally adjacent to the EMBA.</p> <p>Assessment of Relevance</p> <p>Where the area for which a Native Title Representative Body is recognised under the <i>Native Title Act</i>, overlaps with the EMBA or is coastally adjacent to the EMBA, Woodside will assess the Native Title Representative Body as relevant.</p>
<p>Historical heritage groups or organisations</p>	<p>Woodside assesses relevance for groups or organisations whose responsibilities are focused on historical heritage using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Use the Australasian Underwater Cultural Heritage Database to assess any known records Maritime Cultural Heritage sites (shipwrecks, aircraft and relics) within the EMBA (see Section 4.9). <p>Assessment of Relevance</p> <p>Where there is a known underwater heritage site (shipwrecks, aircraft and relics) within the EMBA, the relevant group or organisation that manages the site will be assessed as relevant.</p>
<p>Local government and recognised local community reference/liaison groups or organisations</p>	<p>Woodside assesses relevance for local government and recognised local community reference/liaison groups or organisations using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Review Woodside maps (developed based on data from the WA Local Government, Sport and Cultural Industries My Council database and WA Local Government Association (WALGA) Local Government Directory maps) to assess any overlap between the local government's defined area of responsibility and the EMBA. 2. Hosts regular community reference/liaison group meetings. Members represent a cross-section of the community and local towns interests. Representatives are from community and industry and generally include, Woodside, State Government (for instance relevant Regional Development Commissions), Local Government, Indigenous Groups, Industry representative bodies, Community and industry organisations. Woodside considers these reference/liaison groups to be the appropriate recognised representatives of the local community for the oil and gas sector. 3. Review the community reference/liaison group's terms of reference to determine its area of responsibility and any overlap with the EMBA. For example, the Exmouth Community Liaison Group's area of responsibility in relation to Woodside's operational, development and planning activities, is defined in the terms of reference as the Exmouth sub-basin. Comparatively, the Karratha Community Liaison Group's area of responsibility is the Pilbara region (i.e. onshore). <p>Assessment of Relevance</p> <p>The local government whose defined area of responsibility overlaps the EMBA is assessed as relevant.</p> <p>The community reference/liaison group whose defined area of responsibility overlaps the EMBA is assessed as relevant and consulted collectively via the relevant reference/liaison group.</p>

Category	Relevant Person Identification Methodology
Other non-government groups or organisations	<p>Woodside assesses relevance for other non-government groups or organisations using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Review Woodside's existing consultation list. 2. Search websites of registered non-government groups or organisations (i.e. registered with an Australian Business Number (ABN) and publicly available contact information) that may have public website material specific to the proposed activity at the time of development of the EP. 3. Look for the organisation's publicly available mission statement (or purpose) that clearly describes their collective functions, interests or activities. 4. Review current website material to identify targeted information which demonstrates functions, interests or activities relevant to the potential risks and impacts associated with planned activities. <p>Assessment of Relevance</p> <p>Registered non-government groups or organisations with current targeted public website material specific to the proposed activity at the time of developing the EP and who have demonstrated functions, interests or activities relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation will be assessed as relevant.</p>
Research institutes and local conservation groups or organisations	<p>Woodside assesses relevance for research institutes and local conservation groups or organisations using the following next steps in its methodology:</p> <ol style="list-style-type: none"> 1. Review Woodside's existing consultation list. 2. Search websites for research institutes that may operate within the EMBA. This assessment is both activity- and location-based. 3. Search websites for local conservation groups or organisations that regularly conduct conservation activities within the EMBA. <p>Assessment of Relevance</p> <p>Where there is known research being undertaken by a research institute within the EMBA, the research institute that is conducting the research will be assessed as relevant.</p> <p>Local environmental conservation groups who regularly conduct conservation activities or have demonstrated conservation functions, interests or activities within the EMBA are assessed as relevant. This assessment is both activity and location based.</p>

5.3.3 Regulation 25(1)(e)

In addition to assessing relevance under regulation 25(1)(d) of the Environment Regulations, Woodside has discretion to categorise any other person or organisation as a relevant person under regulation 25(1)(e).

5.3.3.1 Identification of relevant persons under regulation 25(1)(e)

Woodside adopts a case-by-case approach for each EP to assess relevance under regulation 25(1)(e).

5.3.4 Persons or Organisations Woodside Chooses to Contact

In addition to undertaking consultation with relevant persons under regulation 25(1) of the Environment Regulations, there are persons or organisations that Woodside chooses to contact, from time to time, in relation to a proposed activity. For example, these are persons or organisations:

- that are 'not relevant' pursuant to regulation 25(1) but that Woodside has chosen to seek additional guidance from, for example, to inform the correct contact person that Woodside should consult, or engage with
- that are 'not relevant' pursuant to regulation 25(1) but have been contacted as a result of consultation requirements changing or updated guidance from the Regulator

- where it is unclear what their functions, interests or activities are, or whether their functions, interests or activities may be affected. In this circumstance, engagement is required to inform relevance under Woodside's methodology. Woodside follows the same methodology for assessing a person or organisations relevance as it does during its initial assessment (as described in **Figure 5-1** and **Section 5.3**). The result of Woodside's assessment of relevance during the development of the EP is outlined at **Table 1**.

5.3.5 Assessment of Relevant Persons for the Proposed Activity

The result of Woodside's assessment of relevant persons in accordance with regulation 25(1) of the Environment Regulations is outlined at **Table 1** and **Appendix F, Table 2**.

Persons or organisations that Woodside assessed as not relevant but chose to contact at its discretion in accordance with **Section 5.3.2.1** or self-identified and Woodside assessed as not relevant are summarised at **Table 1** and **Appendix F, Table 3**.

5.4 Consultation Material and Timing

Regulation 25(2) provides that a titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person. Regulation 25(3) provides that the titleholder must allow a relevant person a reasonable period for the consultation.

As set out in **Section 5.2**, Woodside notifies relevant persons, of the proposed activities, respecting that consultation is voluntary (for the relevant person) and collaborates on a consultation approach where further engagement is sought by the relevant person. Woodside understands that the consultation process should be appropriate for the category of relevant persons and that not all persons or organisations will require the same level of engagement. Woodside recognises that the level of engagement is dependent on the nature and scale of the Petroleum Activities Program. Woodside recognises published guidance for good practice consultation relevant to different sectors and disciplines. Woodside's methodology for providing relevant persons with sufficient information as well as a reasonable period of time to provide feedback is set out in this section.

5.4.1 Sufficient Information

Woodside produces a Consultation Information Sheet for each EP. This is provided to relevant persons and organisations and is also available on Woodside's website for interested parties to access and to provide feedback on. The Consultation Information Sheet typically includes a description of the proposed petroleum activity, the Operational Area, where the activity will take place, the timing and duration of the activity, a location map of the Operational Area and EMBA, a description of the EMBA, relevant exclusion zones as well as a summary of relevant risks and mitigation and/or management control measures relevant to the proposed petroleum activity. It also sets out contact details to provide feedback to Woodside.

Woodside recognises that the level of information necessary to assist a person or organisation to understand the impacts of the proposed activity on their functions, interests or activities may vary and, also may depend on the degree to which a relevant person is affected. For example, Woodside considers that relevant persons who may be impacted by planned activities in the Operational Area, as a result of temporary displacement due to exclusion zones, may require more targeted information relevant to their functions, interests or activities. Woodside also acknowledges NOPSEMA's brochure entitled *Consultation on offshore petroleum environment plans information for the community*, which advises consultees that they may inform titleholders that they only want to be consulted in the very unlikely event of an oil spill.

Woodside places advertisements in selected local, state and national newspapers. This typically includes the name of the EP Woodside is seeking feedback on, an overview of the activity, the consultation feedback date and the ways in which a person or organisation can provide feedback.

Advertising in the local paper in the area of the activity is also consistent with the public notification process under section 66 of the *Native Title Act* for native title applications. Woodside typically aligns advertisement feedback timeframes with the timing described below. Feedback received is assessed in accordance with **Section 5.5.1** to determine relevance and evidenced in **Table 1** as appropriate.

Woodside utilises a range of tools to provide sufficient information to relevant persons, which may include one or more of:

- Consultation Information Sheet available on Woodside’s website
- Summary Consultation Information Sheet, presentations or summaries specific to a particular relevant person group
- subscription available on Woodside’s website to receive notification of new Consultation Information Sheets for Woodside EPs
- emails
- letters
- phone calls
- face-to-face meetings (virtual or in person) with presentation slides or handouts as appropriate
- maps outlining a persons or organisations defined area of responsibility in relation to the proposed activity, for example a fisheries management area or defence training area
- community meetings, as appropriate.

Woodside recognises information may need to be provided to relevant persons in an iterative manner during the consultation process. Woodside considers that genuine two-way engagement may be demonstrated via information on incorporation of controls, where applicable, being provided to the relevant person so that the relevant persons understand how their input has been considered in the development of the EP.

Woodside communicates with relevant persons in different ways. Woodside recognises that as part of genuine two-way dialogue, these forms of communication may evolve, including for example due to changes to organisation representation, as relationships are further established, or an alternative form of communication is expressed by a person or organisation. Woodside acknowledges there might be limitations in how it can consult with relevant persons.

Typical forms of communication for categories of relevant persons are set out in **Table 5-3**.

Table 5-3: Forms of communication

Category of Relevant Person	Typically Accepted Form of Communication
Government departments/ agencies – marine	Woodside applies NOPSEMA’s guideline for engagement with Commonwealth government departments or agencies in line with GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023 by using email for its consultation unless another form of communication is requested.
Government departments/ agencies – environment	
Government departments/ agencies – industry	Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.

Category of Relevant Person	Typically Accepted Form of Communication
Commercial fisheries and peak representative bodies	Commonwealth commercial fisheries: Email is used as the primary form of communication with Commonwealth commercial fisheries in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Recreational marine users and peak representative bodies	<p>State commercial fisheries and recreational marine users: The Western Australian Department of Primary Industries and Regional Development (DPIRD) has responsibility for managing the <i>Fish Resources Management Act 1994</i> and <i>Aquatic Resources Management Act 2016</i>, which limits the provision of contact details from the register to the name and business address of licence holders. Alternative forms of communication are at the licence holder’s discretion. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p> <p>Peak representative bodies: Email is used as the primary form of communication with commercial fishery and recreational marine user peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p>
Titleholders and Operators	Email is used as the primary form of communication between titleholders and operators in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Peak industry representative bodies	Email is used as the primary form of communication with peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Traditional Custodians and nominated representative corporations	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Native Title Representative Bodies	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Historical heritage groups or organisations	NOPSEMA’s guideline (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023) for engagement with government departments or agencies is used as a reference for Woodside’s approach for communicating with historical heritage groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Local government and recognised local community reference/liaison groups or organisations	<p>Local government: NOPSEMA’s guideline (GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023) for engagement with local government is used as a reference for Woodside’s approach for communicating with historical heritage groups or organisations.</p> <p>Community reference/liaison groups and chambers of commerce: Email is used as the primary form of communication with local community reference/liaison groups or organisations in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p>
Other non-government groups or organisations	Email is used as the primary form of communication with Other non-government groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Research Institutes and Local conservation groups or organisations	Email is used as the primary form of communication with research institutes and local conservation groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.

Information which is provided to relevant persons for the purposes of consultation on this EP is summarised at **Table 2**.

Table 3 sets out the information which is provided to persons or organisations that are not relevant for the purposes of regulation 25 of the Environment Regulations but which Woodside has chosen to contact.

When engaging in consultation, Woodside notifies relevant persons that, in accordance with regulation 25(4), the relevant person may request that particular information the person or organisation provides in the consultation not be published and that information subject to that request will not be published.

5.4.2 Reasonable period for consultation

Woodside seeks to consult in order to support preparation of its Environment Plan. Woodside recognises that what constitutes a reasonable period for consultation should be considered on a case-by-case basis, with reference to the nature, scale and complexity of the activity.

Woodside recognises that information may need to be provided to relevant persons in an iterative manner during the consultation process. Woodside considers that genuine two-way engagement may be demonstrated via information on incorporation of controls, where applicable, being provided to the relevant person so that the relevant person understands how their input has been considered in the development of the EP.

Woodside considers its methodology allows relevant persons a reasonable period for consultation (regulation 25(3) of the Environment Regulations). A reasonable period for all relevant persons, including Traditional Custodian relevant persons, to participate in consultation for this EP has been provided.

The consultation period under this EP has satisfied benchmark periods under other relevant legislative processes:

- Regulation 30 of the Regulations sets out a public consultation period of 30 days.
- The Department of Mines and Petroleum “Guidelines for Consultation with Indigenous People by Mineral Explorers” directs a period of 21 to 30 days of consultation with traditional owners.
- While repealed, guidance taken from the Aboriginal Cultural Heritage Act 2021—Consultation Guidelines (Government of Western Australia, 2023) suggests that up to 12 weeks may be a reasonable period of time to allow identification, contact, and response, from First Nations peoples (subject to any alternative timeframe being agreed through co-design of consultation).

This period of consultation demonstrates that Woodside has provided a “reasonable period” for relevant persons to consult in accordance with regulation 25(3) of the Environment Regulations. Commentary in the *Tipakalippa Appeal* judgment limits consultation to a process that must be capable of being discharged within a reasonable time:

“it must be taken to be the regulatory intention that the consultation requirement cannot be one that is incapable of being complied with within a reasonable time.”¹¹

Woodside seeks feedback in order to support preparation of its environment plan. What constitutes a reasonable period for consultation is considered on a case-by-case basis, with reference to the person being consulted and the nature, scale and complexity of the activity.

Woodside's typical approach to enable a reasonable period for consultation is as follows:

- Advertise in selected local, state and national newspapers to give persons or organisations the opportunity to understand the activity and identify whether their functions, interests or activities may be affected.

¹¹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [136].

- Provide consultation materials directly to identified relevant persons as well as persons who are not relevant but Woodside chose to contact, and provide a target date for feedback. Woodside acknowledges feedback may be received from relevant persons after the target date.
- Acknowledge the way in which Woodside provides consultation information may vary depending on the relevant person or organisation, and may depend on the degree to which a relevant person or organisation is affected. Different consultation processes may be required for relevant persons and organisations depending on the information requirements.
- Follow up with relevant persons prior to EP submission. Where possible, Woodside will endeavour to use an alternative method of communication to contact the relevant person.
- Engage in two-way dialogue with relevant persons or organisations where feedback is received.

Table 2 and Table 3 sets out a history of consultation and demonstrates that a reasonable period of consultation has been afforded for each relevant person.

Woodside considers that the “reasonable period” of consultation for this EP has closed.

As detailed in **Section 5.6**, if comments and feedback are received after the EP has been submitted, Woodside will consider those comments and update controls as appropriate, at all stages during the life of the EP as per Woodside’s ongoing consultation approach as described in **Section 5.7**.

5.4.3 Discharge of Regulation 25

The Full Federal Court made clear in the Tipakalippa Appeal that consultation should be approached in a “reasonable”, “pragmatic” and “not so literal” way, so that consultation obligations were capable of being met by titleholders (**Section 5.5.1**).¹² Consultation is a “real world activity” and must be capable of reasonable discharge.¹³ The Full Federal Court referred to Native Title cases as an illustration that reasonable limits should be applied to consultation efforts to ensure the process is workable.¹⁴

When the titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, the regulation 25 consultation requirements are met.¹⁵ Meeting these obligations requires the evaluative judgment to determine reasonable satisfaction of the consultation obligation, and as such, the regulator uses its discretion to determine if these criteria are met. The nature of the person being consulted, and their function, interest and activity that may be affected, will inform the manner of consultation and the reasonable period to be afforded.¹⁶

The titleholder is not required to obtain consent from a consultee to engage in the activity or confirmation from a consultee that consultation is complete. A titleholder is required to provide an opportunity to consult - the Federal Court has commented that a “reasonable opportunity” for consultation must be afforded to relevant persons.¹⁷ A reasonable opportunity may not be every opportunity requested and is limited to reasonable opportunities to consult.

Woodside has completed all steps required to discharge its consultation obligations. Woodside has provided sufficient information and a reasonable period of time to enable relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities, and sufficient time to provide relevant feedback for Woodside to assess relevant persons’ objections or claims and action the assessment and response. Woodside has also provided a

¹² Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [98], [103]-[104] and [109].

¹³ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [89].

¹⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [96] and [103].

¹⁵ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 29.

¹⁶ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 30 and Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].

¹⁷ Cooper v National Offshore Petroleum Safety and Environmental Management Authority (No 2) [2023] FCA 1158 at paragraph [11]; Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].

reasonable opportunity for there to be genuine two-way dialogue on environmental impacts and concerns.

Woodside has discharged its duty under regulation 25 of the Environment Regulations. Woodside considers that consultation under regulation 25 is complete.

Table 2 and Table 3 of this EP sets out the history of consultation under regulation 25. To the extent a relevant person says that it has further information to share or claims that consultation under regulation 25 has not been completed, **Table 2 and Table 3** provide reasons specifically why Woodside considers consultation under regulation 25 has been met in relation to that relevant person.

5.5 Context of Consultation Approach with First Nations

To comply with regulation 25 of the Environment Regulations, Woodside identifies and consults Traditional Custodians whose functions, interests or activities may be affected by the activities under an Environment Plan.

5.5.1 Approach to Methodology – Woodside’s Interpretation of Tipakalippa

Woodside has implemented a consultation methodology consistent with regulation 25 and guidance provided in the Tipakalippa Appeal (**Section 5.2**). Woodside’s consultation methodology allows for a sufficiently broad capture of Traditional Custodian relevant persons, provides for informed consultation, follows cultural protocols and allows a reasonable opportunity for consultation with Traditional Custodians whose functions, interests or activities may be affected by the activity described in this EP (**Section 5.5.2.1 to 5.5.3.2**).

Woodside notes the Full Federal Court discussed several *Native Title Act 1993* (Cth) (**NTA**) cases in response to a submission made in that case that a requirement under regulation 25 to consult “each and every” relevant person would be “unworkable”. The reference to native title cases dealt with how decision-making processes under the NTA requiring “all” members of a group to be contacted for communal approval are interpreted by courts in a “reasonable”, “pragmatic” and “not so literal” way,¹⁸ and how obligations to consult “each and every” person under regulation 25 should be interpreted in a similarly pragmatic way so that consultation is workable. The reference to NTA authorities was made by analogy:

“It can be seen that the terms of [the native title legislation] are somewhat absolute – “all”. However, [the native title legislation] has consistently been construed in a way that is not so literal ... The cases concerning [the native title legislation] ... have reiterated ... that [the native title legislation] does not require that “all” of the members of the relevant claim group be involved in the decision. The key question will be whether a reasonable opportunity to participate in the decision-making process has been afforded by the notice for a relevant meeting.”¹⁹

*“We consider the authorities in relation to processes under the NTA to be **illustrative** of how a seemingly rigid statutory obligation to consult persons holding a communal interest may operate in a workable manner”²⁰ (emphasis added).*

“there is no definition of what constitutes “consultation for the purpose of ref 11A.. A titleholder will need to “demonstrate” to NOPSEMA that what it did constituted consultation appropriate and adapted to the nature of the interests of the relevant persons”²¹ (emphasis added).

The Judgment in the Tipakalippa Appeal makes it clear that a Titleholder will have some decisional choice in identifying which natural person(s) are to be approached, how the information will be given to allow the “relevant person” to assess the possible consequence of the proposed activities on their

¹⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [98], [103]-[104] and [109].

¹⁹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [98].

²⁰ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [96].

²¹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [104].

functions, interests or activities, and how the requisite consultation is undertaken.²² Woodside takes this to mean that consultation is not fixed to a rigid process, and indeed, will need to be adapted so that it is informed by the relevant person or group. Woodside has met its regulation 25 requirements through its consultation methodology (**Section 5.5.2**).

Consistent with the Tipakalippa Appeal, Woodside considers NTA-style “full group” meetings are not the only way for there to be compliance with regulation 25 in relation to Traditional Custodian relevant persons. Nominated representative corporations (such as Prescribed Bodies Corporate (PBCs) established under the NTA) have a designated role of representing the views of their member Traditional Custodians. They have established methods for engaging with their own members. Woodside will not undermine the purpose and authority of nominated representative corporations by requiring full group meetings where the nominated representative corporations have not requested engagement of members via full group meetings. We do not consider it appropriate for titleholders to direct or challenge the nominated representative corporations on how to engage with their members.

Woodside's approach described below demonstrates that sufficient information and a reasonable opportunity is provided to individual Traditional Custodians to provide feedback on Woodside activities beyond the opportunity provided to nominated representative corporations.

5.5.2 Consultation Method

Woodside's First Nations team has experience in engaging and working with First Nations organisations and individuals, including having worked within the Commonwealth native title and cultural heritage systems and state and territory cultural heritage and land rights systems, for several decades. The team understands the complexities of making information accessible to groups and individuals and engaging in accordance with First Nations groups' established channels of communication and methods of consultation. The First Nations team exercises its professional judgement and is deeply respectful of long-standing relationships (where in place) when considering consultation with First Nations groups. The First Nations team's approach is also informed by the established systems of recognition for First Nations groups and their nominated representative corporations within particular jurisdictions.

For example, the methodology for engaging with First Nations groups in the Northern Territory tends to centre around engagement through Aboriginal land councils (under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cth)) as well as community meetings that target clan groups where they do not have PBCs or other nominated representative corporations to represent them. By contrast, recognition for First Nations groups and their nominated representative corporations in Western Australia falls under the *Native Title Act 1993* (Cth) because the vast majority of the Western Australian coastline is settled under the native title regime. This means that the methodology and process for consultation in Western Australia places greater emphasis on, but is not limited to Native Title Representative Bodies and PBCs. Native title determinations provide certainty about the appropriate Traditional Custodian groups that have the cultural authority to speak for country adjacent to the EMBA, and also help Woodside to identify Traditional Custodian persons and groups asserting Traditional Custodianship. The Judgment in the Tipakalippa Appeal endorses methods of consultation with groups of relevant persons that are appropriate and adapted to the characteristics of groups.²³ Woodside's consultation methodology is adapted and appropriate to the recognised systems of communal interests in Western Australia.

In Western Australia (relevant for this EP), Woodside has sought to follow the established, effective and respectful means of communication used by Native Title Representative Bodies and nominated representative corporations (including PBCs) with their respective First Nations communities. Woodside follows these processes for the appropriate broad capture of individuals' awareness of

²² Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [47] and [48].

²³ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95],[104],[153].

our activities, to self-identify (**Section 5.5.2.2**), and to provide feedback to inform the management of environmental impacts and risks.

Using these tools, Woodside communicates information about Environment Plans by:

- advertising in relevant newspapers. This encourages self-identification, by advertising proposed activities widely through newspapers that have national and intra-state circulation, i.e., Koori Mail, National Indigenous Times, The West Australian.
- creating carefully considered Consultation Summary Sheets with information developed by an Indigenous member of the First Nations Team to remove jargon and provide relevant information for people to have informed understandings about the activities.
- direct contact through nominated representative corporations.
- utilising social media (i.e. Facebook/Instagram), texts and emails. These mediums are the preferred communication methods used by Traditional Custodians throughout Western Australia and on that basis used by Native Title Representative Bodies and other government agencies and industry, to engage with Traditional Custodians or call meetings. First Nations woman, Professor Bronwyn Castle through 10 years of research found “Social media is an intrinsic part of daily life. The use of Facebook is around 20 per cent higher [among First Nations people] than the national average across all geographical locations” (Social media mob: being Indigenous online, Professor Bronwyn Carlson (2018)).
- For ongoing consultation post regulation 25 consultation, Woodside introduced a Program of Ongoing Engagement with Traditional Custodians which sets out Woodside's commitment to ongoing engagement and support to care for and manage country, including Sea Country. The program was developed in response to Traditional Custodian feedback.
- Woodside has members of its First Nations team who are based in Karratha and Roebourne and who serve as on-Country points of contact for First Nations organisations and individuals. These team members have broad local knowledge and established, on-the-ground relationships within communities. This helps contribute to positive outcomes including encouraging First Nations attendance and involvement at Woodside's information sessions and Community roadshows. Team members on the ground engage in a great deal of preparatory work including by distributing information and providing notice to the community to support First Nations attendance at information sessions and Community roadshows.
- From the commencement of engagement with Traditional Custodians, Woodside seeks direction on how they prefer to be consulted and has consulted accordingly. Consultation processes that are informed by Traditional Custodians and co-designed on a case-by-case basis and includes their direction as to cultural protocols, structure of consultation and whom to appropriately consult with (such as elders).
- Holding meetings on country at a place and time agreed with the Traditional Custodians and offering and providing financial assistance for meeting expenses (as appropriate).
- Providing information specifically designed to be easily understood, to reach all relevant people, and give a reasonable period of time for those people to make an informed assessment of the possible consequences of the proposed activity on them.

5.5.2.1 Identification of Relevant Persons

In order to undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations (**Section 5.2 and 5.3**).

Specific to Woodside's approach for identifying relevant Traditional Custodians, Woodside's First Nations Communities Policy and consultation approach is guided by Traditional Custodians by directing consultations through their nominated representative corporation. This has been

implemented by Woodside through consultation with a nominated representative corporation where that corporation has advised Woodside that it acts as the representative body for a Traditional Custodian group and has requested that Woodside engage with it as the representative body for that Traditional Custodian group.

Woodside asks nominated representative corporations (such as PBCs) and Native Title Representative Bodies to identify individuals that should be consulted, and enables individuals to self-identify in response to national and local advertising, social media and community engagement opportunities (**Section 5.5.3.2**). Where there is a nominated representative corporation for an area, unless directed by the nominated representative corporation, Woodside does not directly approach individuals for consultation, because this has the potential to undermine the role of the nominated representative corporations. Approaching individuals directly is a practice that is no longer considered acceptable because of divisions it has been shown to cause in communities. In addition to asking for the identification of individuals, Woodside also asks nominated representative corporations to distribute consultation information to whomever the nominated representative corporations deem appropriate including members of the nominated representative corporations who are communal rights holders.

Having said this, as set out in further detail in **Section 5.5.3.2**, individuals are also given the opportunity to self-identify, consult and provide their own feedback on the proposed activity. When approached in this way, Woodside will engage individuals as relevant persons and will also (subject to any confidentiality or cultural restrictions) advise the nominated representative body of the consultation where it relates to cultural values. These methods of consultation are consistent with requirements for notification under the *Native Title Act 1993* (Cth), such as under the future act provisions (section 29), which requires notification of the Native Title Representative Body, the PBC (or nominated representative) and notification through newspapers. The notification process has been selected as a respectful, practical and pragmatic analogue for consultation with First Nations peoples, rather than requiring members to be notified via a formal authorisation process which aims to seek, from members, authorisation of agreements and native title/compensation claims under the *Native Title Act*²⁴.

In this consultation, Woodside requested nominated representative corporations to identify any potential individual relevant persons for consultation, and to distribute consultation materials to their members. However, Woodside recognises the process is voluntary and it cannot compel nominated representative corporations (such as PBCs) to do so. Woodside also recognises that it would not be appropriate to seek to audit the nominated representative corporations for compliance with any member consultation request.

5.5.2.2 Opportunity to Self-identify and Identifying Other Individuals

Woodside requests nominated representative corporations and Native Title Representative Bodies to identify other individuals to consult with or individuals who may seek to self-identify for a proposed activity. Woodside also advertises broadly through Indigenous, national and local advertising, social media and community engagement opportunities to provide individuals with an opportunity to consult. Woodside does not directly approach individuals for consultation, as this undermines the role of the nominated representative corporations (**Section 5.5.2.1**). Woodside's approach to providing individual Traditional Custodians the opportunity to self-identify and consult for an Environment Plan is as follows:

- Woodside applies the principles of self-determination when consulting with Traditional Custodians by consulting through the Traditional Owners' authorised representative entities.
- Recognising the function of nominated representative corporations (such as PBCs) and Native Title Representative Bodies to represent communal interests and manage cultural values, Woodside requests that the information provided to representative entities is provided to their

²⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, at [104].

members but Woodside recognises the process is voluntary and Woodside cannot compel them to do so nor seek to audit the representative entities for compliance with any request.

- Representative entities cannot provide membership details to Woodside due to individual confidentiality requirements.
- Woodside requests advice as to who else Woodside should be consulting but recognises the process is voluntary and cannot compel nominated representative corporations to provide this information.
- Modern Indigenous engagement practises rely on the building and maintaining of respectful relationships. Most nominated representative corporations to date have requested the building of that relationship, where one is not already in place.
- While Woodside has, in some cases, approached individual directors and elders outside of this process due to requirements imposed in Environment Plan consultation, this approach is considered inappropriate by modern Indigenous engagement standards, fundamentally undermining the authority of the authorised representative entity and can be detrimental to the relationship.

For this proposed activity, Woodside requested nominated representative corporations (including PBCs) and Native Title Representative Bodies to identify any potential individual relevant persons for consultation, and to distribute consultation materials to their member base. However, Woodside recognises the process is voluntary and it cannot compel them to do so nor seek to audit the representative entities for compliance with any request. Woodside has not been directed to engage individual Traditional Custodians by nominated representative corporations for this proposed activity. Woodside has nevertheless provided reasonable opportunity for individual Traditional Custodians to engage in consultation through appropriate and adapted consultation methods.

5.5.3 Sufficient Information

Woodside recognises the information sufficient to allow a person or organisation to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities may vary and also may depend on the degree to which a relevant person is potentially affected.

Woodside produces a Consultation Information Sheet for each Environment Plan which is provided to relevant persons and organisations to provide the opportunity for feedback on the activity (**Section 5.4.1**). In response to Traditional Custodians' feedback, Woodside has tailored effective consultation methods for its activities, specifically designed for Traditional Custodians, so that information is provided in a form that is readily accessible and appropriate. The targeted Consultation Summary Sheet was developed and reviewed by Indigenous representatives so that content is appropriate to the intended recipients, is then provided to relevant Traditional Custodian groups. Phone calls are made to provide context to the consultation.

Where face to face consultation meetings are requested, Woodside coordinates engagement at the Traditional Custodians' location of choice (where practicable) and with their nominated attendees. Key project personnel, environmental and First Nations relations experts are typically present to enable effective communication and prompt response to questions. Materials for these sessions incorporate visual aids such as photos, maps and videos, and plain language suitable for people with a non-technical background.

During consultation, Woodside provides relevant persons with additional information as appropriate in response to requests. There is no requirement to provide relevant persons with all information or documents requested and a titleholder will have provided sufficient information even where it has not provided all information or documents requested.

Woodside has sought to provide sufficient information to individual members of nominated representative corporations (such as PBCs) by providing information to representative bodies and

requesting dissemination with members. However, Woodside recognises consultation is voluntary and it cannot compel them to do so, nor would it be appropriate to seek to audit the representative entities for compliance with any request.

5.5.3.1 Reasonable Period for Consultation

Woodside seeks to consult in order to support preparation of its Environment Plan. Woodside recognises that what constitutes a reasonable period for consultation should be considered on a case-by-case basis, with reference to the nature, scale and complexity of the activity (**Section 5.4.2**).

5.5.3.2 Discharge of Regulation 25

Woodside's consideration and approach to discharging regulation 25 of the Environment Regulations for all relevant persons is discussed in **Section 5.4.3**. In addition to this, Woodside has considered the application of regulation 25 specifically to First Nations based on the Tipakalippa Appeal.

In relation to Traditional Custodian relevant persons (and all relevant persons), Woodside has discharged its duty under regulation 25 of the Environment Regulations. Woodside considers that consultation under regulation 25 is complete (**Section 5.4.3**).

5.6 Providing Feedback and Assessment of Merit of Objections or Claims

There are a number of ways in which feedback can be provided. Feedback can be provided through the Woodside feedback email or via the Woodside feedback toll free phone line as outlined in the Consultation Information Sheet and the Woodside website. Where appropriate, consultation may also be supported by phone calls or meetings. An environment plan feedback form is also available on Woodside's website enabling stakeholders to provide feedback on proposed activities, or to request additional information.

Woodside consults widely on its EPs and notes that feedback is received in various forms. Feedback that is considered inappropriate or that puts the environment, health, safety or wellbeing of Woodside employees or operations at risk will not be tolerated. Woodside respects people's rights to protest peacefully and lawfully but actions that put the environment, health, safety or wellbeing of Woodside employees or operations at risk go beyond those boundaries.

Woodside accepts feedback and engages in consultation in order to achieve the aims set out in **Section 5.2**. Woodside recognises that there are persons and organisations that take a view that Woodside's operations and/or growth projects should be stopped or at least delayed as far as possible. Whilst Woodside assesses the merits of objections or claims received, it acknowledges NOPSEMA's guidance in its brochure entitled *Consultation on offshore petroleum environment plans information for the community*, which states that relevant persons are free to respond on any matter and raise any concern, however this may not be able to be considered if it is outside the scope or purpose of the environment plan and approval process, for example, statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities. Under regulation 34(g) of the Environment Regulations, there is no requirement for a relevant person to agree or confirm that they have been adequately consulted.

Feedback from relevant persons is reviewed and an assessment of the merits is made of information provided as well as objections or claims about the adverse impact of each activity to which the EP relates. This might, for instance, be done through a review of data and literature and for relevance to the nature and scale of the activity outlined in the EP. Consistent with the aim of consultation in **Section 5.2**, Woodside will consider information received when reviewing and designing measures to put in place to minimise harm to relevant persons and where reasonable or practical to further manage impacts and risks to ALARP and acceptable levels.

Woodside considers feedback during consultation from relevant persons and other persons Woodside chose to contact (see **Section 5.3.4**). This information is summarised in **Table 2 and**

Table 3 and includes a statement of Woodside's response, or proposed response, if any, to each objection and claim.

In accordance with regulation 26(8) of the Environment Regulations, sensitive information (if any) in an EP, and the full text of any response by a relevant person to consultation under regulation 25 of the Environment Regulations, must be contained in the sensitive information part of the plan and not anywhere else in the plan.

5.7 Ongoing Consultation

Consultation can continue to occur during the life of an EP, including after an EP has been accepted by NOPSEMA.

As per Woodside's ongoing consultation approach (refer to **Section 7.10**), feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP, including during its assessment and once accepted, in accordance with the intended outcome of consultation.

Should consultation feedback be received following the acceptance of an EP that identifies a measure or control that Woodside considers requires implementation or updates to meet the intended outcome of consultation, Woodside will apply its Management of Change and Review process as appropriate (see **Section 7.1.16**).

6 ENVIRONMENTAL IMPACT AND RISK ASSESSMENT, PERFORMANCE OUTCOMES, STANDARDS AND MEASUREMENT CRITERIA

6.1 Overview

This section presents the impact and risk analysis and evaluation, EPOs, EPSs and MC for the Petroleum Activities Program, using the methodology described in **Section 2**.

6.2 Analysis and Evaluation

As required by regulation 21(5) and 21(6) of the Environment Regulations, the analysis and evaluation demonstrate that the identified risks and impacts associated with the Petroleum Activities Program are reduced to ALARP, are of an acceptable level and consider all operations of the activity, including potential emergency conditions.

Impacts and risks identified during the ENVID (including Decision Type, current risk level, acceptability of risk and tools used to demonstrate acceptability and ALARP) have been divided into two broad categories:

1. planned (routine and non-routine) activities
2. unplanned events (accidents, incidents or emergency situations).

Within these categories, impact and risk assessment groupings are based on environmental aspect²⁵ (e.g. emissions, physical presence, etc). For all hazardous events considered, the worst credible consequence was assumed.

The ENVID identified 18 impacts and 16 risks associated with the Petroleum Activities Program. Planned activities and unplanned events are summarised in **Table 6-1** and **Table 6-2**. The assigned risk ratings were determined with controls in place as described in **Section 2.6.3**.

The analysis and evaluation for the Petroleum Activities Program indicate that current environmental risks and impacts associated with the activity are reduced to ALARP and are of an acceptable level, as discussed further in **Section 6.6** to **Section 6.8**.

²⁵ An environmental aspect is an element of the activity that can interact with the environment.

Table 6-1: Environmental impact and risk analysis summary table – planned activities

Aspect	EP Section	Source of Impact	Key Potential Environmental Impacts (refer to relevant EP section for details)	Controlled Impact Classification	Residual Impact Level (ALARP controls in place)	Acceptability of Impact	
Planned Activities (Routine and Non-routine)							
Physical presence: disturbance to marine users	6.6.1	Presence of NY FPSO and subsea infrastructure excluding and/or displacing other users from Petroleum Safety Zone and Operational Area respectively.	Potential isolated social impact potentially resulting from interference with other sea users, including the exclusion of other users, such as: <ul style="list-style-type: none"> shipping: no shipping lanes overlap operational area, localised exclusion of shipping traffic commercial fishing: low levels of fishing, minor to no potential for interaction tourism and recreation: expected to be infrequent. 	F	Socio-cultural – No lasting effect (<1 month). Localised impact not significant to environmental receptors.	Broadly acceptable	
		Presence of vessels excluding and/or displacing other users.					
Physical presence: disturbance to seabed	6.6.2	Presence of subsea infrastructure (including moorings and redundant infrastructure remaining infield until Facility EOFL) disturbing marine habitats.	Localised modification of seabed habitat within Operational Area. Potential slight, localised modification of seabed habitat within Operational Area with slight potential for impacts to water quality and benthic communities.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
		Subsea operations, inspection, maintenance and repair activities resulting in disturbance to seabed.		E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
Routine acoustic emissions: generation of noise during routine operations	6.6.3	Noise generated within the Operational Area from: <ul style="list-style-type: none"> operation of NY FPSO (including flaring) operation of subsea infrastructure vessels (including IMMR) helicopters. 	Potential localised physical or behavioural impacts to marine fauna.	F	Environmental – No lasting effect (<1 month). Localised impact not significant to environmental receptors.	Broadly acceptable	
Routine and non-routine discharges: discharge of hydrocarbons and chemicals during subsea operations and activities	6.6.4	Discharge of subsea control fluids.	Localised, short-term decrease in water quality around subsea system within the Operational Area. Potential slight short-term, localised decrease in water quality at release location during IMMR activities.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
		Discharge of hydrocarbons remaining in subsea pipeworks and equipment as a result of subsea intervention works (including pigging).		E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
		Discharge of chemicals remaining in subsea pipe works and equipment or the use of chemicals for subsea IMMR activities.		E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
		Discharge of minor fugitive hydrocarbons from subsea equipment.		E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable	
Routine and non-routine discharges (utility systems): discharge of sewage, putrescible waste, greywater, bilge water, drain water, cooling water and brine	6.6.5	Discharge of sewage, grey water and putrescible waste from vessels and NY FPSO to the marine environment.	Potential slight, short-term, localised ongoing increase in nutrients and oxygen demand around FPSO and vessels.	F	Cumulative E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
		Discharge of deck water from NY FPSO and bilge water from vessels to the marine environment.	Potential slight, short-term localised decrease in water quality at discharge location.	F		Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
		Discharge of RO brine from vessels and NY FPSO, and CWF effluent from NY FPSO, to the marine environment.	Potential slight, localised increase in salinity at the discharge location.	F		Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable

Aspect	EP Section	Source of Impact	Key Potential Environmental Impacts (refer to relevant EP section for details)	Controlled Impact Classification	Residual Impact Level (ALARP controls in place)	Acceptability of Impact
		Discharge of cooling water from vessels and NY FPSO to the marine environment.	Potential slight, localised increase in water temperature, and short-term water quality changes around discharge location.	F	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
Routine and non-routine atmospheric and greenhouse GHG emissions	6.6.6	NY FPSO and vessel fuel combustion emissions, NY FPSO operational flaring and fugitive emissions.	Potential to result in localised, temporary reduction in air quality, generation of dark smoke, and contribution to greenhouse gas emissions.	F	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
		NY emissions associated with third party transport of products, refining and combustion	Potential to result in localised, temporary reduction in air quality, generation of dark smoke, and contribution to greenhouse gas emissions.	F	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
Routine light emissions: light emissions from NY FPSO, vessels operations and operational flaring	6.6.7	Light emissions from NY FPSO and vessels.	Potential for short-term, localised behavioural disturbance of phototactic species in close proximity to FPSO and vessels.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable
		Light emissions from NY FPSO during flaring.	Potential for short-term, localised behavioural disturbance of phototactic species in close proximity to FPSO and vessels.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Broadly acceptable

Table 6-2: Environmental impact and risk analysis summary table – unplanned events

Aspect	EP Section	Source of Risk	Key Potential Environmental Impacts (Refer to relevant EP section for details)	Risk Rating			Acceptability of Risk	
				Consequence Classification	Residual Impact Level (ALARP controls in place)	Likelihood		Residual Risk Rating
Unplanned Events (Accidents/Incidents)								
Unplanned hydrocarbon or chemical release: hydrocarbon and chemical during transfer, storage and use	6.7.1	Accidental spill of hydrocarbons to the environment during bunkering/refuelling.	Potential for localised water column pollution and adverse effects to marine biota as a result of minor chemical/hydrocarbon discharges.	D	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	2	M	Broadly acceptable
		Accidental discharge of chemicals to the marine environment from storage, use or transfer.		E		2	M	Broadly acceptable
Unplanned discharges: hazardous and non-hazardous waste management	6.7.2	Incorrect disposal or accidental discharge of non-hazardous and hazardous waste to the marine environment.	Potential for temporary impacts to the surrounding environment, water quality and marine sediments with slight potential for short-term impacts to marine fauna.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	2	M	Broadly acceptable
Physical presence: interaction with marine fauna	6.7.3	Physical presence of vessels resulting in collision with marine fauna.	Potential injury or death of marine fauna (single animal), including protected species.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	1	L	Broadly acceptable
Physical presence: introduction of invasive marine species (IMS)	6.7.4	Invasive species in vessel ballast tanks or on vessels/submersible equipment.	Potential introduction of IMS possibly resulting in an alteration of the localised environment. Potential short-term interference with or displacement of other sea users.	E	Environment – Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes. Socio-cultural – Slight, short-term impact (<1 year) to a community or area/item of cultural significance.	1	L	Broadly acceptable

Aspect	EP Section	Source of Risk	Key Potential Environmental Impacts (Refer to relevant EP section for details)	Risk Rating			Acceptability of Risk	
				Consequence Classification	Residual Impact Level (ALARP controls in place)	Likelihood		Residual Risk Rating
Unplanned Events (Accidents/Incidents) – MEEs								
Unplanned hydrocarbon release: Loss of well containment (MEE-01)	6.8.3	Release of hydrocarbons resulting from loss of subsea well containment.	Long-term impacts to habitats including sensitive nearshore areas of offshore islands and coastal shorelines. Localised reduction in water quality with potential for acute toxic response over localised area. Disruption to marine fauna, including protected species. Potential medium-term interference with or displacement of other sea users.	A	Environment – Catastrophic, long-term impact (>50 years) on highly valued ecosystem, species, habitat or physical or biological attribute. Socio-cultural – Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued area/item of international cultural significance.	1	H	Acceptable if ALARP
Unplanned hydrocarbon release: subsea flowline and riser loss of containment (MEE-02)	6.8.4	Loss of hydrocarbons to the marine environment due to a subsea flowline and riser loss of containment	Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential medium-term interference with or displacement of other sea users.	B	Environment – Major, long-term impact (10 to 50 years) on highly valued ecosystems, species, habitat or physical or biological attributes Socio-cultural – Major, long-term impact (5 to 20 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	2	H	Acceptable if ALARP
Unplanned hydrocarbon release: topsides loss of containment (MEE-03) ²⁶	6.8.5	Hydrocarbon release from topside process equipment to the marine environment and atmosphere	Potential moderate medium-term impacts to the marine environment: including disruption to marine fauna, including protected species and impacts to water quality.	C	Environment – Moderate, medium-term impact (2 to 10 years) on ecosystems, species, habitat or physical or biological attributes.	1	M	Broadly acceptable
		Hydrocarbon release from topsides non-process equipment to the marine environment	Potential medium-term interference with or displacement of other sea users.	C	Socio-cultural – Moderate, medium-term impact (2 to 5 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	1	M	Broadly acceptable
Unplanned hydrocarbon release: offloading equipment loss of containment (MEE-04)	6.8.6	Hydrocarbon release from NY FPSO offloading equipment to the marine environment and atmosphere.	Potential long-term impacts to the marine environment. Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential medium-term interference with or displacement of other sea users.	B	Environment – Major, long-term impact (10 to 50 years) on highly valued ecosystems, species, habitat or physical or biological attributes. Socio-cultural – Major, long-term impact (5 to 20 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	1	M	Broadly acceptable
Unplanned hydrocarbon release: fpso cargo tank loss of containment (MEE-05)	6.8.7	Hydrocarbon release caused by a cargo tank loss of containment.	Potential long-term impacts to the marine environment. Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential long-term interference with or displacement of other sea users.	A	Environment – Catastrophic, long-term impact (>50 years) on highly valued ecosystem, species, habitat or physical or biological attribute. Socio-cultural – Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued area/item of international cultural significance.	1	H	Acceptable if ALARP
Unplanned hydrocarbon release: loss of structural integrity (MEE-06)	6.8.8	Hydrocarbon release caused by a loss of structural integrity of the FPSO hull, leading to: <ul style="list-style-type: none"> MEE-02 – Subsea flowline and riser loss of containment MEE-03 – Topsides loss of containment MEE-04 – Offloading equipment loss of containment, or MEE-05 – FPSO cargo tank loss of containment 	Potential long-term impacts to the marine environment. Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential long-term interference with or displacement of other sea users.	A	Environment – Catastrophic, long-term impact (>50 years) on highly valued ecosystem, species, habitat or physical or biological attribute. Socio-cultural – Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued area/item of international cultural significance.	1	H	Acceptable if ALARP

²⁶ MEE classification based on reputational risk.

Aspect	EP Section	Source of Risk	Key Potential Environmental Impacts (Refer to relevant EP section for details)	Risk Rating			Acceptability of Risk	
				Consequence Classification	Residual Impact Level (ALARP controls in place)	Likelihood		Residual Risk Rating
Unplanned hydrocarbon release: loss of marine vessel separation (MEE-07)	6.8.9	Hydrocarbon release from flowline and riser to the marine environment and atmosphere	Potential significant impacts to the marine environment. Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential long-term interference with or displacement of other sea users.	B	Environment – Major, long-term impact (10 to 50 years) on highly valued ecosystems, species, habitat or physical or biological attributes. Socio-cultural – Major, long-term impact (5 to 20 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	1	M	Broadly acceptable
		Hydrocarbon release from topsides equipment, offloading equipment or cargo tanks to the marine environment and atmosphere.		A	Environment – Catastrophic, long-term impact (>50 years) on highly valued ecosystem, species, habitat or physical or biological attribute. Socio-cultural – Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued area/item of international cultural significance.	1	H	Acceptable if ALARP
Unplanned hydrocarbon release: loss of control of suspended load (MEE-08)	6.8.10	Dropped object causing damage to the flowlines and riser that results in a hydrocarbon release to the marine environment and atmosphere.	Potential significant impacts to the marine environment. Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential long-term interference with or displacement of other sea users.	B	Environment – Major, long-term impact (10 to 50 years) on highly valued ecosystems, species, habitat or physical or biological attributes	1	M	Broadly acceptable
		Dropped object causing damage to the topsides equipment that results in a hydrocarbon release to the marine environment and atmosphere.		B	Socio-cultural – Major, long-term impact (5 to 20 years) to a community, social infrastructure or highly valued area/item of national cultural significance.	1	M	Broadly acceptable
MEE common failure mechanisms: SCE failure and human error	6.8.11	Generic SCE failure. There are a number of causes which contribute to failures of SCEs and other systems which might protect against a MEE. These include: <ul style="list-style-type: none"> • maintenance errors • defects • electrical supply failure • hydraulic supply failure • adverse environmental conditions. 	See MEE-01 to MEE-08.	N/A	N/A	N/A		

6.2.1 Cumulative Impacts

Woodside has assessed the cumulative impacts of the Petroleum Activities Program in relation to other relevant petroleum activities or facilities, which could realistically result in overlapping temporal and spatial extents. There are other offshore petroleum facilities in close proximity to the Operational Area, as described in **Section 4.10.8**. Cumulative impacts are discussed for sources of risk and impacts where such impacts were deemed to be credible.

6.3 Environmental Performance Outcomes, Standards and Measurement Criteria

Regulation 21(7) of the Environment Regulations requires that an EP includes EPOs, EPSs and MC that address legislative and other controls to manage the environmental risks and impacts of the activity to ALARP and Acceptable levels.

EPOs, EPSs and MC for the Petroleum Activities Program have been identified to allow Woodside’s environmental performance to be measured and through the implementation of this EP, to determine whether the EPOs and EPSs have been met.

The EPOs, EPSs and MC specified are consistent with legislative requirements and Woodside’s standards and procedures. They have been developed based on the legislation, codes and standards, good industry practices and professional judgment outlined in **Section 2.6.1.4** and **Section 2.8**, as part of the acceptability and ALARP justification process.

The EPOs, EPSs and MC are presented throughout this section. A breach of these EPOs or EPSs constitutes a ‘Recordable Incident’ under the Environment Regulations (refer to **Section 7.9.4**).

6.4 Presentation

The analysis and evaluation (ALARP and acceptability), EPOs, EPSs and MC are presented in tabular form throughout this section, as shown in the sample below. Non-bold italicised text in this example table denotes the purpose of each part of the table, with reference to the relevant sections of the Regulations and/or this EP.

Context														
<i>Description of the context for the impact/risk. Regulation 21(1), 21(2) and 21(3)</i>														
<i>Description of the Activity – Regulation 21(1)</i>				<i>Description of the Environment – Regulations 21(2)(3)</i>				<i>Consultation – Regulation 25</i>						
Impacts and Risks Evaluation Summary														
<i>Summary of ENVID outcomes</i>														
Source of Risk Regulation 21(1)	Environmental Value Potentially Impacted Regulations 21(2)(3)							Evaluation Section 2						
	<i>Soil and Groundwater</i>	<i>Marine Sediment</i>	<i>Water Quality</i>	<i>Air Quality (incl Odour)</i>	<i>Ecosystems/Habitat</i>	<i>Species</i>	<i>Socio-economic</i>	<i>Decision Type</i>	<i>Consequence/Impact</i>	<i>Likelihood</i>	<i>Risk Rating</i>	<i>ALARP Tool</i>	<i>Acceptability</i>	<i>Outcome</i>
<i>Summary of source of risk/impact</i>														

Description of Source of Risk or Impact
<i>Description of the identified risk/impact including sources or threats that may lead to the impact/risk or identified event. Regulation 21(1).</i>
Impact or Consequence Assessment
Environmental Value/s Potentially Impacted
<i>Discussion and assessment of the potential impacts to the identified environment value/s. Regulation 21(5) (6). Description of potential impacts to environmental values aligned to Woodside Risk Matrix consequence descriptors.</i>

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS) ²⁷	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
ALARP/Hierarchy of Control Tools Used – Section 2.6.2				
<i>Summary of control considered to ensure the impacts and risks are continuously reduced to ALARP. Regulation 21(5).</i>	<i>Technical/logistical feasibility of the control. Cost/sacrifice required to implement the control (qualitative measure).</i>	<i>Qualitative commentary of impact/risk that could be averted/environmental benefit gained if the cost/sacrifice is made and the control is adopted.</i>	<i>Proportionality of cost/sacrifice vs environmental benefit. If proportionate (benefits outweigh costs), the control will be adopted. If disproportionate (costs outweigh benefits), the control will not be adopted.</i>	<i>If control is adopted, reference to Control No. provided.</i>
Major Environmental Events				
<i>MEEs are subject to additional analysis and evaluation as outlined in Sections 2.7 and 6.8.2. ALARP is demonstrated through controls being analysed for selection, based on their independence, and prioritised in accordance with hierarchy of controls, and further analysed to consider the type of effect the control provides.</i>				
ALARP Statement: <i>Made on the basis of the environmental risk/impact assessment outcomes, use of the relevant tools appropriate to the Decision Type (Section 2.6.1) and a proportionality assessment. Regulation 34(b).</i>				

Demonstration of Acceptability
Acceptability Statement: <i>Made on the basis of applying the process described in Section 2.8 and taking into account internal and external expectations, risk/impact to environmental thresholds and use of environment decision principles. Regulation 34(c)</i>

²⁷ Qualitative measure.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO No.</p> <p>S: Specific performance that addresses the legislative and other controls that manage the activity, and against which performance by Woodside in protecting the environment will be measured.</p> <p>M: Performance against the outcome will be measured through implementation of the controls via the MC.</p> <p>A: Achievability/feasibility of the outcome demonstrated via discussion of feasibility of controls in ALARP demonstration. Controls are directly linked to the outcome.</p> <p>R: The outcome will be relevant to the source of risk/impact and the potentially impacted environmental value²⁸.</p> <p>T: The outcome will state the timeframe during which the outcome will apply or by which it will be achieved.</p> <p>Regulation 21(7)(b)</p>	<p>C No.</p> <p>Identified control adopted to ensure that the impacts and risks are continuously reduced to ALARP.</p> <p>Regulation 21(5) (c).</p>	<p>PS No.</p> <p>Statement of the performance required of a control measure.</p> <p>Regulation 21(7)(a).</p>	<p>MC No.</p> <p>MC for determining whether the outcomes and standards have been met.</p> <p>Regulation 21(7)(c).</p>

6.5 Environment Risk/Impacts not Deemed Credible

The ENVID identified a source of environmental risk/impact that was assessed as not being applicable (not credible) within or outside the Operational Area as a result of the Petroleum Activities Program, and therefore, which was determined to not form part of this EP. This is described in the following sections for information only.

Shallow/Near-shore Activities

The Ngujima-Yin FPSO is located in water depths of approximately 340 m (LAT) at a distance of 43 km from the North West Cape of WA, at nearest landfall. Anchoring in the case of emergency situations has been considered within the Petroleum Activities Program. It is noted the Operational Area overlaps the Canyons Linking the Cuvier Abyssal Plain and the Cape Range Peninsula and the Continental Slope Demersal Fish Communities KEFs. Given the water depths within the Operational Area and the highly unlikely potential for anchoring activities to potentially occur, risks/impacts associated with shallow/nearshore activities such as anchoring and vessels grounding were not assessed as credible.

²⁸ Where impact/consequence descriptors are capitalised and presented within EPOs in **Section 6**; performance level corresponds with those aligned with the Woodside Risk Matrix (refer **Section 2.6.3**).

6.6 Planned Activities

6.6.1 Physical Presence: Disturbance to Marine Users

Context														
Facility Layout and Description – Section 3.5 Support Vessel Operations – Section 3.7 subsea inspection, monitoring, maintenance and Repair Activities – Section 3.10				Socio-cultural Environment – Section 4.10				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Presence of NY FPSO and subsea infrastructure excluding and/or displacing other users from PSZ and Operational Area respectively.							✓	A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 1
Presence of vessels excluding and/or displacing other users.							✓	A	F	-	-			
Description of Source of Impact														
<p>The NY FPSO and subsea infrastructure has been in operation since 2008 and has been marked on nautical charts since that time. The NY FPSO lies within a Petroleum Safety Zone. The Petroleum Safety Zone was gazetted on 13 October 2017 (Notice A575120), and remains in place until revoked. The Petroleum Safety Zone comprises the area within a 500 m radius of the STP mooring system. The 500 m Petroleum Safety Zone is shown as a “Restricted Area” on navigation charts. NOPSEMA prohibits all vessels, other than vessels or classes of vessels specified in the notice and vessels operated by authorised people, from entering or being present in the area of petroleum safety zones without the consent in writing of NOPSEMA. The Petroleum Safety Zone is a critical safety control intended to reduce the likelihood of interactions between vessels and the NY FPSO, which increases safety for both vessels and the FPSO. The NY FPSO is highly visible under most conditions (see Figure 3-1) and is well lit, and the nature of the NY FPSO (Suezmax class steel hull) ensures a clear radar return to alert ships fitted with anti-collision radars.</p> <p>The physical footprint of subsea infrastructure is highly localised and entirely contained within the Operational Area. The Australian Hydrographic Office (AHO) has been notified of the location of subsea infrastructure for marking on nautical charts. Water depths of subsea infrastructure range between approximately 340 m and 849 m (Table 3-1).</p> <p>Routine vessel activities associated with the Petroleum Activities Program are concentrated within the Petroleum Safety Zone (e.g. support vessels at the NY FPSO). Subsea support vessels may undertake activities (e.g. IMMR activities) within the Operational Area at any time, including the Operational Area beyond the Petroleum Safety Zone (1500 m around the infrastructure). The duration and location of these activities will vary depending on the activity being undertaken but vessels will only intermittently be present in the Operational Area, outside the Petroleum Safety Zone. Woodside ensures vessels undertaking the Petroleum Activities Program meet maritime requirements, including appropriate lights and shapes, and communication with other vessels.</p>														

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Impact Assessment

Exclusion and Displacement of Other Users

Interaction with other marine users due to the physical presence of in the Petroleum Activities Program may result in localised changes to the functions, interests or activities of other users. The duration of change will be for the period of the Petroleum Activities Program.

Commercial Fishing

Low levels of fishing have been observed since the NY FPSO began operating.

The Operational Area overlaps five Commonwealth and ten State managed commercial fisheries management areas. Fisheries data indicate that no Commonwealth managed and only three State managed fisheries have the potential for interaction with the Petroleum Activities Program, demonstrated by reported, active fishery effort (2017–2022) (**Section 4.10**). The three State-managed fisheries are the Mackerel Managed Fishery, Pilbara Line Fishery (condition) and West Coast Deep Sea Crustacean Managed Fishery (**Table 4-21**).

The Mackerel Managed Fishery reported three to seven active fishers between the 2017–2022 seasons, with consistent fishing effort since 2012 concentrated in coastal Pilbara reefs north-east of the Operational Area.

The Pilbara Line Fishery (condition) showed no active fishing effort within the Operational Area, however, has been active within in the wider EMBA, with up to five licences active within 60 nautical miles across the 2017-2022 seasons.

The West Coast Deep Sea Crustacean Managed Fishery reported less than three vessels may have been activity within or near-by (within 60 nautical miles) of the Operational Area.

Given the overlap of the Operational Area with the fishing block and the annual fishing effort, interactions with the Mackerel Managed, Pilbara Line (condition) and West Coast Deep Sea Crustacean Managed may occur.

For assessment of charter-based fishing for tourism, refer to Tourism and Recreation below.

As outlined above, historical fisheries status reports indicate that there is very little or no activity associated with these fisheries within the Operational Area. The presence of subsea infrastructure could present a hazard to bottom trawl fisheries, due to the risk of equipment entanglement and subsequent equipment damage/loss therefore these activities are likely to be permanently displaced by the presence of the subsea infrastructure. The North West Slope Trawl Fishery and the Western Deepwater Trawl Fishery overlap the Operational Area and use bottom trawls, although effort in these fisheries has not historically occurred within the Operational Area. Therefore, displacement or exclusion of commercial fisheries as a result of the Petroleum Activities Program is unlikely.

Consultation with fishing industry participants did not indicate any claims or objections from commercial fishers to the Petroleum Activities Program (**Section 5**).

The impact to commercial fishers as a result of the Petroleum Activities Program is the potential for highly localised displacement of effort, and of no lasting effect. As no trawling effort is expected to occur in the Operational Area, the potential for trawling gear to be snagged on subsea infrastructure is considered remote.

Traditional Fishing

Traditional fishing in the region is restricted to nearshore waters of the Australian mainland and islands (e.g. Barrow Island). No traditional fishing effort is known to occur in the Operational Area. Impacts such as displacement of traditional fishing effort are not expected to credibly occur as a result of the Petroleum Activities Program.

Tourism and Recreation

Tourism and recreation activity in the Operational Area is expected to be infrequent. There are no emergent features or natural values within the Operational Area that are considered tourist attractions. Recreational and charter fishing from vessels are the only tourism and recreation activities identified as potentially occurring in the Operational Area (**Section 4.10.6**). Fishing effort for Tourism Charter Operators were reported at the 10 NM reporting blocks overlapping the Operational Area, with up to three vessels active during the 2020–2021 season.

The annual GAMEX fishing tournament (usually run in March by the Exmouth Game Fishing Club) may result in increased offshore recreational fishing during this period. Operational experience to date has not indicated adverse interactions with recreational fishers occurs during GAMEX. Woodside's experience gained from operating the Nganhurra and NY FPSOs has shown that very little recreational (including charter) fishing takes place in the vicinity of the Operational Area. This is consistent with consultation outcomes (**Section 5**).

Given the distance from boating facilities (nearest established boat ramps and marina are at Tantabiddi, approximately 42 km from the Operational Area), lack of natural attractions and water depth of the Operational Area, very little interaction with tourism and recreational activities is expected to occur during the Petroleum Activities Program. As such, impacts to recreational and charter fishing are expected to be localised and of no lasting effect.

Shipping

Considerable commercial shipping occurs in the region (**Figure 4-2**), with commercial shipping traffic comprising vessels such as:

- offtake tankers
- support vessels for offshore oil and gas activities
- cargo traffic in shipping fairway to the west of the Operational Area.

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The presence of support vessels could potentially cause temporary disruption to commercial shipping. The Operational Area is subjected to vessel traffic that is likely to be associated with oil and gas support infrastructure, including support vessels for FPSOs in the area. No recognised shipping lanes overlap the Operational Area; the nearest fairway lies approximately 35 km north-west of the Operational Area. Most vessel activity in the vicinity of the Operational Area is associated with nodes such as offshore facilities (e.g. FPSOs) and ports; no such nodes occur within the Operational Area, other than the NY FPSO. Additionally, the NY FPSO has been operational since 2008, and the AHO has been notified of the location of subsea infrastructure for marking on nautical charts. Operational history of the NY FPSO indicates unauthorised commercial vessels enter the Petroleum Safety Zone very rarely.

The presence of the NY FPSO, associated subsea infrastructure and support vessels, is not expected to result in impacts to commercial shipping beyond a localised exclusion of shipping traffic from the Petroleum Safety Zone, and the temporary displacement of commercial shipping from subsea support vessels as a result of vessels undertaking activities in the Operational Area. This is considered a localised impact, and of no lasting effect.

Oil and Gas

The nearest other oil and gas facilities are:

- Ningaloo Vision FPSO (Santos), approximately 1 km from Operational Area
- Pyrenees Venture FPSO (Woodside), approximately 10 km from Operational Area
- Macedon Subsea Gas Field (Woodside), approximately 10 km from Operational Area.

The Operational Area overlaps the following titles (**Figure 4-13**):

- WA-35-L: Santos is the titleholder of WA-35-L, which is associated with the Ningaloo Vision FPSO. No subsea infrastructure of the NY facility overlaps WA-35-L, nor does the Petroleum Safety Zone associated with the NY facility overlap WA-35-L. The Operational Area does not overlap any production wells in WA-35-L.
- WA-32-L: Woodside is the titleholder of WA-32-L, which is associated with the Stybarrow field (the Stybarrow Venture FPSO is no longer on station). Subsea infrastructure associated with the NY facility overlapping WA-32-L consists of the rigid flowlines and control umbilicals. The Petroleum Safety Zone around the NY FPSO does not overlap WA-32-L. The Operational Area does not overlap any production wells in WA-32-L.
- WA-42-L & WA-43-L: Woodside is the titleholder of WA-42-L & WA-43-L, which is associated with the Pyrenees Venture FPSO and the Macedon Subsea Gas Field. No subsea infrastructure of the NY facility overlaps WA-42-L or WA-43-L, nor does the Petroleum Safety Zone associated with the NY facility overlap these titles. The Operational Area does not overlap any production wells in WA-42-L or WA-43-L.

Santos did not raise any concerns or objections during consultation in relation to this EP (**Section 5**). Woodside routinely consults with other titleholders where activities may affect their functions, interests and activities; no issues were raised by oil and gas stakeholders consulted in relation to this EP. Operational history of the NY FPSO has shown that interactions with other titleholders has not been an issue to date.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
<p>Contract vessels compliant with Marine Orders for safe vessel operations:</p> <ul style="list-style-type: none"> Marine Order 21 (Safety and emergency procedures) 2016 Marine Order 27 (Safety of navigation and radio equipment) 2016 Marine Order 30 (Prevention of collisions) 2016. <p>Compliance with Marine Orders 21, 27 and 30 reduces the likelihood of adverse interaction of vessels with other marine users.</p>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>Marine Orders 21, 27 and 30 are required under Australian regulations; implementation is standard practice for commercial vessels as applicable to vessel size, type and class.</p>	<p>Control based on legislative requirement – must be adopted.</p>	<p>Yes C 1.1</p>
<p>Implementation of a 500 m PSZ around the FPSO reduces the likelihood of interaction of vessels with the NY FPSO.</p>	<p>F: Yes CS: Minimal cost. Standard practice.</p>	<p>The PSZ is a requirement under Australian regulations and reduces the likelihood of interaction of vessels with the NY FPSO.</p>	<p>Control based on legislative requirement – must be adopted.</p>	<p>Yes C 1.2</p>
Good Practice				
<p>Notify AHO of location of new permanent infrastructure to enable update of maritime charts</p>	<p>F: Yes CS: Minimal cost. Standard practice.</p>	<p>Notification of AHO will enable them to update maritime charts, thereby reducing the likelihood of unplanned interactions with NY infrastructure.</p>	<p>Benefits outweigh cost sacrifice.</p>	<p>Yes C 1.3</p>

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Consultation undertaken in support of the Petroleum Activities Program, to ensure marine users are informed and aware, thereby reducing the likelihood of unplanned interactions with NY Infrastructure.	F: Yes CS: Minimal cost. Standard practice.	Consultation ensures marine users are informed and aware, thereby reducing the risk of unplanned interactions with NY infrastructure.	Benefits outweigh cost sacrifice.	Yes C 1.4
NY FPSO collision prevention system is implemented to alert marine vessels of the facility location, which reduces the likelihood of adverse interaction with other marine users.	F: Yes CS: Minimal cost. Standard practice.	NY collision prevention system equipment has the ability to alert marine vessels of the facility location which reduces the likelihood of adverse interaction with other marine users.	Control is WMS requirement – must be adopted.	Yes C 1.5
Professional Judgement – Eliminate				
Reduce the PSZ.	F: No. The PSZ is mandated by the OPGGS Act and is a safety and environment critical element; it cannot be reduced. CS: Not assessed, control not feasible.	Not assessed, control not feasible.	Not assessed, control not feasible.	No
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
Over-trawl protection on subsea infrastructure.	F: Yes. Over-trawl protection on subsea infrastructure could be fitted to NY subsea infrastructure. CS: Significant additional cost associated with the design and installation of trawl protection on subsea infrastructure.	Over-trawl protection on subsea infrastructure could mitigate against the potential for commercial fishing trawl gear to damage infrastructure or result in gear loss.	Given the limited portion of the Operational Area lies within the area open to trawl fishing, the cost of installing over-trawl protection is considered to be grossly disproportionate to the environmental benefit.	No

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
<p>ALARP Statement:</p> <p>On the basis of the environmental impact assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the potential impacts of the physical presence of the NY FPSO, subsea infrastructure and vessels on other users. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p>				

Demonstration of Acceptability
<p>Acceptability Statement:</p> <p>The impact assessment has determined that, given the adopted controls, the physical presence of the NY FPSO, subsea infrastructure and vessels represents a negligible impact with no lasting effect and a localised impact that is not considered a significant threat to commercial fishing, recreational fishing and/or shipping. The adopted controls are considered good oil-field practice/industry best practice and meet requirements of Australian Marine Orders, and expectations of AMSA and AHO provided in consultation with stakeholders. Further opportunities to reduce the impacts and risks have been investigated above.</p> <p>The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of physical presence of the NY facility and support vessels to a level that is broadly acceptable.</p>

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 1</p> <p>Prevent adverse interactions between support vessels/NY FPSO/subsea infrastructure and other marine users during the Petroleum Activities Program.</p>	<p>C 1.1</p> <p>Contract vessels compliant with Marine Orders for safe vessel operations:</p> <ul style="list-style-type: none"> Marine Order 21 (Safety of navigation and emergency procedures) 2016 Marine Order 27 (Safety of navigation and radio equipment) 2016 Marine Order 30 (Prevention of collisions) 2016. 	<p>PS 1.1</p> <p>Vessels contracted whose practices comply with Marine Orders as applicable to vessel size, type and class.</p>	<p>MC 1.1.1</p> <p>Marine verification records demonstrate compliance with standard maritime safety procedures (Marine Orders 21, 27 and 30).</p>
	<p>C 1.2</p> <p>Implementation of a 500 m PSZ around NY FPSO.</p>	<p>PS 1.2</p> <p>No adverse interactions between vessels/NY FPSO.</p>	<p>MC 1.2.1</p> <p>Records of adverse interactions in 500 m PSZ with other marine users entered into Incident database.</p>
	<p>C 1.3</p> <p>Notify AHO of location of new permanent infrastructure to enable update of maritime charts.</p>	<p>PS 1.3</p> <p>Woodside will notify AHO of location of new permanent infrastructure.</p>	<p>MC 1.3.1</p> <p>Records demonstrate AHO has been notified of location of new permanent infrastructure.</p>

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 1.4 Undertake consultation program to advise relevant persons of the Petroleum Activities Program and provide opportunity to raise objections or claims.</p>	<p>PS 1.4 Implement a consultation process that conforms to the requirements of the Environment Regulations.</p>	<p>MC 1.4.1 Records demonstrate a consultation program that conforms to the requirements of the Environment Regulations has been undertaken (refer to Section 5).</p>
	<p>C 1.5 NY FPSO collision prevention system is implemented to alert marine vessels of the facility location, which reduces the likelihood of adverse interaction with other marine users.</p>	<p>PS 1.5 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE Technical Performance Standard(s) to prevent environment risk related damage to SCEs for:</p> <ul style="list-style-type: none"> • P33 –Equipment Supporting Marine Navigation (within Operational Area); to: <ul style="list-style-type: none"> - manoeuvre the facility under self-propulsion away from hazardous conditions - provide critical information to enable safe navigation of the FPSO. • P34 – Collision Prevention Systems; to: <ul style="list-style-type: none"> - alert facility of a potential collision with marine vessels - alert marine vessels of facility location so that they may take timely action to avoid the facility and hence reduce likelihood of collision. 	<p>MC 1.5.1 Records demonstrate implementation of SCE technical Performance Standard(s) and Safety Critical Element Management Procedure.</p>

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6.6.2 Physical Presence: Disturbance to the Seabed

Context														
Facility Layout and Description – Section 3.5 Support Vessel Operations – Section 3.7 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10 Well Management and Maintenance Activities – Section 3.11			Physical Environment – Section 4.4 Biological Environment – Section 4.5				Consultation – Section 5							
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Presence of subsea infrastructure (including moorings and redundant infrastructure remaining infield until facility EOFL) disturbing marine habitats.		✓	✓		✓			A	E	-	-	LCS GP	Broadly Acceptable	EPO 3
Subsea operations, inspection, maintenance and repair activities resulting in disturbance to seabed.		✓	✓		✓			A	E	-	-			
Description of Source of Impact														
<p>Seabed disturbance associated with the Petroleum Activities Program can occur during operations and other activities, including from:</p> <ul style="list-style-type: none"> physical presence of the NY FPSO mooring system and subsea infrastructure (operational and redundant) subsea IMMR activities (Section 3.10) possibility of vessel anchoring (during emergency conditions) installation of mattresses for flowline protection. <p>The physical presence of subsea infrastructure may result in localised scouring around the infrastructure due to currents, subsurface waves, and seabed sediment fluid dynamics. Operational experience indicates scour around subsea infrastructure associated with the Petroleum Activities Program is localised with negligible impact to environmental receptors. Scour around subsea infrastructure may necessitate IMMR activities as part of integrity management practices.</p> <p>Flowline movement may occur as per design and within integrity margins along the flowline corridor. Normal flowline operational movement occurs due to factors such as flowline buckling, walking and varying metocean conditions. Lateral movement can occur within the flowline corridor. The extent of any flowline buckling and walking would be restricted to the Operational Area, and for safety reasons, Woodside will manage buckling and walking to within design limits. In order to maintain the integrity of subsea infrastructure, Woodside may be required to undertake routine subsea IMMR activities, as described in Section 3.10. IMMR activities may impact upon the seabed in the vicinity of the activity including (but are not limited to):</p> <ul style="list-style-type: none"> inspections – minor, localised sediment resuspension by ROV 														

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- marine growth removal – minor, localised resuspension of sediment; removal of marine biota from subsea infrastructure
- sediment relocation – minor, localised modification of benthic habitat and sediment resuspension
- span rectification flowline protection and stabilisation – minor, localised modification of benthic habitat within footprint of area subject to rectification/protection/stabilisation
- jumper and umbilical replacement – minor, localised modification of benthic habitat in the vicinity of the jumper/umbilical
- spool repair/replacement – minor, localised modification of benthic habitat in the vicinity of the spool.
- temporary laying of tools on seabed (e.g. seabed baskets).

The area of benthic habitat predicted to be impacted varies depending on the nature and scale of the IMMR activity. Span rectification activities are IMMR activities with the greatest potential to modify benthic habitats, due to the alteration of the existing soft sediment habitat to hard substrate. Woodside’s operational experience on the NWS indicates these activities are typically restricted to relatively short (tens of meters) linear sections of flowline, with areas of up to approximately 100 m² impacted.

Under routine operations, anchoring of vessels undertaking IMMR is avoided in the Operational Area but there may be non-routine activities that require anchoring for safety reasons.

Impact Assessment

Water and Sediment Quality

Seabed disturbance may include localised and temporary decline in water quality due to an increase in suspended sediment concentrations and sediment deposition caused by IMMR activities, particularly for cleaning activities where marine growth or scale becomes suspended in the water column and settles to the seabed. However, sediment loads are not expected to be significant due to the relatively small footprint for each activity (IMMR activities described above, and in **Section 3.10**).

Each discrete IMMR activity near the seabed is likely to cause a brief disturbance which may result in a transient plume of suspended sediment. This plume will subsequently be deposited down current as particles resettle. Such localised and short-term events may affect small areas of the seabed and consequently, impact the associated biota (typically sparsely distributed infauna and sessile epifauna). Such impacts are expected to be minor (e.g. ingestion of suspended sediment); impacts such as smothering of sessile biota are not expected to occur.

Benthic Habitats

The benthic habitat within the Operational Area is predominately soft sediment with sparsely associated epifauna which is broadly represented throughout the NWS Province (**Section 4.5**). Benthic communities of the soft sediment seabed are characterised by burrowing infauna such as polychaetes, with biota such as sessile filter feeders occurring on areas of hard substrate (such as subsea infrastructure). The infauna communities are also representative of the NWS province; being of low abundance and dominated by polychaetes and crustaceans (RPS Environment and Planning, 2012).

IMMR activities may result in potential impacts that may be categorised as:

- direct physical disturbance of benthic habitat
- indirect disturbance to benthic habitats from sedimentation.

Scour may result in localised impact to soft sediment benthic habitats, typically on the scales of meters to tens of meters. Subsequently, any impacts to benthos from scour around subsea infrastructure are expected to be localised, with no significant impacts to benthic habitats within the Operational Area.

As mentioned, flowline movement is limited to within design and integrity envelopes and may result in slight, localised impact to soft sediment benthic habitats, typically on the scales varying between meters to tens of meters laterally along the flowline corridors.

Direct seabed disturbance, including permanent modification of benthic communities, may result as a consequence of IMMR activities such as span rectification, flowline protection and stabilisation. These activities will typically disturb a small area (typically <100 m²) of soft sediment habitat, which is broadly represented in the Operational Area and wider NWS region. This habitat will be replaced by hard substrate (e.g. concrete mattresses, rocks etc) which is generally uncommon in the middle and outer NWS region.

Over time, this hard substrate is expected to be colonised by sessile benthic biota (e.g. sponges, gorgonians etc), which may support higher biodiversity benthic fauna (such as fish assemblages), than soft sediment habitats. The estimated overall extent of such direct seabed disturbance is extremely small in relation to the extent of the soft sediment habitats which are broadly represented within the Operational Area and the wider NWS province.

Key Ecological Features

Canyons Linking the Cuvier Abyssal Plain

The Operational Area overlaps 2.3% of the Canyons KEF, in the upper easternmost portion of the KEF (**Section 4.7**). Sections of the KEF have been shown to host relatively more diverse and abundant biota when compared to the

surrounding seabed beyond the canyons. Given the nature and scale of the Petroleum Activities Program, no adverse impacts to the ecological values of the KEF are expected to occur.

Continental Slope Demersal Fish Communities

A small portion of the southern extent of the Continental Slope Demersal Fish Communities KEF overlaps the Operational Area (**Figure 4-10**). As outlined in the discussion on benthic habitats above, changes to demersal fish communities as a result of the Petroleum Activities Program are expected to result in a localised increase in diversity and abundance of fish in the immediate vicinity of subsea infrastructure. No impacts to the ecological values of the Continental Slope Demersal Fish Communities KEF will occur as a result of the Petroleum Activities Program.

Ancient Coastline at 125 m Depth Contour

The Operational Area is approximately 500 m from the Ancient Coastline. The Operational Area represents a 1500 m radius buffer around the NY subsea infrastructure to facilitate vessel operations; the potential for seabed disturbance is much more localised (i.e. within tens of metres is the subsea infrastructure).

Benthic habitat surveys in the region (including within the Ancient Coastline at 125 m depth contour KEF) indicate that benthic habitats within the KEF are characterized by sand interspersed with areas of rubble and outcroppings of limestone pavement (AIMS, 2014a; RPS, 2011). Such habitats are widely distributed in the NWS Province. The geomorphic feature the KEF is associated with is represented worldwide and represents the coastline during a previous glacial period. Therefore, any potential impacts to this regional-scale KEF are expected to be negligible.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)²⁹	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
An ROV survey is undertaken post maintenance or repair activity to confirm temporary equipment has been removed and to record location of new subsea infrastructure	F: Yes CS: Minimal cost ROV as left survey is standard practice.	In accordance with OPGGS Act Section 572 (3) all temporary equipment is removed when no longer in use.	Legislative requirement.	Yes C 2.1
Remove redundant production infrastructure as soon as it's no longer used, nor to be used.	F: Yes. CS: Removal of property throughout the operational life where it is incorporated within or located close to live infrastructure introduces additional complexities and HSE risk that can be avoided if removed during EOFL decommissioning.	While subsea equipment is <i>in-situ</i> , risks and impacts to the seabed are considered to be low, so only a minor reduction in sediment disturbance from less infrastructure in the Operational Area if removal occurred immediately.	Cost of standalone retrieval work scopes are considered disproportionate to the benefit gained when considering the risks of retrieval during current operations versus risk of extending duration <i>in-situ</i> . Wet stored subsea infrastructure is also RBI assessed and managed while preserved to ensure integrity and retrieval options are maintained for removal.	No

²⁹ Qualitative measure.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)²⁹	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Monitoring and maintenance of redundant infrastructure is undertaken in accordance with the IMMR process.	F: Yes CS: Minimal cost. Standard practice.	Undertaken to enable removal of redundant infrastructure in accordance with Section 572(2) and (3) of the OPGGS Act.	Legislative requirement.	Yes C 2.2
Good Practice				
None identified.				
Professional Judgement – Eliminate				
No anchoring from vessels associated with the Petroleum Activity Program except in emergency situations or under issuing of a specific permit.	F: Yes CS: Minimal cost.	By minimising anchoring the potential impacts to benthic habitat is reduced.	Benefits outweigh cost sacrifice.	Yes C 2.3
Do not use ROV close to, or on, the seabed.	F: No. The use of ROVs (including work close to or occasionally landed on the seabed) is critical as the ROV is an integral part of IMMR activities. CS: Not assessed, control not feasible.	Not assessed, control not feasible.	Not assessed, control not feasible.	No
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
Monitoring and maintenance of subsea infrastructure to manage scour and flowline movement within integrity envelope.	F: Yes. ROV footage collected as part of subsea integrity surveys could be reviewed to observe and detect changed in seabed footprint. CS: Costs associated with the review of collected footage.	Monitoring and maintenance of subsea infrastructure confirms benthic seabed disturbance is limited to the design flowline corridor.	Control is WMS requirement – must be adopted.	Yes C 2.4 Refer also MEE-02

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS) ²⁹	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
<p>ALARP Statement</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts of seabed disturbance from subsea activities. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p>				
Demonstration of Acceptability				
<p>Acceptability Statement</p> <p>The impact assessment has determined that, given the adopted controls, seabed disturbance from subsea activities represents a slight, short-term impact to seabed. Further opportunities to reduce the impacts have been investigated above. The adopted controls are considered good oil-field practice/industry best practice. The potential impacts are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts of subsea activities to a level that is broadly acceptable.</p>				

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 2 Limit adverse impacts to seabed to Slight (E ³⁰) beyond the physical footprint of the facility infrastructure during the Petroleum Activities Program.	C 2.1 An ROV survey is undertaken post maintenance or repair activity to confirm temporary equipment has been removed and to record location of new subsea infrastructure.	PS 2.1 Temporary equipment is removed.	MC 2.1.1 As left survey confirms temporary equipment is removed.
	C 2.2 Monitoring and maintenance of redundant infrastructure is undertaken in accordance with the IMMR process.	PS 2.2 Location of equipment, including those made redundant by the installation of a replacement, are recorded and updated in the inventory.	MC 2.2.1 Records demonstrate that the IMMR process has been applied to redundant infrastructure.
	C 2.3 No anchoring from vessels associated with the Petroleum Activity Program, except in emergency situations or under issuing of a specific permit.	PS 2.3 No anchoring unless in an emergency or Woodside authorisation provided.	MC 2.3.1 Records demonstrate that any anchoring was in an emergency or approved by Woodside.

³⁰ Defined as 'slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attribute' as in **Section 2.6.3, Table 2-3.**

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 2.4 Monitoring and maintenance of subsea infrastructure to manage scour and flowline movement within integrity envelope.</p>	<p>PS 2.4 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related damage to SCEs for:</p> <ul style="list-style-type: none"> • P09 – Pipeline Systems <p>to maintain the minimum required mechanical integrity to prevent loss of containment due to scour/flowline movement.</p>	<p>Refer to MC 1.5.1 Section 6.6.1</p>

6.6.3 Routine Acoustic Emissions: Generation of Noise During Routine Operations

Context		
Facility Layout and Description – Section 3.5 Operational Details – Section 3.6 Support Vessel Operations – Section 3.7 Helicopter Operations – Section 3.8 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10	Protected Species – Section 4.6	Consultation – Section 5

Impacts and Risks Evaluation Summary

Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Noise generated within the Operational Area from: <ul style="list-style-type: none"> operation of NY FPSO (including flaring) operation of subsea infrastructure vessels (including IMMR) helicopters. 						✓		A	F	-	-	LCS	Broadly Acceptable	EPO ₃

Description of Source of Impact

The NY FPSO, subsea infrastructure, vessels, IMMR activities and helicopters generate noise both in the air and underwater, due to the operation of machinery, propeller movement, etc. Typical underwater noise for these sources are provided in **Table 6-3**. These noises contribute to and can exceed ambient noise levels, which range from around 90 dB re 1 µPa (root square mean sound pressure level [rms SPL]) under very calm, low wind conditions, to 120 dB re 1 µPa (rms SPL) under windy conditions (McCauley, 2005).

Table 6-3: Indicative source characteristics of underwater noise associated with the Petroleum Activities Program (JASCO Applied Sciences, 2010)

Acoustic Noise Sources	Estimated Sound Pressure Level (dB re 1 µPa rms SPL)	Frequency Range (kHz)
Vessels (continuous)		
FPSO	174	Broadband
Support vessel using DP	182	Broadband
Wellhead, Flowlines and Subsea Infrastructure (continuous)		
Wellhead	113	Broadband
Choke Valve	155	Broadband
IMMR Activity Noise (Impulsive)		

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Multibeam Echo Sounder	214	200–300
Side Scan Sonar	226	120–410
Sub-bottom Profiler (CHIRP)	205	1–12
Sub-bottom Profiler (Pinger)	214	2–12
Sub-bottom Profiler (Boomer)	212	0.5–5

Helicopter operations are discussed below.

Vessels

The main source of noise from vessels (both supply and support vessels) relates to using DP thrusters (i.e. cavitation from thruster propellers). Thruster noise is typically high intensity and broadband in nature, with sound pressure levels of 137 dB re 1 µPa at 405 m from a typical offshore support vessel holding station in strong currents (McCauley, 1998). McCauley (2005) measured underwater broadband noise up to approximately 182 dB re 1 µPa at 1 m (rms SPL) from a support vessel holding station in the Timor Sea; it is expected that noise levels up to this level may be generated by vessels using DP during the Petroleum Activities Program. Thruster noise from vessels holding station is typically the most intense underwater noise source from vessel activities; other sources from vessels (e.g. main engines when underway, machinery noise transmitted through the hull, etc) are typically considerably lower intensity noise (McCauley, 1998). Note that vessels undertaking the Petroleum Activities Program inherently minimise the use of DP, and there is little potential to further reduce DP use.

IMMR Activities

IMMR activities will generate different types of underwater noise, the loudest being acoustic emissions from survey equipment. Acoustic surveys that may be undertaken as part of IMMR activities including SSS, MBES and SBP surveys. These methods are typically used infrequently (e.g. SSS generally used for up to five days every four years); these acoustic sources are not constantly active during these infrequent IMMR activities.

Noise from the support vessel undertaking the IMMR activity would also contribute to the noise profile. Noise from the IMMR support vessels would be below those from the IMMR survey equipment and therefore is not considered further. Indicative source characteristics for typical acoustic survey equipment and from the support vessel conducting the IMMR activities are provided in **Table 6-3**.

Helicopters

Helicopter engines and rotor blades are recognised as a source of noise emissions. Activities relevant to the Operational Area will relate to the landing and take-off of helicopters on the NY facility and potentially subsea support vessels. During these critical stages of helicopter operations, safety is the highest priority. Helicopter noise is emitted to the atmosphere during routine helicopter flights. Noise levels for typical helicopters used in offshore operations (Eurocopter Super Puma AS332) at 150 m separation distance has been measured at a maximum of 90.6 dB (BMT Asia Pacific, 2005). Helicopter flights are at their lowest (i.e. closest point to the sea surface) during periods of take-off and landing from helidecks, which constitutes a relatively short phase of routine flight operations.

Wellhead, Flowlines and Subsea Infrastructure

The noise produced by an operational wellhead was measured by McCauley (2002a). The broadband noise level was very low, 113 dB re 1 µPa, which is only marginally above rough sea condition ambient noise. For a number of nearby wellheads, the sources would have to be in very close proximity (<50 m apart) before their signals summed to increase the total noise field (with two adjacent sources only increasing the total noise field by 3 dB). Hence, for multiple wellheads in an area, the broadband noise level in the vicinity of the wellheads would be expected to be of the order of 113 dB re 1 µPa. This would drop very quickly to ambient conditions on moving away from the wellhead, falling to background levels within <200 m from the wellhead.

Based on the measurements of wellhead noise discussed in McCauley (2002a), which included flow noise in flowlines, noise produced along a flowline may be expected to be similar to that described for wellheads, with the radiated noise field falling to ambient levels within a hundred metres of the flowline.

Woodside has undertaken acoustic measurements on noise generated by operating choke valves associated with the Angel platform (JASCO Applied Sciences, 2015). These measurements indicated choke valve noise is continuous, and the frequency and intensity of noise emitted depends on the rate of production from the well. Noise intensity at low production rates (16% and 30% choke positions) were approximately 154–155 dB re 1 µPa, with higher production rates (85% and 74% choke positions) resulting in lower noise levels (141–144 dB re 1 µPa). Noise from choke valve operation was broadband in nature, with most noise energy concentrated above 1 kHz. Subsea gas wells, such as those in the Angel study, experience higher flow velocities compared to oil wells; as such, the above noise intensity ranges are considered a conservative approximation for NY facility operations.

FPSO Machinery

The NY FPSO may use its main engines when manoeuvring on, or disconnected from, the STP mooring, which will generate underwater noise from hull vibrations and propeller cavitation. These activities are typically of short duration (hours to days). Machinery such as topside processing equipment may generate noise emissions. Noise emitted by topsides equipment is considered unlikely to contribute significantly to underwater noise levels. However, topsides

equipment and other machinery may contribute to hull vibrations, which may then be transmitted into the sea through the NY FPSO hull acting as a transducer. Such noise is typically constant during routine operations.

Measurement of underwater sound taken at the NY FPSO during 2010 during normal operations under calm conditions recorded average broadband source levels of 174 dB re 1 µPa. It was also observed that the NY FPSO was quieter than support vessels that were operating nearby (JASCO Applied Sciences, 2010). Source levels from the NY FPSO were comparable to source levels recorded from the Cossack Pioneer FPSO during normal operations, which ranged up to 181 dB re 1 µPa² m². This included measurements when its propeller was in use (slowly turning) (McCauley, 2002b). This higher source level recorded at Cossack Pioneer is considered representative of the source level at NY FPSO at intermittent times when there is a requirement to use its main engine and propeller.

Flaring (from FPSO)

The HP and LP flare system will generate noise from combustion. Noise from flaring represents a health and safety risk to personnel, and was considered in the design of the NY FPSO to manage the associated occupational health and safety risks (e.g. height specification of flare tower). Noise from flaring is emitted at the top of the flare tower, which is approximately 90 m above the main deck. Noise from the tip of the flare is not constrained and will spread spherically in all directions.

Received levels from airborne propagation modelling were used to ascertain the underwater received levels during flaring activities for a drilling and subsea installation activity (Woodside, 2019). Only a very small fraction of the acoustic energy produced from flaring will transmit through the air/water boundary due to the surface of water acting as a reflective plane and a significant component of acoustic energy reflecting into the air. While underwater received sound pressure level during flaring is estimated to be 136 dB re 1µPa at 1m (SPL) below the sea surface it is estimated to attenuate to ambient levels within a very short distance (e.g. metres) and therefore is not considered further in the impact assessment.

Impact Assessment

The Petroleum Activities Program is in waters between approximately 340 and 849 m deep. The values potentially impacted by acoustic emissions are predominantly pelagic species of fish, and migratory species such as whale sharks and cetaceans present in the area seasonally. Elevated underwater noise can affect marine fauna including cetaceans, fish, turtles, sharks and rays in three main ways (Richardson et al., 1995):

- by causing direct physical effects on hearing or other organs, including:
 - mortality/potential mortal injury resulting from exposure to noise (not considered credible given the noise sources associated with the Petroleum Activities Program)
 - permanent threshold shift (PTS) – permanent reduction in the ability to perceive sound following exposure to noise
 - temporary threshold shift (TTS) – temporary reduction in the ability to perceive sound following exposure to noise, with hearing returning to normal.
- by masking, or interfering with, other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey)
- through disturbance leading to behavioural changes or displacement from important areas.

The potential impacts of anthropogenic noise on marine mammals have been the subject of considerable research; reviews are provided by Richardson et al. (1995), Nowacek et al. (2007), Southall et al. (2007), Weilgart (2007) and Wright et al. (2007).

To inform the assessment, the impact thresholds provided in **Table 6-4**, * The 120 dB threshold may be adjusted if background noise levels are at or above this level.

Table 6-5 and **Note**: a range of sound units are provided in the table above, reflecting the range of studies from which the data has been derived. The difference in units presents difficulty in reliably comparing threshold values. Where practicable, the threshold values have been compared with indicative sound sources levels of the same sound unit types. The sound units provided in the table above include:

- *M-weighted sound exposure level (SEL): a weighted sound metric that emphasises the audible frequency bands for the receptor groups – low, mid and high frequency cetaceans. SEL units are time integrated and best suited for continuous noise sources, such as vessels holding station or continuous machinery noise.*
- *Root mean square (rms) sound pressure level (SPL): root mean square of time-series pressure level is useful for quantifying continuous noise sources (as per SEL point above).*

Note: The sound units provided in the table above for continuous noise include: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Table 6-6 were considered in relation to the credible sources of acoustic emissions.

Table 6-4: National Marine Fisheries Service sound exposure thresholds applicable to marine mammals, Southall et al. (2019)

Hearing Group	NOAA (2019)	Southall et al. (2019)			
	Behaviour	PTS Onset Thresholds (Received Level)		TTS Onset Thresholds (Received Level)	
	SPL (L_p ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)	Weighted SEL _{24h} ($L_{E,24h}$; dB re 1 μ Pa ² ·s)	PK (L_{pk} ; dB re 1 μ Pa)
Non-Impulsive (Continuous) Sounds					
Low-frequency cetaceans	120 *	199	-	179	-
High-frequency cetaceans		198	-	178	-
Dugongs		206	-	186	-
Impulsive Sounds					
Low-frequency cetaceans	160	183	219	168	213
High-frequency cetaceans		185	230	170	224
Dugongs		190	226	175	220

* The 120 dB threshold may be adjusted if background noise levels are at or above this level.

Table 6-5: Impact threshold for environmental receptors based on Popper et al. (2014)

Receptor	Impairment			Behaviour
	PTS	TTS	Masking	
Fish: no swim bladder	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: swim bladder not involved in hearing	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: swim bladder involved in hearing	170 dB rms SPL for 48 hrs	158 dB rms SPL for 12 hrs	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Sea turtles	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low

Note: a range of sound units are provided in the table above, reflecting the range of studies from which the data has been derived. The difference in units presents difficulty in reliably comparing threshold values. Where practicable, the threshold values have been compared with indicative sound sources levels of the same sound unit types. The sound units provided in the table above include:

- *M*-weighted sound exposure level (SEL): a weighted sound metric that emphasises the audible frequency bands for the receptor groups – low, mid and high frequency cetaceans. SEL units are time integrated and best suited for continuous noise sources, such as vessels holding station or continuous machinery noise.
- Root mean square (rms) sound pressure level (SPL): root mean square of time-series pressure level is useful for quantifying continuous noise sources (as per SEL point above).

Note: The sound units provided in the table above for continuous noise include: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Table 6-6: Thresholds for permanent threshold shift, temporary threshold shift and behavioural response onset in marine turtles for continuous and impulsive noise

Hearing group	Impulsive	Continuous				
	PTS onset thresholds: SEL24h (dB re 1 µPa ² .s)	TTS onset thresholds: SEL24h (dB re 1 µPa ² .s)	Behavioural response (dB re 1 µPa)	PTS onset thresholds: SEL24h (dB re 1 µPa ² .s)	TTS onset thresholds: SEL24h (dB re 1 µPa ² .s)	Behavioural response (dB re 1 µPa)
Marine turtles	204	189	166* 175+	220	200	(N) High (I) Moderate (F) Low#

Source: PTS and TTS thresholds (Finneran et al., 2017), * behavioural response threshold (impulsive) (NSF 2011), + behavioural disturbance threshold (impulsive) (McCauley et al., 2000), # behavioural response threshold (continuous) (Popper et al., 2014).

Note: The sound units provided in the table above for continuous noise include: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Vessel Noise

Using the thruster noise measured by McCauley (1998) as an indicative value for the potential thruster noise generated by vessels during the Petroleum Activities Program and the thresholds presented in * The 120 dB threshold may be adjusted if background noise levels are at or above this level.

Table 6-5, the potential for noise-induced mortality, PTS and TTS of cetaceans, fish, sea turtles and eggs/larvae is not considered credible.

However, masking and behavioural impacts may occur in close proximity (e.g. <1000 m) to the noise source. Using a simple cylindrical geometric spreading equation to estimate transmission loss (TL) of thruster noise at 182 dB re 1 µPa at 100 Hz (Table 6-7), potential impacts may include:

- cetaceans: potential behavioural disturbance out to approximately 1 km from noise source for low frequency cetaceans (e.g. humpback whales) and 10 km for mid and high frequency cetaceans (e.g. coastal dolphins)
- fish: potential masking and behavioural disturbance at near and intermediate range; likelihood of TTS is considered not to be credible given fish would move away from the source – demersal fish are not expected to be exposed to underwater noise above impact thresholds
- turtles: potential masking and behavioural disturbance at intermediate and far range.

Note the estimates in * The 120 dB threshold may be adjusted if background noise levels are at or above this level.

Table 6-5 are considered to under-estimate transmission loss, and are inherently conservative, due to:

- use of low frequency (100 Hz) component of thruster noise signature; note thruster noise is typically broadband in nature, with much of the noise energy at frequencies >100 Hz, which are absorbed more rapidly in seawater
- use of high intensity thruster noise (i.e. thruster operating at full power); most time using thrusters is at lower than full power, with concomitant reduction in cavitation noise intensity
- use of a cylindrical spreading model, which may underestimate the effect of geometric spreading.

All support vessels are required to comply with EPBC Regulation 2000 – Part 8 Interacting with cetaceans to reduce the likelihood of collisions with cetaceans (refer to Section 6.7.3). Implementing this control may incidentally reduce the noise generated by vessels in proximity to cetaceans, as vessels are travelling slower; slower vessel speeds may reduce underwater noise from machinery (main engines) and propeller cavitation. Fauna such as cetaceans, fish, and turtles are capable of moving away from potential noise sources, and there are no constraints to the movement of these fauna within the Operational Area.

Table 6-7: Estimated sound transmission loss for a 182 dB re 1 µPa source at 100 Hz frequency

Range (m)	Transmission Loss	Received
100	40.1	141.9
500	54.4	127.5
1000	61.0	121.0
2000	68.0	114.0

5000	79.0	103.0
10 000	90.0	92.0

Cetaceans

As the migration corridor BIAs for pygmy blue whales and humpback whales overlap the Operational Area, there is the potential for these species to be exposed to underwater noise levels that may alter their behaviour when they are present in the region during seasonal migrations. Tagging studies of pygmy blue whales have shown the migratory pathway appears to be in deeper water to the west of the Operational Area, and pygmy blue whales have not been observed from the NY FPSO (unlike humpback whales). Given the underwater noise levels that may credibly be generated during the Petroleum Activities Program, and the low likelihood of pygmy blue whales being present in the Operational Area, the potential for impact is considered highly unlikely.

Aerial surveys of humpback whales off North West Cape did not observe any apparent displacement of humpback whales from the area around the NY FPSO (RPS Environment and Planning, 2010a). The majority of humpback whales observed during these surveys were east of the NY FPSO, which is consistent with other surveys showing the majority of humpback whales migrate within continental shelf waters along Western Australia (Double et al., 2010, 2012a). Received noise levels are expected to reduce to 121 dB re μ Pa within 1 km of the NY FPSO, which is just above the threshold for behavioural impacts for low frequency cetaceans (120 dB re μ Pa) (McCauley, 1998).

Humpbacks are regularly observed in close proximity to the NY FPSO and vessels. Given the maximum source of noise is below TTS and avoidance behaviour is not observed, it is considered unlikely humpbacks are adversely impacted by noise from the operation of the NY FPSO. Hence, pygmy blue and humpback whales are considered unlikely to be impacted by underwater noise generated during the Petroleum Activities Program.

Mid and high frequency cetaceans (e.g. dolphins) are known to show behavioural disturbance at a range of received noise levels (Southall et al., 2007). Mid and high frequency cetaceans may exhibit short-term behavioural responses to increased levels of underwater noise, such as avoidance or attraction.

Several other FPSOs operate in the region (**Section 4.10.8**). Noise emissions from these may overlap with noise from the NY FPSO, but observations in the area do not suggest that the area is avoided by cetaceans.

Fish

Demersal and pelagic fish species are present in the Operational Area, including fish communities associated with the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula and the Continental Slope Demersal Fish Communities KEFs. Vessels holding station using DP are expected to produce sound equivalent to about 182 dB re 1 μ Pa SPL at 1 m. Modelling undertaken by McPherson et al. (2019) of sound produced by facility and vessel operations found that recoverable injury to some types of fish would only be possible if they remained within a distance of less than 10 m for 48 hours, and TTS if fishes remained within 10 m for at least 12 hours. Pelagic fish are highly mobile and the types of demersal fishes known to occur in the vicinity of the NY FPSO (e.g. snappers, emperors, cods and groupers) will exhibit some fidelity to the area but are still relatively free-swimming and are not constrained to such close ranges (i.e. 10 m). Therefore, free-swimming fish remaining in close range to sound sources for periods that subject themselves to TTS and injury is not considered to be a credible scenario.

Potential noise impacts to fish (including whale sharks) are expected to be restricted to masking and behavioural disturbance. Fish may temporarily be displaced from the immediate vicinity of a noise source; however, they would be expected to behave normally once the noise emissions ceased. Benthic species with site fidelity are not likely to be affected by the activity due to the depths to likely habitats and noise attenuation.

A foraging BIA for whale sharks overlaps the Operational Area and this species may be seasonally present (particularly between March and July) during their annual migration to, and from, the aggregation area off Ningaloo Reef. Whale sharks are not considered to be particularly vulnerable to underwater noise, as they do not have a swim bladder (considered to increase the vulnerability of a fish to noise related impacts). Received noise levels are expected to reduce to 103 dB re 1 μ Pa within 5 km of the Operational Area (McCauley, 1998). Currently, there are no quantitative sound exposure thresholds relevant to whale sharks. It is expected that the potential effects of noise on whale sharks are the same as for other fish species, resulting in minor, localised and temporary behavioural change such as avoidance. Noise attributed to the activity is not likely to interfere with the movement of whale sharks to and from the foraging area at the Ningaloo Reef, given the location is not confined and would not prevent the species from passing through. Therefore, impacts to whale sharks from the NY FPSO or support vessels are expected to have no lasting effect on the species.

Turtles

Vessels holding station are considered to be the predominant noise source related to the activity, with source levels of approximately 182 dB re 1 μ Pa SPL at m from a support vessel holding station considered to be representative of noise levels generated by vessels used for the Petroleum Activities Program. Turtles may occur in the Operational Area (**Section 4.6.2**) as the area contains internesting BIAs and defined Habitat Critical.

Although there are no quantitative sound exposure thresholds for impacts on marine turtles resulting from continuous noise sources, the relative risk for behavioural response is expected to be high within tens of metres of the source, medium within hundreds of metres and low within kilometres from the source (refer * The 120 dB threshold may be adjusted if background noise levels are at or above this level.

Table 6-5). PTS and TTS thresholds for turtles are 220 dB re 1 $\mu\text{Pa}^2 \text{ s}$ (SEL weighted) and 200 dB re 1 $\mu\text{Pa}^2 \text{ s}$ (SEL weighted), respectively (refer **Note**: a range of sound units are provided in the table above, reflecting the range of studies from which the data has been derived. The difference in units presents difficulty in reliably comparing threshold values. Where practicable, the threshold values have been compared with indicative sound sources levels of the same sound unit types. The sound units provided in the table above include:

- *M-weighted sound exposure level (SEL): a weighted sound metric that emphasises the audible frequency bands for the receptor groups – low, mid and high frequency cetaceans. SEL units are time integrated and best suited for continuous noise sources, such as vessels holding station or continuous machinery noise.*
- *Root mean square (rms) sound pressure level (SPL): root mean square of time-series pressure level is useful for quantifying continuous noise sources (as per SEL point above).*

Note: The sound units provided in the table above for continuous noise include: relative risk (high, medium and low) is given for marine turtles at three distances from the source defined in relative terms as near (N – tens of metres), intermediate (I – hundreds of metres) and far (F – thousands of metres) (after Popper et al., 2014).

Table 6-6). Typical noise levels generated by the FPSO and a support vessel using DP would not exceed these levels (except at extremely close ranges to the source), and prolonged exposure of transient marine turtles at close range is not considered a credible scenario.

Such disturbances are not expected to have any significant effect on individual turtles. As such, no significant impacts to marine turtles from underwater noise are expected.

IMMR Activity Noise

IMMR activities may generate a range of acoustic emissions; however, the most significant is expected to be from the use of underwater survey equipment. Therefore, this impact assessment is based on the use of MBES and SSS, all other routine IMMR activities are expected to cause lower impacts than those discussed herein.

Underwater noise from MBES and SSS will attenuate rapidly in the water column due to the relatively high frequency of noise emissions from these sources. The operating frequencies of MBES (12–700 kHz) and SSS (75–900 kHz) are well above the hearing range of turtles (1–2 kHz) and so no disturbance is expected. It is possible that some of the lower frequency sound emitted by sub-bottom profilers (2–30 kHz) may be audible to turtles, but again, a large proportion of the sound energy may be at frequencies that are outside of their normal auditory range. Modelling of impulsive sub-bottom profiler sound emissions by Mathews and Zykov (2013) and McPherson et al. (2017) indicates that the 166 dB re 1 μPa (SPL) behavioural disturbance threshold for turtles may only be exceeded within metres or tens of metres of the survey instruments. Therefore, behavioural impacts would be highly localised. PTS or TTS is not considered to be credible given the rapid attenuation of sound close to the source and a large proportion of the sound energy is produced at frequencies outside the peak hearing frequency range of turtles. No significant impacts to sensitive fauna are expected to occur as a result of these sources.

Sub-bottom profilers are typically lower frequency than multibeam echo sounders or side scan sonar, and acoustic emissions from sub-bottom profilers may propagate further in the water column. Based on typical source levels and frequencies for sub-bottom profilers (**Table 6-3**), and the geometric spreading equation present in vessel noise above, received levels from a sub-bottom profiler will attenuate to 160 dB re 1 μPa rms SPL within approximately 250 m of the source. This is comparable to the noise potentially produced by thrusters (refer to vessel noise section above for a discussion of potential impacts), although sub-bottom profiler emissions are impulsive rather than continuous. Potential impacts to cetaceans from MBES, SSS and sub-bottom profiler may, therefore, include behavioural disturbance if in close proximity to the survey instruments, but ranges to disturbance are less than or equivalent to disturbance ranges for the IMMR vessel itself. PTS or TTS are not considered credible, given individuals would need to be directly next to the noise sources for prolonged duration.

Helicopter Noise

Water has a very high acoustic impedance contrast compared to air, and the sea surface is a strong reflector of noise energy (i.e., very little noise energy generated above the sea surface crosses into and propagates below the sea surface (and vice versa) – most of the noise energy is reflected). The angle at which the sound path meets the surface influences the transmission of noise energy from the atmosphere through the sea surface, angles $>13^\circ$ from vertical being almost entirely reflected (Richardson et al., 1995). The Operational Area overlaps a breeding BIA for the wedge-tailed shearwater. The Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) considers risks to seabird populations from aircraft (including helicopters) as “Low”, with frequency, approach and height as the potential issues for nesting seabirds. Considering the distance to nearest seabird roosting habitat (Gascoyne Marine Park, 7.7 km SW) and the typical characteristics of helicopter flights within the Operational Area (duration, frequency, altitude, and air speed), the opportunity for noise levels that may result in behavioural disturbance to marine fauna are not considered credible.

Wellheads, Flowlines and NY FPSO Machinery Noise

Given the low levels of noise emitted by subsea infrastructure such as wellheads, choke valves, flowlines and the NY FPSO hull, no impacts to marine fauna from these noise sources are expected. Measurements of noise generated by choke valves indicated it is relatively high frequency (>1 kHz), and hence will attenuate over relatively short distances in the water column; significant impacts to marine fauna are not considered credible.

Flare noise, like helicopter noise, is generated in the atmosphere and has limited potential to propagate in the sea due to the high acoustic impedance of water. Additionally, the height of the flare tower and the unconstrained propagation

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of noise from the flare in the atmosphere means the potential for impacts to fauna at or near the sea surface is inherently highly unlikely. Receptors above the water, such as birds, may be exposed to noise from the flare. Operational experience indicates birds routinely roost at a range of locations on the NY FPSO and do not experience any discernible behavioural disturbance due to noise from the flare. As such, impacts to sensitive receptors from flare noise will have no lasting effect and will be highly localised.

Cumulative Impacts

While several FPSOs are located in the vicinity of the NY FPSO, the potential for significant cumulative impacts is considered to be not credible. In-field underwater measurements of FPSO noise off North West Cape indicated noise levels were lower than predicted and did not exceed 130 re 1 dB μ Pa beyond 500 m from the FPSO (JASCO Applied Sciences, 2010). This study concluded that propeller noise was the greatest component of underwater noise; given the FPSO is held on station by moorings, its potential to generate noise is relatively low.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
<p>EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures³¹:</p> <ul style="list-style-type: none"> Support vessels will not travel greater than 6 knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale. Support vessels will not approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding). If the cetacean or turtle shows signs of being disturbed, support vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots. Support vessels will not travel greater than 8 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark. 	<p>F: Yes CS: Minimal cost. Standard practice.</p>	<p>Implementation of these controls is primarily intended to reduce the likelihood of a collision between a cetacean, whale shark or turtle occurring. However, implementation may also provide some reduction in the potential for exposure of these fauna to sound levels in direct proximity to vessels.</p>	<p>Controls based on legislative requirements – must be adopted.</p>	<p>Yes C 3.1</p>

³¹ For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Maintain helicopter separation from cetaceans as per EPBC Regulations 2000 Part 8 Division 8.3 (Regulation 8.07) which includes the following measures: Helicopters shall not operate lower than 1650 feet or within a horizontal radius of 500 m of a cetacean known to be present in the area, except for take-off and landing.	F: Yes CS: Minimal cost. Standard practice.	Reduces likelihood of disturbance to cetaceans by maintaining separation distance.	Controls based on legislative requirements – must be adopted.	Yes C 3.2
Good Practice				
Vary the timing of the Petroleum Activities Program to avoid migration periods.	F: No. The Petroleum Activities Program occurs continuously over a 5-year period, modifying the timing of the Petroleum Activities Program is not feasible. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Implementing a shutdown zone around MBES, SSS and SBP for the following fauna: <ul style="list-style-type: none"> whales marine turtles whale sharks. 	F: Yes. However, as equipment is underwater, effective implementation of zones is challenging from topside observation. CS: Moderate. Requires the provision of a dedicated suitably trained crew member to undertake Marine Fauna Observations.	Limited. The areas of disturbance for these devices are limited to within about 290 m of the source. In addition, it is noted that for MBES, the frequency range of these devices are outside the estimated frequency hearing range of identified protected species (whales, turtles and whale sharks).	The source levels and frequency range of these devices are outside the estimated frequency hearing range of identified protected species (whales, turtles and whale sharks), so costs are considered disproportionate to benefits.	No
Have a dedicated experienced and trained Marine Fauna Observer (MFO) onboard vessels to undertake marine fauna observations.	F: Yes, however additional cost for dedicated and experienced MFO to be present during IMMR. CS: Moderate, requires the provision of a dedicated experienced MFO to undertake Marine Fauna Observations.	Use of an MFO may detect fauna in the area, however control provides limited benefit when managing impacts associated with vessel noise alone.	Given limited benefit associated with the management of vessel noise impacts and costs associated with control implementation an experienced MFO is not considered necessary.	No

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Professional Judgement – Eliminate				
Eliminate the use of DP on vessels during the Petroleum Activities Program.	F: No. Subsea support vessels are required to reliably hold station during the Petroleum Activities Program. Failure to do so may lead to loss of separation between vessels and infrastructure. This would result in unacceptable safety and environmental risk (loss of vessel separation has been identified as a MEE – Section 6.8.9). CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
Application of bubble curtains to reduce noise propagation.	F: No, Bubble curtain installation and operation in offshore open water not feasible due to technical operation constraints i.e. water depth/current.	Not considered, control not feasible.	Not considered, control not feasible.	No
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the impacts from routine acoustic emissions from vessels, helicopters, wellheads, flowline and the NY FPSO (including machinery) to be ALARP in its current impact classification. As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p>				
Demonstration of Acceptability				
<p>Acceptability Statement:</p> <p>The impact assessment has determined that, in its current state, impacts from routine acoustic emissions from the Petroleum Activities Program have the potential for localised impacts/disturbance to marine fauna within the Operational Area. Further opportunities to reduce the impacts and risks have been investigated above. The impacts are consistent with good oil-field practice/industry best practice and are considered broadly acceptable in its current state. Therefore, Woodside considers standard operations appropriate to manage the impacts of acoustic emissions to a level that is broadly acceptable.</p>				

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EPOs, EPSS and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 3</p> <p>Limit adverse impacts on fauna from noise emissions (no impact greater than F³²) during the Petroleum Activities Program.</p>	<p>C 3.1</p> <p>EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, which include the following measures³³:</p> <ul style="list-style-type: none"> Support vessels will not travel greater than 6 knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale. Support vessels will not approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding). If the cetacean or turtle shows signs of being disturbed, support vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots. Support vessels will not travel greater than 8 knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark. 	<p>PS 3.1</p> <p>Vessels will comply with the EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) interacting with cetaceans to manage the risk of fauna collision.</p>	<p>MC 3.1.1</p> <p>Records demonstrate no breaches with EPBC Regulations 2000 – Part 8 Division 8.1 and 8.3 and Woodside Marine Charterers Instructions.</p>
	<p>C 3.2</p> <p>Maintain helicopter separation from cetaceans as per EPBC Regulations 2000 Part 8 Division 8.3 (Regulation 8.07) which includes the following measures:</p> <ul style="list-style-type: none"> Helicopters shall not operate lower than 1650 feet or within a horizontal radius of 500 m of a cetacean known to be present in the area, except for take-off and landing. 		<p>PS 3.2</p> <p>Interactions between helicopters and cetaceans will be consistent with EPBC Regulations 2000 Part 8 Division 8.3 (Regulation 8.07) interacting with cetaceans.</p>

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6.6.4 Routine and Non-routine Discharges: Discharge of Hydrocarbons and Chemicals During Subsea Operations and Activities

Context																
Wells and Reservoirs – Section 3.5.2 Hydrocarbon and Chemical Inventories and Selection – Section 3.9 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10				Physical Environment – Section 4.4 Biological Environment – Section 4.5				Consultation – Section 5								
Impacts and Risks Evaluation Summary																
Source of Risk	Environmental Value Potentially Impacted							Evaluation								
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome		
Discharge of subsea control fluids.		✓	✓		✓			A	E	-	-	LCS GP PJ	Broadly Acceptable	EPO 4		
Discharge of hydrocarbons remaining in subsea pipeworks and equipment as a result of subsea intervention works (including pigging).		✓	✓		✓			A	E	-	-					
Discharge of chemicals remaining in subsea pipe works and equipment or the use of chemicals for subsea IMMR activities.		✓	✓		✓			A	E	-	-					
Discharge of minor fugitive hydrocarbons from subsea equipment.			✓					A	E	-	-					
Description of Source of Impact																
<p>Hydrocarbons and chemicals may be discharged as a result of planned routine and non-routine operations and activities, such as:</p> <ul style="list-style-type: none"> • operational discharges, including: <ul style="list-style-type: none"> – discharge of subsea control fluids - subsea control fluid is used to control subsea and well-head valves remotely from the facility. it is an open-loop system, designed to release control fluid from the subsea system – discharge of subsea control fluids from downhole valves – potential non-routine hydraulic fluid discharge associated with umbilical system losses/weeps – discharge of minor fugitive hydrocarbon from subsea equipment (e.g. seal weeps/bubbles). • IMMR activities, including: <ul style="list-style-type: none"> – discharge of residual hydrocarbons in subsea lines and equipment as a result of subsea IMMR activities – discharge of hydrocarbons from subsea equipment due to isolations, testing, subsea changeouts 																

³² Defined as ‘No lasting effect (< 1 month); localised impact not significant to environmental receptors’ as in **Section 2.6.3, Table 2-3.**

³³ For safety reasons, the specified distances requirements are not applied for a vessel holding station or with limited manoeuvrability (e.g. loading, back-loading, close standby cover for overside working and emergency situations).

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- discharge of chemicals in subsea lines and equipment, or the use of chemicals for subsea IMMR activities (including installation of pig launcher/receiver).

Unplanned (accidental) discharges of hydrocarbons and chemicals are considered in **Sections 6.7** and **6.8**.

Subsea Control Fluids

Subsea control fluid is used to control well-head valves remotely from the facility. Control fluid is supplied to valves via an open-loop system, designed to release control fluid during operation (e.g. upon valve actuation) up to ~2 m³/day use across the subsea system. Subsea control fluid may also be discharged during IMMR activities (e.g. leak detection and SCM changeouts – refer to **Section 3.10** for further information).

Subsea control fluids are selected in conformance with the chemical selection process outlined in **Section 3.9**. The subsea control fluid currently in use at the NY facility is HW443ND, which is water-based and has an OCNS rating of E and is listed as PLONOR. Leak detection fluorescent dye is also added for leak detection.

Hydrocarbons

Potential discharges associated with spool or subsea valve replacement activities are difficult to accurately determine without detailed engineering and activity specific planning which incorporates risk reduction and mitigation considerations. Notwithstanding, and for the purposes of the risk assessment, a potential release associated with MPP changeout may be approximately 350 L of hydrocarbon. IMMR activities may also result in small gas releases associated with isolation testing and breaking into containment. During operations there is the potential for discharge of minor fugitive hydrocarbons (predominantly gas bubbles) from subsea equipment such as from umbilicals/control lines, well equipment, valves, and flowline seals.

Chemicals

Chemicals may be introduced into subsea infrastructure during IMMR activities. These chemicals are used and discharged intermittently in small volumes. Small quantities of chemicals may remain in the flushed infrastructure, which may be released to the environment after disconnection. Operational chemicals may be introduced into subsea infrastructure and production stream, either as process or non-process chemicals (e.g. corrosion inhibitors, biocides, scale inhibitors, etc). The use of operational chemicals is restricted to what is needed to complete a required task. All operational (process and non-process) chemicals are selected in accordance with the requirements of the chemical selection process, described in **Section 3.9**. Where operational chemicals enter the production systems, there is potential for them to apportion to the water phase; however, this is normally managed by reinjection with the PW stream (refer to **Section 3.6.8**).

Impact Assessment

There is potential for slight, short-term localised decrease in water quality and sediment quality, and adverse effects on marine biota and habitats at the discharge location resulting from routine and non-routine hydrocarbon and chemical discharges. However, planned discharges of hydrocarbons and chemicals are infrequent and are minimised as far as practicable via flushing off the lines back to the facility. Discharge locations are either the subsea valves (subsea control fluid), disconnection points in subsea infrastructure or the NY FPSO.

Subsea Control Fluids

Subsea control fluids are discharged from subsea valves at or near the seabed in relatively small volumes. Once released, control fluids are expected to mix rapidly in the water column and become diluted. Impacts from the release of subsea control fluids are localised to the immediate vicinity of the release location and will not have any lasting effect, based on the:

- relatively small volumes of discharges
- low sensitivity of the receiving environment
- rapid dilution of the release.

Given the nature of the control fluid, the receiving environment and the potential for bioaccumulation, the potential impacts to fauna, sediments and water quality are considered minor.

Hydrocarbons

The small quantities of hydrocarbons that may be released during operations and IMMR activities that break containment are buoyant and will float towards the surface. Given the water depth, pressure, and the small volumes released, these hydrocarbons are not expected to reach the sea surface. Rather, the release will disperse and/or dissolve within the water column. While recognising the potential ecotoxicity and physical effects of released hydrocarbons (refer to **Section 6.8** for a discussion of the potential environmental impacts of hydrocarbon releases), the low release volumes for routine activities, dispersion and dissolution is expected to result in hydrocarbon contamination decreasing to background levels rapidly. As such, impacts from routine releases of hydrocarbons will have no lasting effect and are highly localised. Infrequent non-routine IMMR activities with increased volumes discharged (e.g. MPP changeout) are not expected to result in impacts greater than slight, short-term localised decrease in water quality at discharge location.

Chemicals

Routine and non-routine discharges of chemicals are localised to the immediate vicinity of the release location and will not have any lasting effect. This is based on the:

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- low potential for toxicity and bioaccumulation
- relatively small volumes of discharges
- intermittent nature of the discharges
- low sensitivity of the receiving environment
- rapid dilution of the release.

Residual operational chemicals are injected with PW; no credible impacts will result from planned activities.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁴	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
None identified.				
Good Practice				
Chemical Selection and Assessment Environment Guideline: <ul style="list-style-type: none"> • Where Gold/Silver/E/D OCNS rating (and no OCNS substitution or product warning), chemicals are selected – no further control required. • If chemicals with a different OCNS rating, sub warning or non-OCNS rated chemicals are required, chemicals will be assessed in accordance with the guideline prior to use. 	F: Yes. Routinely implemented to the chemical selection process for Woodside facilities. CS: Minimal cost. Standard practice.	Selection and assessment of chemicals in accordance with the Woodside process, reduces environmental impacts associated with planned chemical discharge.	Benefits outweigh cost/ sacrifice.	Yes C 4.1
Subsea infrastructure flushed and appropriately isolated where practicable during IMMR disconnection activities to reduce volume/ concentration of hydrocarbons released to the environment.	F: Yes. The subsea infrastructure has been designed such that much of the hydrocarbon-containing elements can be flushed back to the NY FPSO. CS: Minor. Flushing may prolong the cessation of production required for subsea IMMR activities, leading to reduced production.	Flushing reduces the volumes/concentration of hydrocarbons released to the environment.	Benefit outweighs cost/ sacrifice.	Yes C 4.2

³⁴ Qualitative measure.

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁴	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Implement Woodside Engineering Operating Standard (Subsea Isolation). Proven isolation in place for relevant IMMR activities.	F: Yes CS Minimal cost. Standard practice	Maintaining and testing the ability to isolate wells and pipelines will ensure barriers are in place and verified limiting the volume of hydrocarbon released.	Control is WMS requirement, must be adopted.	Yes C 4.3
Monitor subsea control fluid use, investigate material discrepancies, and use control fluid with dye marker to help identify potential integrity failures.	F: Yes. The use of control fluid is monitored to maintain adequate fluid in the system. CS: Minimal cost.	Limits the volumes of subsea control fluid discharge to the marine environment.	Benefit outweighs cost sacrifice.	Yes C 4.4
Professional Judgement – Eliminate				
None identified.				
Professional Judgement – Substitute				
Install closed-loop subsea valve control system.	F: Yes. Closed-loop subsea valve control systems can be installed, however, they may not perform as quickly/reliably as open-loop systems. CS: Significant. The design, procurement and retrofitting of a closed-loop valve control system would result in considerable offshore logistics, exposure to safety hazards during installation, and significant financial burden through direct costs and lost production.	The potential consequence of the discharges is ranked as incidental, based on the volume, frequency, location, and types of fluid discharged in an open-ocean environment, and avoiding the discharges would provide little or no environmental benefit.	When considering the negligible effect from the release of control fluids, the risk and costs of retrofitting a closed-loop subsea valve control system is considered to be grossly disproportionate to the environmental benefit.	No
Professional Judgement – Engineered Solution				
Route hydrocarbons to vessel during disconnection of subsea infrastructure.	F: Yes. However, to do so would introduce significant safety risks to the vessel crew (fire, explosion, asphyxiation). CS: Significant. Equipping and training crew onboard subsea support vessels to safely route hydrocarbons to the vessel would result in significant additional costs (in addition to the increased safety risk identified above).	Small environmental benefit from preventing low concentration hydrocarbon discharge.	Given the increased safety risk and the very low environmental impact from hydrocarbon releases during subsea IMMR activities, the cost of routing hydrocarbons to the vessel is grossly disproportionate to the environmental benefit.	No

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁴	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Decrease frequency of valve actuation.	<p>F: Yes. However, decreasing the frequency of valve may adversely impact the safe functionality and reliability of valves.</p> <p>Reducing the performance of subsea valves may introduce operability impacts, and increased safety and environmental risk associated with loss of containment events.</p> <p>CS: Minimal cost.</p>	The potential consequence of the discharges is ranked as incidental, based on the volume, frequency, location, and types of fluid discharged in an open-ocean environment, and reducing the number of discharges would provide little or no environmental benefit.	Decreasing the frequency of valve actuations would lead to a potential decrease in safe functionality and reliability of valves. When considering the potential safety and environmental risks from such a performance degradation, along with the minor impact from the release of control fluids, the cost of decreasing the frequency of valve actuations is considered to be grossly disproportionate to the environmental benefit.	No

ALARP Statement:

On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts of planned routine and non-routine hydrocarbon and chemical discharges. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.

Demonstration of Acceptability

Acceptability Statement:

The impact assessment has determined that, given the adopted controls, planned routine and non-routine subsea hydrocarbon and chemical discharges are unlikely to result in a potential impact greater than slight impacts to water quality, marine sediment and ecosystem habitat with rapid temporal recovery expected. Further opportunities to reduce the impacts have been investigated above. Any impact from the Petroleum Activities Program from planned routine and non-routine subsea hydrocarbon and chemical discharges would only have a slight, short-term impact (<1 year), without any lasting effect on ecosystem function. Fluid discharges from the subsea system during operations and IMMR activities are routine in the oil and gas industry. The adopted controls are considered good oil-field practice/industry best practice. The potential impacts are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts of planned routine and non-routine hydrocarbon and chemical discharges to a level that is broadly acceptable.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 4 Limit adverse water quality, sediment quality and marine habitat impacts to Slight (E³⁵) from routine and non-routine hydrocarbon and chemical releases associated with subsea activities during the Petroleum Activities Program.</p>	<p>C 4.1 Chemical Selection and Assessment Environment Guideline:</p> <ul style="list-style-type: none"> Where Gold/Silver/E/D OCNS rating (and no OCNS substitution or product warning), chemicals are selected – no further control required. If chemicals with a different OCNS rating, sub warning or non-OCNS rated chemicals are required chemicals will be assessed in accordance with the guideline prior to use. 	<p>PS 4.1 All operational chemicals intended or likely to be discharged to the marine environment will be assessed and approved prior to use in accordance with the Chemical Selection and Assessment Environment Guideline to ensure the impacts associated with use are ALARP and acceptable.</p>	<p>MC 4.1.1 Records demonstrate the chemical selection, assessment and approval process for operational chemicals is followed.</p>
	<p>C 4.2 Subsea infrastructure containing hydrocarbons flushed and appropriately isolated where practicable during IMMR disconnection activities.</p>	<p>PS 4.2 Subsea infrastructure containing hydrocarbons flushed to NY FPSO (where practicable) to a hydrocarbon concentration which provides considered diminishing returns prior to disconnection. Appropriate isolations applied where practicable.</p>	<p>MC 4.2.1 Records demonstrate subsea infrastructure flushing (to NY FPSO) and isolations applied where practicable.</p>
	<p>C 4.3 Implement Woodside Engineering Operating Standard (Subsea Isolation). Proven isolation in place for relevant IMMR activities.</p>	<p>PS 4.3 Subsea infrastructure containing hydrocarbons flushed to NY FPSO (where practicable) to a hydrocarbon concentration which provides considered diminishing returns prior to disconnection.</p>	<p>MC 4.3.1 Records demonstrate subsea infrastructure flushing (to NY FPSO) where practicable.</p>
	<p>C 4.4 Monitor subsea control fluid use, investigate material discrepancies, and use control fluid with dye marker to support identification of potential integrity failures.</p>	<p>PS 4.4 Subsea control fluid use monitored and, where losses are unexplained, potential integrity issues are investigated.</p>	<p>MC 4.4.1 Records demonstrate subsea control fluid use is documented, and unexplained discrepancies investigated.</p>

³⁵ Defined as 'slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attribute' as in **Section 2.6.3, Table 2-3**.

6.6.5 Routine and Non-routine Discharges (Utility Systems): Discharge of Sewage, Putrescible Waste, Greywater, Bilge Water, Drain Water, Cooling Water and Brine

Context															
Operational Details – Section 3.6 Support Vessel Operations – Section 3.7				Physical Environment – Section 4.4 Biological Environment – Section 4.5				Consultation – Section 5							
Impacts and Risks Evaluation Summary															
Source of Risk	Environmental Value Potentially Impacted						Evaluation								
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome	
Discharge of sewage, grey water and putrescible waste from vessels and NY FPSO to the marine environment.			✓					A	F	Cumulative E	-	-	LCS GP PJ	Broadly Acceptable	EPO 5
Discharge of deck water from NY FPSO and bilge water from vessels to the marine environment.			✓					A	F		-	-			
Discharge of RO brine from vessels and NY FPSO, and CWF effluent from NY FPSO, to the marine environment.			✓					A	F		-	-			
Discharge of cooling water from vessels and NY FPSO to the marine environment.			✓					A	F		-	-			
Description of Source of Impact															
<p>Sewage, Putrescible Waste and Grey Water</p> <p>Sewage and grey-water is treated onboard the NY FPSO by a biological sewage treatment plant, which includes maceration, biological treatment and disinfection. The treatment process is consistent with secondary sewage treatment and the requirements of IMO Marine Protection Environment Committee 2 (VI) criteria. The sewage treatment plant onboard the NY FPSO is capable of handling inputs from up to 80 PoB, which is adequate for routine and non-routine personnel levels onboard the FPSO. Sewage treatment onboard facility support and subsea vessels</p>															

will vary. Treatment systems may require routine maintenance or repair during operations, which may necessitate infrequent, short periods in which sewage is directly discharged overboard.

Putrescible wastes (e.g. food scraps) from the NY FPSO and support vessels may be macerated prior to being discharged overboard. Putrescible wastes may also be retained onboard and disposed onshore.

The volume of sewage, grey-water and putrescible waste generated is estimated to be in the order of 6 m³ per day (based on an average volume of 75 L/person/day) from the NY FPSO. The actual volume of discharge will vary depending on personnel levels on the NY FPSO and vessels. Discharge of treated sewage and grey water from the NY FPSO is directly to the sea via a pipe below the sea surface. Discharge locations from vessels may vary but are typically at or near the water surface.

Slops, Drain and Bilge Water

Operational non-process discharges, process maintenance drainage and flushing discharges, washdown water and potential spills are contained in the non-hazardous and hazardous open drain systems onboard the NY FPSO. These systems drain to the slops tank and do not drain to the environment. Machinery space bilges on the NY FPSO also drain to the slops tank.

Chemicals used onboard the NY FPSO may be introduced to the drains system, including:

- deck washdown, maintenance drainage of treated water systems (e.g. tempered water), and other cleaning/flushing activities
- mandatory annual testing of the active fire deluge and foam system for safety requirements
- marine growth treatment of drain caisson.

Mandatory testing of the active fire deluge and foam system onboard the FPSO is undertaken for safety requirements. This discharge is directed overboard to prevent foam contamination of the slops tank (which would decrease the effectiveness of gravity separation of hydrocarbons). Rainwater on the FPSO is also directed overboard instead of to the slops tanks.

Vessels routinely generate and discharge relatively small volumes of bilge water. Bilge tanks receive fluids from many parts of the vessel, including machinery spaces. Bilge water can contain water, oil, detergents, solvents, chemicals, particles and other liquids, solids or chemicals. Water sources could include rainfall events and/or deck activities such as cleaning/wash-down of equipment/decks.

Brine

The RO and distillation plants onboard the NY FPSO are used to produce potable water, with the brine produced discharged to the marine environment at the FPSO. Brine is generally 55–60 parts per thousand salt, with up to approximately 100 m³ of brine produced per day. Small quantities of anti-scaling and cleaning chemicals may also be discharged with the brine. Small quantities of reverse osmosis (RO) brine may be generated by support or subsea vessels.

CWF Effluent

The CWF intakes seawater via the topsides seawater system, which is treated and injected to enhance hydrocarbon production. The CWF system is expected to generate approximately 4300 m³/day of routine process effluent (**Section 3.6.3**). The effluent contains concentrated sulphates, calcium and magnesium that occur naturally in seawater, as well as a scale inhibitor. For short durations, the effluent will contain small concentrations of either sodium hypochlorite or biocide, as described in **Section 3**. The routine discharge stream is at ambient temperature and is routed to the existing seawater disposal caisson where the stream is diluted with the seawater cooling reject stream by approximately 18 times, before being discharged to the marine environment.

Non routine discharges from the CWF package, described in **Section 3**, include periodic cleaning/maintenance discharges originating from the CIP package. These may include up to 20 m³ of freshwater dosed with either citric acid or sodium carbonate, or fluids used to preserve the system when not in use, which comprises 65 m³ of seawater dosed with sodium bi-sulphate. These chemicals are considered PLONOR. The primary disposal route for these discharges is to the slops tanks, with their fate being reinjection into the disposal reservoir. Due to operational reasons, it may not be possible to direct these non-routine discharges to the slops for reinjection from time to time in this case the non-routine discharge may be over boarded via the existing seawater disposal caisson. During start-up, turndown operation and injection well testing operations, there is also continuous overboarding of the filtrated CWF stream via pump minimum flows and SRU product dump lines, which includes residual oxygen scavenger and may include anti-foam.

Seawater Systems Flow (including Cooling Water)

The seawater systems are routinely used onboard the NY FPSO for process and machinery cooling which is returned to the sea via the seawater disposal caisson or marine sea chests. Seawater used for cooling, is dosed with copper ions to inhibit marine growth. The average discharge rate of sea water from the topsides cooling system and hull cooling system are approximately 80,000 m³/day and 56,000 m³/day respectively. The hull cooling system operates as required for engine cooling. The topsides cooling system is considered to represent worst case discharge scenario due to the larger volume. Seawater system discharge temperature is, on average, approximately 20°C above ambient seawater temperature (approximately 23°C), with a maximum discharge temperature of 50°C.

Impact Assessment

Sewage, Putrescible Waste and Grey Water

The main environmental impact associated with ocean disposal of sewage, grey water and putrescible waste is eutrophication. Eutrophication occurs when the addition of nutrients, such as nitrates and phosphates, causes adverse changes to the ecosystem, such as oxygen depletion and phytoplankton blooms. Environmental receptors that may be exposed to sewage, grey water and putrescible waste discharges include plankton, marine reptiles, marine mammals and pelagic fish. No significant impacts from the planned (routine and non-routine) discharges to environmental receptors are anticipated because of the minor quantities involved, the expected localised mixing zone, and high level of dilution into the open water marine environment of the Operational Area. Water quality monitoring in the mixing zone around the NY FPSO indicated nutrients (e.g. ammonia, total nitrogen (TN) and total phosphorous (TP)) are consistent with background levels within 200 m of the discharge location (BMT Oceanica 2015a). This is consistent with other studies monitoring sewage discharges, which have demonstrated that a 10 m³ sewage discharge reduced to approximately 1% of its original concentration within 50 m of the discharge location (Woodside, 2008). The Operational Area is located more than 12 nm from land, exceeding the exclusion zones required by Marine Order 96 (Marine pollution prevention – sewage) 2018 and Marine Order 95 (Marine pollution prevention – garbage) 2013.

Vessels are typically moving when in the Operational Area, which facilitates the mixing of sewage, putrescible wastes and grey water from vessels. The impact of nutrients associated with discharge of sewage, grey-water and putrescible waste is considered to have a localised impact, with no lasting effect due to the discharge mass and the assimilative capacity of the receiving environment.

Slops, Drain and Bilge Water

The slops tank receives drainage water from a range of sources, including:

- NY FPSO drain systems
- CWF periodic cleaning/maintenance effluent.

Slops tank water may contain small quantities of dissolved and residual hydrocarbons, and other chemicals such as detergents and cleaning agents. Given slops tank water is reinjected during normal operations, no impacts from slops tank water will occur.

Water foaming agents used in fire-fighting foam may be harmful to aquatic organisms within freshwater environments like ponds and streams. This effect of the chemical release is greatly diminished in the offshore environment (due to wave and wind action) and does not present the same risks to pelagic fish and other marine life as is rapidly dispersed.

Nevertheless, the planned release of these materials is restricted to testing activities and using the minimum amount required to ensure safe and effective operation of the system in an emergency. Stagger test water will be clean seawater and the discharge will have no environmental impact.

RO Brine

Sodium hypochlorite and other chemicals within the RO brine stream are expected to readily dissociate and break down once discharged into the environment. Monitoring at other Woodside facilities with comparable water discharges did not indicate the pH within the mixing zone differs from the surrounding environment (BMT Oceanica, 2015b); given sodium hypochlorite is basic, the monitoring suggests that sodium hypochlorite concentrations diminish rapidly following discharge. Other chemicals in these discharges, such as biocides and scale inhibitors, are expected to occur at low concentrations and mix rapidly.

Brine plumes discharged from the RO plant may result in osmotic stress to marine biota that rely on gills or diffusion across cell membranes to maintain osmotic pressure within cells. Mobile fauna such as fish may move away from the brine plume; hence impacts are restricted to planktonic and sessile organisms.

Once discharged into the marine environment, the brine plume is expected to sink due to its relatively high density. Sinking of the plume will facilitate turbulent mixing, as will surface currents and waves. Recent water quality monitoring at the NY FPSO indicated the brine plume mixed rapidly once released and was not readily detectable within 50 m of the discharge location (the seawater disposal caisson) (BMT Oceanica, 2015a). On this basis, the RO brine plume is expected to mix rapidly. Impacts from RO brine discharge will have no lasting effects on the environment and are highly localised to the discharge location.

CWF Effluent

The main environmental impact associated with disposal of CWF is reduction in water quality. The routine CWF discharge stream is at ambient seawater temperature therefore no impacts from temperature are anticipated. The concentrated sulphates, calcium and magnesium in the effluent, which occur naturally in seawater, are not considered contaminants of concern and are not anticipated to have any impacts. Additives to the CWF discharge stream are either naturally occurring in seawater (and therefore soluble in seawater) or are low toxicity, water soluble chemicals dosed at low rates.

The CWF discharge stream is expected to readily dilute by co-mingling with the cooling water discharge stream, by approximately 18 times prior to discharge. No credible impacts from the planned (routine and non-routine) discharges to environmental receptors are anticipated because of the minor quantities involved, low toxicity, the expected localised mixing zone, and high level of dilution into the open water marine environment of the Operational Area.

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Seawater Systems Flow (including Cooling Water)

The main environmental impact is temperature change potentially affecting open water receptors (fish and plankton populations). Elevated seawater temperatures may cause a variety of effects on both fish and plankton, ranging from behavioural response (including attraction and avoidance behaviour) and minor stress for prolonged exposure. Fish are unlikely to be impacted by the elevated temperatures other than through behavioural changes (avoidance and attraction). While impacts to plankton may include mortality, given the rapid turnover of plankton communities and mixing of adjacent populations, populations are expected to recover rapidly once discharge ceases.

Discharged cooling water (typically 80,000 m³/day) is typically 20°C warmer than the ambient seawater. Given higher temperature, cooling water is expected to be buoyant compared to the receiving seawater and form a plume in near surface waters down current from the seawater disposal caisson. Modelling of a similar discharge rate, of cooling water was previously conducted for the proposed Browse Upstream LNG Development (DHI, 2011) using Cornell Mixing Zone Expert System (CORMIX 6.0). This modelling assumed a cooling water discharge rate of 90,000 m³/day at a temperature of 45°C at 20 m depth through a 1.2 m downward-facing caisson which is comparable to the discharge of topsides cooling water (largest discharge from the FPSO, **Table 6-8**). Based on a review of current speeds in the Exmouth basin metocean conditions are expected to be similar, with typical currents speeds of ~0.2 m/s (measured speeds ranged from 0.005 m/s to 0.52 m/s). Therefore, the modelling is representative of below sea surface cooling water discharges expected from the FPSO cooling water.

Table 6-8: Modelling results from Browse development and North Rankin C cooling water discharge and the characteristics of the cooling water discharges from the Ngujima-Yin floating production, storage and offloading facility

<i>Characteristic</i>	<i>Browse Modelling</i>	<i>NY Topside System</i>	<i>NRC Modelling</i>
Flow rate (m ³ /day)	90,000	80,000	295,200
Pipe diameter (m)	1.2; 1.2; 1.6 (per caisson)	1.2; 1.2; 1.6 (per caisson)	1.6 (per caisson)
Port exit velocity (m/s)	0.92	0.72	-
Caisson elevation (m below surface)	-20	-5	-15
Excess salinity	0	0	0
Excess temperature (°C)	Excess temperature +19 (absolute 45)	+20 (absolute 50)	45
Ambient temperatures (°C)	28 (based on range of 26- 30)	23 to 30	19 to 30
Ambient salinity (ppm)	34.2	35.2 to 35.7	34

The Browse model found that under varying set tidal current speeds the thermal plume cooled to within 3°C of ambient within a short distance from the caisson. Using worst case (0.1 m/s) and typical current speeds (0.22 m/s) the thermal plume cooled to 3°C of ambient, within 15 m and 8 m of the discharge caisson respectively. These model results indicate that the temperature of topsides cooling water discharge plume would be reduced to less than 3°C above ambient within those same distances. As described previously, the cooling water discharge rate is typically of 80,000 m³/day, which is less than the 90,000 m³ discharge rate modelled. The lower volumes result in more effective near-field dilution reducing the distance required to achieve dilution to ambient temperatures.

Modelling was also undertaken for 295,200 to 405,600 m³/day of cooling water (discharged from two discharged points) at NRC (SKM, 2008). Given the two discharges from the FPSO combined (80,000 m³/day and 56,000 m³/day) are much smaller than the lower end of rates modelled at NRC this modelling is considered conservative. The NRC modelling found that under varying set tidal current speeds the thermal plume cooled to within 3°C of ambient within 200 m from the caisson. These model results support the assessment that the temperature of the combined topsides and hull seawater cooling system based cooling water discharge plumes would be reduced to less than 3°C above ambient well within 200 m. Based on current facility design, it is not possible to significantly increase the throughput of cooling water or the discharge temperature without significant equipment and process changes. Therefore, any increase in cooling water discharge rates or temperature beyond those considered above are not considered credible.

Water quality monitoring in the mixing zone around the NY FPSO could not detect elevated temperatures (SKM, 2010), indicating that temperatures returned to ambient within 10 m of the discharge point which is consistent with modelling. No significant impacts from the planned discharges to environmental receptors are anticipated because of the localised mixing zone, and high level of dilution into the open water marine environment.

The only additive to the seawater used in the seawater and cooling water systems is copper ions, which are generated to suppress growth of fouling organisms. Most copper ions will react and be neutralised within the cooling water system. Levels of copper from anti-biofouling systems have been measured by the US Uniform National Discharge Standards (UNDS) Program. Their research has shown that the concentration of copper discharged from antibiofouling systems is between 0.52 and 0.69 ppb (µg/L). In these low concentrations and on discharge into the

marine environment, two or three dilutions are required to reduce residual copper concentration below ANZECC/Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) guideline values (99% species protection trigger level for copper is 0.3 µg/L). At these low concentrations, copper is rapidly diluted to ambient background levels on discharge into the marine environment. Copper is an essential trace nutrient, and marine organisms (including mammals, fish, molluscs and crustaceans) have evolved mechanisms to regulate concentrations of free copper ions in their tissue received from ambient water, sediment or food (Neff, 2002). These mechanisms are able to continue to operate, and only break down when copper concentrations reach near-lethal concentrations (Neff, 2002). The discharge of copper ions in cooling water is not expected to result in significant bioaccumulation effects. The level of copper ions generated is controlled by the design of the system and anticipated to have no lasting effects on the environment and are highly localised to the discharge location.

Cumulative Impacts

Given the activities that may be conducted during the Petroleum Activities Program, there is the potential for cumulative impacts from routine discharges due to:

- repeated/ongoing discharges at the same location (NY FPSO) over the course of the Petroleum Activities Program
- cumulative discharges from differing point sources (NY FPSO and vessels).

Given the nature of these routine discharges, the localised spatial extent of impacts and the well mixed receiving environment, the cumulative impacts from these discharges are not considered to result in impacts more than slight short-term impact. Given the highly localised nature of the impacts of routine discharges, no cumulative impacts from similar discharges from other production facilities (e.g. Nganhurra and Ningaloo Vision FPSOs) will occur.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
NY FPSO and contract vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> • Marine Order 91 (Oil) • Marine Order 95 (Pollution prevention – garbage) • Marine Order 96 – (Pollution prevention – sewage). 	F: Yes CS: Minimal cost. Standard practice.	Marine Orders required under Australian regulations; implementation is standard practice for commercial vessels as applicable to vessel size, type and class. Marine Orders 91, 95 and 96 (pollution prevention) reduces the potential impact of marine wastewater discharges on water quality.	Controls based on legislative requirements – must be adopted.	Yes C 5.1

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Good Practice				
Chemical Selection and Assessment Environment Guideline: <ul style="list-style-type: none"> Where Gold/Silver/E/D OCNS rating (and no OCNS substitution or product warning), chemicals are selected – no further control required. If chemicals with a different OCNS rating, sub warning or non-OCNS rated chemicals are required chemicals will be assessed in accordance with the guideline prior to use. 	F: Yes. Woodside routinely implements a chemical selection process based on the OCNS at the NY FPSO. CS: Minimal. The OCNS is widely used throughout the industry and chemical suppliers are aware of the requirements of the scheme.	Selection and assessment of chemicals in accordance with the Woodside process, reduces environmental impacts associated with planned chemical discharge.	The Woodside's chemical selection process is used to ensure chemicals are selected with the lowest practicable environmental risks while still providing the required technical capability.	Yes C 4.1
Putrescible waste from NY FPSO is macerated prior to overboard discharge under normal operations.	F: Yes CS: Minimal cost. Standard practice.	Treating and macerating putrescible waste is standard industry practice, ensuring the substance disperses in the receiving environment with minimal effects to water quality.	Benefits outweigh cost sacrifice.	Yes C 5.2
Professional Judgement – Eliminate				
Storage, transport and treatment/ disposal onshore of sewage, greywater, putrescible and bilge wastes.	F: No. Long term transport of waste onshore would present additional safety and hygiene hazards resulting from the storage, loading and transport of the waste material. CS: Not considered – control not feasible.	Not considered – control not feasible.	Not considered – control not feasible.	No
Routine reinjection of slops tank water eliminating the impacts to the marine environment associated with slops discharge.	F: Yes. The NY FPSO has been designed with water reinjection capability. CS: Minimal. The NY facility currently routinely reinjects slops tank water.	The reinjection of slops tank water eliminates the discharge of slops tank water under routine operating conditions.	Benefits outweigh cost sacrifice.	Yes C 5.3

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Professional Judgement – Substitute				
Long term transport of potable water from shore for NY FPSO and vessels.	F: Yes. Potable water can be sources from onshore water supplies. CS: Significant. The long-term costs and operational complexity associated with potable water bunkering outweigh cost and negligible environmental footprint associated with offshore RO supply.	The potential environmental impact is ranked as having negligible effect; Eliminating RO brine the discharge would provide negligible environmental gain.	When considering the negligible impact from the discharge of RO brine reliance on bunkering of potable water and incremental support vessel activities is disproportionate to the environmental impact.	No
Professional Judgement – Engineered Solution				
Sewage from NY FPSO processed by sewage treatment plant prior to discharge under normal operations.	F: Yes CS: Minimal cost. Standard practice.	Treating and macerating sewage is standard industry practice, ensuring the substance disperses in the receiving environment with minimal effects to water quality.	Benefits outweigh cost sacrifice.	Yes C 5.4
Facility process area drain systems maintained to return routine drain flows inboard to slops.	F: Yes CS: Minimal cost. Standard practice.	The open hazardous drain system will be maintained to support appropriate disposal of environmentally hazardous liquids.	Benefits outweigh cost sacrifice.	Yes C 5.5
Upgrade existing sewage treatment system by retrofitting a disinfection system.	F: Yes. However, disinfection of sewage is intended to reduce pathogenic bacterial loads and hence will have no impact on nutrient concentrations. CS: Significant. Installation of a disinfection system would incur design, procurement, installation and ongoing operational costs. Additional chemicals may also be required, introducing an additional source of environmental risk.	Minor reduction in impacts due to treatment of sewage, given offshore environment and high natural mixing which would occur.	Given the installation of a disinfection system does not reduce the environmental impact of sewage discharge, along with the potential for additional chemical use, the cost is considered to be grossly disproportionate to the environmental benefit.	No

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Reassessment of impact of cooling water discharges if significant equipment and/or process changes occur on the facility, with the potential to increase: <ul style="list-style-type: none"> • volume • temperature. 	F: Yes CS: Minimal cost. Standard practice.	Maintains confidence that environmental impact from cooling water discharge stream continues to meet Woodside's Environmental Performance Procedure. Based on current facility design, it is not possible cooling water discharge plumes would exceed 3°C above ambient at 200 m without significant equipment and process changes. Given the concentration of copper discharged from antibiofouling systems is between 0.52 and 0.69 ppb (µg/L) it is not considered credible that the either the 95% or 99% species protection trigger level for copper (0.3 and 1.3 µg/L respectively) could be exceeded at 500 m without significant equipment and process changes.	Benefits of reassessment outweigh cost sacrifice.	Yes C 5.6

ALARP Statement:

On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts of discharge of sewage, putrescible waste, grey water, bilge water, drain water, cooling water, CWF effluent and brine. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.

Demonstration of Acceptability

Acceptability Statement:

The impact assessment has determined that, given the adopted controls, impacts from the discharge of sewage, putrescible waste, grey water, bilge water, drain water, cooling water, CWF effluent and brine is unlikely to result in a potential impact greater than slight and short-term changes above background levels within a localised mixing zone, with rapid temporal recovery expected. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are considered good oil-field practice/industry best practice and meet legislative requirements under Marine Orders 91, 95 and 96. The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of these discharges to a level that is broadly acceptable.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 5 Limit adverse water quality impacts to Slight (E)³⁶ from routine and non-routine wastewater discharges during the Petroleum Activities Program.</p>	<p>C 5.1 NY FPSO and contract vessels compliant with Marine Orders for safe vessel operations:</p> <ul style="list-style-type: none"> • Marine Order 91 (Oil) • Marine Order 95 (Pollution prevention – garbage) • Marine Order 96 – (Pollution prevention – sewage). 	<p>PS 5.1 NY FPSO and contract vessels contracted whose practices comply with Marine Orders as applicable to vessel size, type and class.</p>	<p>MC 5.1.1 Marine verification records demonstrate compliance with standard maritime safety procedures (Marine Orders 91, 95 and 96).</p>
	<p>Refer to C 4.1 Section 6.6.4.</p>	<p>Refer to PS 4.1 Section 6.6.4.</p>	<p>Refer to MC 4.1.1 Section 6.6.4.</p>
	<p>C 5.2 Putrescible waste from NY FPSO is macerated prior to overboard discharge under normal operations.</p>	<p>PS 5.2 All putrescible wastes discharged to sea when macerated (specified to < 25 mm size).</p>	<p>MC 5.2.1 Putrescible and sewage system maintenance records.</p>
	<p>C 5.3 Routine reinjection of slops tank water eliminating the impacts to the marine environment associated with slops discharge</p>	<p>PS 5.3 All slops tank water reinjected.</p>	<p>MC 5.3.1 Records demonstrate slops tank water reinjected.</p>
	<p>C 5.4 Sewage from NY FPSO processed by sewage treatment plant prior to discharge under normal operations.</p>	<p>PS 5.4 Sewage generated onboard NY FPSO to be treated by sewage treatment plant prior to discharge as far as practicable. Where treatment is unavailable (e.g. during maintenance periods/failures) sewage may be discharged in accordance with MARPOL requirements 73/78Annex IV.</p>	<p>MC 5.4.1 Sewage system maintenance records.</p>

³⁶ Defined as 'slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attribute' as in **Section 2.6.3, Table 2-3.**

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EPOs, EPSs and MC			
	<p>C 5.5 Facility process area drain systems maintained to return routine drain flows inboard to slops.</p>	<p>PS 5.5 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related damage to SCEs for:</p> <ul style="list-style-type: none"> • F22 – Hazardous Open Drains; to: <ul style="list-style-type: none"> - prevent escalation of an incident following loss of containment, fire and/or explosion by removing or containing flammable liquid from hazardous areas - support appropriate containment and disposal of environmentally hazardous liquids to avoid damage to the environment. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>
	<p>C 5.6 Reassess impact of cooling water discharges if significant equipment and/or process changes occur on the facility, with the potential to increase volume or temperature.</p>	<p>PS 5.6 Environmental impacts from cooling water discharge limited to Slight (E) by continued compliance with requirement of the Woodside Environmental Performance Procedure, listed below:</p> <ul style="list-style-type: none"> • Less than 3°C above ambient, 95% of the time at 200 m from a discharge source. • Achieve a maximum mixing zone of 500 m from an offshore source. 	<p>MC 5.6.1 Records demonstrate OMDAMP has been implemented.</p>

6.6.6 Routine and Non-Routine Atmospheric and Greenhouse Gas Emissions

Context														
Operational Details – Section 3.6 Support Vessel Operations – Section 3.7				Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
NY FPSO and vessel fuel combustion emissions, NY FPSO operational flaring and fugitive emissions.				✓				A	F	-	-	LCS GP PJ LCS GP PJ RB A CV SV	Broadly Acceptable	EPO 6
NY emissions associated with third party transport of products, refining and combustion.				✓			✓	B	F	-	-			EPO 7

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Description of Source of Impact

Atmospheric emissions are generated from the NY FPSO and support vessels during the Petroleum Activities Program. Sources include emissions from internal combustion engines (including equipment and generators), flares, fugitives and process vents. Vessel emissions include those from internal combustion engines, fugitives and onboard incinerators. Emissions and combustion products will typically include CO₂, water vapour, NO_x, SO₂, methane, refrigerant gases (including ozone depleting substances), particulates and Volatile Organic Compounds (VOCs).

In this section greenhouse gases are estimated using the National Greenhouse and Energy Reporting (NGER) Measurement Determination 2008 (as amended including 100-year Global Warming Potential).

Direct Atmospheric and GHG Emissions

Direct emissions generated from the NY FPSO during the Petroleum Activities Program include emissions from gas turbines (that can also run on diesel), flares, fugitives and process vents. Direct emissions and combustion products typically include CO₂, water vapour, NO_x, SO₂, particulates, Volatile Organic Compounds (VOCs).

Fuel Emissions

Fuel gas consumption for compression and power generation is the predominant source of combustion emissions from the NY FPSO, primarily from the three 12,500 kW gas turbine generators, the CWF turbine generator and high-pressure reinjection compressor. The turbines may run on fuel gas or diesel. Emergency diesel generators may also be used as required. Diesel is used for firewater pumps, emergency generators, cranes and back-up fuel for the turbine generators. The main engines on the NY FPSO also use diesel fuel.

Based on historical and forecasted data, it is estimated that NY will consume approximately 80,000 tonnes of fuel gas, the combustion of which equates to about 213,368 tonnes of CO₂ equivalents. Diesel use is more variable and may be up to 6500 m³ per year (excluding support vessels), the combustion of which equates to 17,613 tonnes of CO₂ equivalents (CO₂-e).

The estimated annual emissions from fuel combustion have been estimated using emissions factors (as per National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 and National Pollutant Inventory (NPI) Emission Estimation Techniques (EET)) and are presented in **Table 6-9**.

Table 6-9: Estimated annual emissions from fuel combustion (excluding support vessels)

<i>Emission Type</i>	<i>Estimated annual emissions from fuel gas combustion (t)</i>	<i>Estimated annual emissions from diesel combustion (t)</i>
CO ₂ (t CO ₂ -e)	212,830	17,538
CH ₄ (t CO ₂ -e)	414	25
N ₂ O (t CO ₂ -e)	124	50
Total t CO₂-e	213,368	17,613
NO _x (tonnes)	852	345
CO (tonnes)	218	91

Flaring

During normal operations, hydrocarbon gas is flared via the HP and LP flare systems. Gas flaring emits gases to atmosphere and consumes natural gas, a non-renewable resource. Emissions and combustion products include CO₂, NO_x, SO₂, methane, particulates and VOCs. Incomplete combustion under certain scenarios may also generate dark smoke.

The release of hydrocarbon gas to atmosphere by flaring is an essential practice, primarily for safety requirements.

Operational flaring is comprised of two elements:

- normal operational flaring associated with flare system purge, pilot and process flows
- non-routine, non-operational flaring that may result from activities such as planned shutdowns and ESD testing, and unplanned shutdowns and ESDs, production restarts, equipment outage/failures, subsea flowline depressurisation, well start up and remediation activities.

The flaring volume is impacted by reliability of the compression system (LP compressor and HP compressor). Historically, improvements have been made on the reliability of the HP compressor, with a subsequent reduction in flaring volumes. During flaring, the burnt gas generates mainly water vapour and CO₂.

Based on historical performance, it is estimated that about 32,000 tonnes of gas is flared per year including water vapour, inert gas and hydrocarbon gas in routine and non-routine activities. Flaring volumes vary with production rates, non-routine activities, outages and shutdowns. The estimated annual emissions from flaring have been calculated using the NGER measurement determination and NPI EET (**Table 6-9**).

Table 6-10: Estimated annual emissions from flaring

Component	Estimated Annual Emissions (tonnes)¹
Flared gas (tonnes)	32,0001
CO ₂ (t CO ₂ -e)	89,600
CH ₄ (t CO ₂ -e)	29,856
N ₂ O (t CO ₂ -e)	832
Total t CO₂-e	120,288
NO _x (tonnes)	48
CO (tonnes)	278

¹ Estimate only from historical performance from last two years. Future performance may differ due to variety of reasons such as upset conditions, change in field production, etc.

Non-routine Venting of Process Hydrocarbons via Flare System

During normal operations, hydrocarbon gas is flared via the HP and LP flare systems. These systems are maintained to effectively combust hydrocarbons as a critical component for the safe operation of the NY facility. In the unlikely event that the flares are extinguished (for example during a tropical cyclone) or unavailable (such as following a major shutdown prior to system ramp-up), the hydrocarbon gas discharged via the flare system may initially not be combusted during the period required to purge the flare system and re-establish flare ignition. This may result in the short term (minutes) low-rate release of hydrocarbon gas to the atmosphere. Intermittent venting from the NY facility represents a minor source of atmospheric emissions and is not considered to pose a risk beyond the routine air emissions described in this section.

Cargo Tank Inert Gas Venting

The inert gas system supplies inert gas to maintain a positive pressure in the vapour space of cargo tanks to prevent the ingress of air. Hydrocarbon vapour will form in the cargo tanks as volatile hydrocarbons evaporate from the stored crude oil. This vapour is displaced from the cargo tanks as they are filled and vented to the atmosphere. Maintaining inert gas in cargo tank vapour spaces is required for the safe operation of the facility.

Fugitive Emissions

Fugitive emissions can occur from pressurised equipment, and are inherent in design, required for infrequent operational activities, or can be caused by unintentional equipment leaks. Sources can include from valves, flanges, pump seals, compressor seals, relief valves, vents, sampling connections, process drains, open-ended lines, casing, tanks and other potential leakage sources from pressurised equipment. Fugitive emissions are, by their nature, difficult to quantify.

As much of the safe operation of the NY facility relies on the effective containment of hydrocarbons, the volumes of routine and non-routine fugitive emissions are considered small. The National Greenhouse and Energy Reporting (Measurement) Determination provides methodology for estimating fugitive emissions. Using these estimation techniques, the NY FPSO reported 4985 tonnes of CO₂ equivalents lost through fugitive emissions over the 2022–2023 reporting period. This is expected to remain relatively constant over the EP period.

Discrete, relatively small volumes of packed gases and charged systems including refrigerant gases are used across the NY FPSO and vessels, which have potential for small volume leaks (typically less than 100 kg per isolatable inventory). Such gases are used in the HVAC and refrigerant systems onboard the NY FPSO and vessels.

Indirect Emissions

Emissions from Vessels and Helicopters

GHG and Atmospheric emissions are generated by vessels and helicopters supporting NY activities. Atmospheric and GHG emissions from support vessels vary depending on the nature of activities being undertaken; for example, travelling or “steaming” to a destination at low speed uses less fuel and generates lower atmospheric and GHG emissions than high speed steaming. Emissions generated during safety related vessel standby activities, holding station using DP during loading and unloading of materials to the facility or undertaking subsea IMR work also vary.

Anticipated annual emissions for vessel and helicopter activities have been estimated to be:

- 3,000 tCO₂-e for support vessels, based on historical support vessel diesel consumption in 2021.
- 320 tCO₂-e for helicopters, based on number of flights in 2022.

Indirect emissions from these sources are expected to be relatively constant throughout the EP period and until EOFL.

Emissions from Shipping, Refining and End-Use Attributable to NY

Indirect emissions associated with NY result from shipping, refining and combustion/end use of hydrocarbons. Indirect GHG emissions associated with NY operations were estimated using historical and forecasted production rates (Table 6-11). Key influences impacting indirect greenhouse gas emissions from NY include: total production – indirect emissions are proportional to total production, which varies with shutdown activity, new field tiebacks or gradual reservoir decline.

Based on historical and forecasted production rates, the indirect emissions associated with NY from end use of hydrocarbons are estimated to be approximately 3.30 MtCO₂-e per annum. These annual emissions are likely to continue through this EP period. This estimate may vary, particularly the timeframe beyond this current EP period, as it is subject to many factors, such as reservoir performance. Woodside’s current forecast is that the reservoirs produced via NY will decline toward EOFL. Other reservoirs may be discovered and/or tied-back to NY to mitigate the decline, but overall, the trend of hydrocarbon production from NY and associated indirect emissions from end use of hydrocarbons are expected to also decline.

Table 6-11: Summary of direct and indirect emissions attributable to Ngujima-Yin facility

Source of Impact	Annual Estimated Emissions (MtCO ₂ -e)	Total Possible Emissions for EP Period (MtCO ₂ -e)
Direct Emissions		
Fuel, flaring and fugitives	0.36	1.78
Indirect Emissions		
Vessels and helicopters	0.003	0.02
Third party transport of products, refining and combustion ¹	3.30	16.48

¹ Transport and refining based on Oil-Climate Index factors for Australia Cossack. Combustion factors aligned with UN’s 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Impact Assessment

Global efforts to reduce greenhouse gas emissions in order to meet climate goals are changing the way the world produces and consumes energy. This energy transition is uncertain and there is a wide range of potential demand for oil, gas and new energy including in pathways consistent with limiting global temperature rise. Today, Woodside has a portfolio of oil and gas assets. We are also developing a portfolio of new energy products and lower carbon services. Across our portfolio we seek to match the pace, scale and needs of our customers as they determine their own decarbonisation pathways. We see an ongoing role for natural gas from the NY facility to support our customers’ plans to secure their energy needs, while they reduce their emissions.

Air Quality

Facility and vessel routine and non-routine emissions, predominantly routine fuel combustion and flaring, have the potential to result in localised, temporary reduction in air quality, generation of dark smoke, and contribution to greenhouse gas emissions. Potential impacts of emissions depend on the nature of the emissions, as well as the location and nature of the receiving environment.

NY FPSO design (including the rapidly dispersive characteristics of the gas turbine exhausts, flare and other emissions), the estimated level of pollutants in the emissions, and the absence of elevated background ambient levels have been considered in estimating the potential for interaction with human and environmental sensitivities. The NY facility and Operational Area is in a remote offshore location, with no expected adverse interaction with populated areas or sensitive environmental receptors associated with air emissions.

There is a foraging BIA for the wedge-tailed shearwater overlapping the Operational Area; as such, wedge-tailed shearwaters may occur nearby to the facility airshed. The nearest potential seabird roosting habitat, Muiron Islands, lies approximately 35 km south of the Operational Area at the closest point. Given the highly dispersed nature of air emissions from the Petroleum Activities Program, no adverse impacts to wedge-tailed shearwaters are anticipated due to air emissions.

Potential impacts are expected to be short-term, localised air quality changes, limited to the airshed local to the NY FPSO. Air emission impacts are not expected to have direct or cumulative impacts on sensitive environmental receptors.

The flare and potential black smoke resulting from emissions may impact visual amenity. The offshore location of the NY FPSO is not directly visible from the nearest point of the mainland (North West Cape, 43 km south of the Operational Area at the closest point). Hence, no impacts to visual amenity for residential communities are expected. Visual amenity impairment to tourism activities is not expected.

Greenhouse Gas Emissions

This impact assessment considers the potential impacts of climate change on sensitive receptors, including MNES within Australian jurisdictions. Climate change impacts cannot be directly attributed to any one activity, as they are instead the result of global GHG emissions, minus global GHG sinks, that have accumulated in the atmosphere since the industrial revolution started. They do not take into account the net impact of each project or activity. There is no direct link between greenhouse gas emissions from the NY facility and climate change impacts.

Impacts relating to climate change associated with the emission of GHG (direct and indirect) have been assessed in this EP in accordance with the EPBC Act Policy Statement - 'Indirect consequences' of an action: Section 527E of the EPBC Act (DSEWPAC, 2013).

Climate change impacts upon Australian receptors cannot be linked to the NY facility but are instead the result of the accumulation of net greenhouse gas emissions in the atmosphere. The accumulation of net greenhouse gas emissions in the atmosphere is, in turn, influenced by global energy demand and the composition of the global energy mix. Although the NY FPSO operations cannot be linked to climate change impacts, the following contextual evaluation is provided. This contextual evaluation assessment considers the potential impacts of climate change on sensitive receptors, including MNES within Australian jurisdictions.

Climate science is a rapidly evolving field in which new observations continue to deepen understanding of the current and potential impacts of global warming, and the possible pathways for mitigation and adaptation (Woodside 2023a).

The IPCC is the United Nations body for assessing the science related to climate change and is finalising the Sixth Assessment Report (AR6) which consists of three Working Group contributions and a Synthesis Report. The outcomes of the working group contributions were summarised in Woodside's (2023a) Climate Report:

- The AR6 Working Group I (AR6-WG1) report stated that it is unequivocal that there is human-induced warming. It also stated that increased atmospheric carbon dioxide (CO₂) levels, generated by human activity, are the largest driver of warming over the longer term, and that there are a range of factors, including emissions of methane, which increase warming in the short-term.
- The AR6-WG2 report stated that human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and related losses and damages to nature and people, beyond natural climate variability. It stated that global warming, reaching 1.5°C in the near-term, would cause unavoidable increases in multiple climate hazards and present multiple risks to ecosystems and humans. The report noted that societal choices and actions implemented in the next decade will determine the extent to which medium- and long-term pathways will deliver climate resilient development.
- The AR6 Working Group III (AR6-WG3) report provided an updated global assessment of climate change mitigation progress and pledges and examined the sources of global emissions. It explained developments in emissions reduction and mitigation efforts and assessed the impact of national climate pledges in relation to long-term emissions goals. More than 2,000 quantitative emissions pathways were submitted to the IPCC, of which 1,202 scenarios included sufficient information for assessing the associated warming. The report found that there are many pathways in the literature that likely limit global warming to 2°C with no overshoot, or to 1.5°C with limited overshoot. These variations occur because, while climate science is able to calculate a 'carbon budget' of net emissions before any particular temperature outcome is reached, the allocation of this budget between different human activities requires additional judgements about for example technology, economics, consumer preferences and policy choices.

The AR6 Working Group I (AR6-WGI) report states "[c]limate change is a global phenomenon, but manifests differently in different regions" (IPCC 2021b). IPCC projections for climate change in Australia from the AR6 Working Group II (AR6-WGII) report include:

- further climate change is inevitable, with the rate and magnitude largely dependent on the emission pathway (*very high confidence*)³⁷
- ongoing warming is projected, with more hot days and fewer cold days (*very high confidence*)
- further sea level rise, ocean warming, and ocean acidification are projected (*very high confidence*)
- less winter and spring rainfall is projected in southern Australia, with more winter rainfall in Tasmania, less autumn rainfall in southwestern Victoria and less summer rainfall in western Tasmania (*medium confidence*), with uncertain rainfall changes in northern Australia.
- more extreme fire weather is projected in southern and eastern Australia (*high confidence*)
- increased drought frequency is projected for southern and eastern Australia (*medium confidence*)
- increased heavy rainfall intensity is projected, with fewer tropical cyclones and a greater proportion of severe cyclones (*medium confidence*) (Lawrence et al. 2022).

The AR6-WGII report identified nine key climate risks for the Australasian region:

- loss and degradation of coral reefs and associated biodiversity and ecosystem service values in Australia due to ocean warming and marine heatwaves (*very high confidence*)
- loss of alpine biodiversity in Australia due to less snow (*high confidence*)
- transition or collapse of alpine ash, snowgum woodland, pencil pine and northern jarrah forests in southern Australia due to hotter and drier conditions with more fires (*high confidence*)
- loss of kelp forests in southern Australia due to ocean warming, marine heatwaves, and overgrazing by climate-driven range extensions of herbivore fish and urchins (*high confidence*)

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- loss of natural and human systems in low-lying coastal areas due to sea level rise (*high confidence*)
- disruption and decline in agricultural production and increased stress in rural communities in south-western, southern and eastern mainland Australia due to hotter and drier conditions (*high confidence*)
- increase in heat-related mortality and morbidity for people and wildlife in Australia due to heatwaves (*high confidence*)
- cascading, compounding and aggregate impacts on cities, settlements, infrastructure, supply-chains and services due to wildfires, floods, droughts, heatwaves, storms and sea level rise (*high confidence*)
- inability of institutions and governance systems to manage climate risks (*high confidence*) (Lawrence et al. 2022).

An earlier report by Australia's Biodiversity and Climate Change Advisory Group summarised the potential impacts of climate change to marine and terrestrial species, habitats and ecosystems across Australia (Steffen et al. 2009). The 2009 report identified examples of observed changes in Australia's biota that were considered consistent with the emerging climate change 'signal', as genetic constitution, geographic ranges, life cycles, populations, ecotonal boundaries, ecosystems, and disturbance regimes (Steffen et al. 2009). The report also stated:

- "Biodiversity is one of the most vulnerable sectors to climate change"
- "Australia's biodiversity is not distributed evenly over the continent but is clustered in a small number of hotspots with exceptionally rich biodiversity", and that these "include the Great Barrier Reef, south-west Western Australia, the Australian Alps, the Queensland Wet Tropics and the Kakadu wetlands"

Further, it was stated that "many of the most important impacts of climate change on biodiversity will be the indirect ones at the community and ecosystem levels, together with the interactive effects with existing stressors (Steffen et al. 2009). Future climate change (e.g. increased temperature and decreased, but more variable, rainfall) has the potential to have a range of impacts on ecological factors and threaten biodiversity in the Australian mediterranean ecosystem (CSIRO 2017).

Extensive modelling and monitoring studies over the last twenty years provide considerable evidence that global climate change is already affecting and will continue to affect species (Hoegh-Guldberg et al. 2018) however these impacts are likely to be highly species-dependent and spatially variable. The most frequently observed and cited ecological responses to climate change include species distributions shifting towards the poles, upwards in elevation and shifts in phenology (earlier and later autumn life-history events) (M. Dunlop et al. 2012). Climate change may not only change species distribution patterns but also life-history traits such as migration patterns, reproductive seasonality and sex ratios (Steffen et al. 2009).

Impacts of climate change such as altering temperature, rainfall patterns and fire regimes, are likely to lead to changes in vegetation structure across all terrestrial ecosystems within Australia (M. Dunlop et al. 2012; Steffen et al. 2009). Increases in fire regimes will impact Australian ecosystems altering composition structure, habitat heterogeneity and ecosystem processes. Changes in climate variability, as well as averages, could also be important drivers of altered species interactions, both endemic and invasive species (M. Dunlop et al. 2012). Climate change could result in significant ecosystem shifts, as well as alterations to species ranges and abundances within those ecosystems (Hoegh-Guldberg et al. 2018).

The 'loss of climatic habitat caused by anthropogenic emissions of greenhouse gases' has been listed as a key threatening process under the EPBC Act (DCCEEW 2021). The threatening process consists of reductions in the bioclimatic range within which a given species or ecological community exists due to emissions induced by human activities of greenhouse gases (DCCEEW 2021). The process is considered to have a continental distribution, including both terrestrial and marine areas. Ecosystems in which the process occurs include: alpine habitats, coral reefs, wetlands and coastal ecosystems, polar communities, tropical forests, temperate forests, and arid and semi-arid environments (DCCEEW 2021).

Coral reefs were recognised by both IPCC and the Australian Government as being at risk of climate change (Lawrence et al. 2022; DCCEEW 2021). Protected coral reef areas in Australia include those within World Heritage listed sites, such as Ningaloo Coast, Shark Bay, or the Great Barrier Reef. Climate change has been identified as a threat for each of these World Heritage areas, with potential risks to coral reef as well as other environmental values (such as marine fauna) within these ecosystems (IUCN 2020b; 2020c; 2020a).

Climate variability and change has been identified as a threat to some EPBC Act protected species, including marine turtles, whales, seabirds and migratory shorebirds:

- the Recovery Plan for Marine Turtles in Australia (CoA 2017) states that "[c]limate change is of particular concern to marine turtles because it is likely to have impacts across their entire range and at all life stages. Climate change is expected to cause changes in dispersal patterns, food webs, species range, primary sex ratios, habitat availability, reproductive success and survivorship".
- the Conservation Management Plan for the Blue Whale (CoA 2015a) states: "[c]limate change is expected to cause changes in migratory timing and destinations, population range, breeding schedule, reproductive success and survival of baleen whales, including blue whale species and subspecies"

³⁷ A level of confidence is expressed using five qualifiers: very low, low, medium, high, and very high. For a given evidence and agreement statement, different confidence levels can be assigned, but increasing levels of evidence and degrees of agreement are correlated with increasing confidence (Lawrence et al. 2022).

- the Wildlife Conservation Plan for Seabirds (CoA 2022) states that “[c]onsequences to seabirds could include negative impacts from an increase in extreme weather events, reduced or changed prey abundance and distribution, and decrease in nesting habitat”
- the Wildlife Conservation Plan for Migratory Shorebirds (CoA 2015) states that “[s]uch changes have the potential to affect migratory shorebirds and their habitats by reducing the extent of coastal and inland wetlands or through a poleward shift in the range of many species”.

The North-west Marine Parks Network Management Plan 2018 (DNP 2018) identifies climate change as a pressure that may impact marine park values. The management plan states that “[t]he impacts of climate change on the marine environment are complex and may include changes in sea temperature, sea level, ocean acidification, sea currents, increased storm frequency and intensity, species range extensions or local extinctions, all of which have the potential to impact on marine park values” (DNP 2018).

Within the Marine Bioregional Plan for the NWMR (DSEWPac 2012), pressures related to climate change are assessed as ‘of potential concern’ for species of marine turtle, inshore dolphins, sawfish, sea snakes, whale shark, dugong, and seabird and shorebird, as well as the KEFs and shipwrecks known to occur in the NWMR.

As described above, human-induced climate change may impact a range of climatic variables, and if the impacts occur, they may impact individual species, ecosystems, and ecosystem services.

Greenhouse gas emissions from the NY FPSO facility are, taking into account global greenhouse gas sinks, considered to be a *de minimis* amount in relation to gross global greenhouse gas emissions and there is no direct link between greenhouse gas emissions from the NY FPSO facility and climate change impacts upon Australian receptors.

It is not possible to link GHG emissions from NY FPSO with climate change or any particular climate related impact given:

- It is the net global GHG concentrations that cause climate change and climate related impacts.
- Estimated scope 1 and scope 3 emissions associated with NY FPSO are negligible in the context of existing and future predicted global concentrations.
- The inability to precisely predict the amount of total future global GHG emissions.
- The inability to predict future national and international initiatives on climate change and the impact they will have on total future global GHG emissions, including NY FPSO emissions.

Ecosystems that are particularly susceptible to adverse effects of climate change include alpine habitats, coral reefs, wetlands and coastal ecosystems, polar communities, tropical forests, temperate forests and arid and semi-arid environments (DoEE, 2019). In Australia, this includes coral reefs, alpine regions, rainforests, arid and semi-arid environments, mangroves, grasslands, temperate forests and sclerophyll forests. Future climate change (increased temperature and decreased, but more variable, rainfall) has the potential to have a range of impacts on ecological factors and threaten biodiversity in the Australian Mediterranean ecosystem (CSIRO, 2017).

Ecological Impacts

Redistribution and reorganisation of natural of natural systems, driven by climate-change, is a major threat to biodiversity (Chapman et al., 2020). A report by Australia’s Biodiversity and Climate Change Advisory Group summarises the potential impacts of climate change to marine and terrestrial species, habitats and ecosystems across Australia (Steffen et al., 2009).

Extensive modelling and monitoring studies over the last twenty years provide considerable evidence that global climate change is already affecting and will continue to affect species (Hoegh-Guldberg et al., 2018); however, these impacts are likely to be highly species-dependent and spatially variable. The most frequently observed and cited ecological responses to climate-change include species distributions shifting towards the poles, upwards in elevation and shifts in phenology (earlier and later autumn life history events) (Dunlop et al., 2012). Climate change may not only change species distribution patterns but also life-history traits such as migration patterns, reproductive seasonality and sex-ratios.

Impacts of climate change such as altering temperature, rainfall patterns and fire regimes, are likely to lead to changes in vegetation structure across terrestrial ecosystems within Australia (, Dunlop et al., 2012). Increases in fire regimes will impact Australian ecosystems altering composition structure, habitat heterogeneity and ecosystem processes. Changes in climate variability, as well as averages, could also be important drivers of altered species interactions, both native and invasive species (Dunlop et al., 2012). Climate change could result in significant ecosystem shifts, as well as alterations to species ranges and abundances within those ecosystems (Hoegh-Guldberg et al., 2018).

The IPCC Special Report describes impacts of warming above pre-industrial levels to key receptor groups including terrestrial ecosystems, mangroves, warm-water corals, unique and threatened systems, and arctic regions (Hoegh-Guldberg et al., 2018). These receptor groups show varying sensitivity to warming conditions, with a range of responses shown at 1 °C warming; from corals suffering moderate impacts, to mangroves not showing any impacts that are detectable and attributable to climate change (Hoegh-Guldberg et al., 2018). Once warming reaches 1.5 °C, all receptor groups show impacts attributable to climate change with severity ranging from moderate impacts that are detectable and attributable to climate change (mangroves), to impacts that are severe and widespread (warm-water corals) (Hoegh-Guldberg et al., 2018). At the point where global temperature rise, due to climate change, reaches

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2°C, increasing numbers of receptor groups suffer impacts which are high to very high, and likely to be irreversible (terrestrial ecosystems, warm-water corals, unique and threatened systems, and arctic regions) (Hoegh-Guldberg et al., 2018). Some key impacts are discussed further in sections to follow.

Terrestrial Ecosystems

All terrestrial ecosystems are likely to be impacted by a changing climate (Steffen et al., 2009; Hughes, 2010; Dunlop et al., 2012; Hoegh-Guldberg et al., 2018). The predicted impact of climate change on these ecosystems is highly variable, both between ecosystems and within individual ecosystems (Dunlop et al., 2012). Below is a summary of impacts to key terrestrial ecosystems.

Tropical Rainforests

Projections of future climate changes in the wet tropics of Australia under different scenarios are outlined by McInnes (2015). It is likely that temperatures in the wet tropics will become hotter and potentially fires and cyclones will be more intense. Consequently, there is an increased probability of fires penetrating into rainforest vegetation resulting in a shift from fire-sensitive vegetation to communities dominated by fire-tolerant species; and changing rainforest disturbance regime as cyclones become more intense) (Hughes, 2011; Steffen et al., 2009). Changes in the timing of seasons (e.g. extended summer) could cause change in the seasonal response of plants, and alterations to species ranges and abundances (Hoegh-Guldberg et al., 2018).

Alpine/Montane Areas

Alpine systems are generally considered to be among the most vulnerable to future climate change (Hughes, 2003). The extent of true alpine habitat in Australia is very small (0.15% of the Australian land surface) with limited high-altitude refuge (Hughes, 2003).

Australian alpine regions are home to a variety of alpine vertebrates who rely on snow cover for their survival. There is evidence of a reduction in populations of dusky antechinus, broad-toothed rats and the mountain pygmy possum. The first two species are active under the snow throughout winter and are therefore subject to increased predation by foxes when snow is reduced (Hughes, 2003). The pygmy possum depends upon snow cover for stable, low temperatures during hibernation (Hughes, 2003).

Marine Ecosystems

Sea surface temperatures have increased across the globe over recent decades which poses a significant threat to marine ecosystems including changes to species abundance, community structure and increased frequency and intensity of thermally induced coral bleaching events (CSIRO, 2017).

Between 1901 and 2018, Global mean sea level is estimated to have risen by 0.2 m with a rate of rise that has accelerated to on average 3.7 mm per year (2006–2018) due to climate change with ice sheet and glacier mass loss being the primary contributors during this period (IPCC, 2021). In addition to changes in sea level, oceanic warming has also served to alter ocean currents around Australia. In response to both ocean warming and stratospheric ozone depletion the East Australian Current has increased in strength by about twenty percent since 1978 (Cai and Cowan, 2006).

Sea-surface temperatures are projected to continue to increase, with estimates of warming in the Southern Tasman Sea of between 0.6 to 0.9°C and between 0.3 to 0.6°C elsewhere along the Australian coast by 2030 (Church et al., 2006). Sea levels are projected to increase by 28 to 55 cm by 2100 under the lowest emissions scenario modelled by the IPCC in response to both thermal expansion and melting of ice-sheets (IPCC, 2021). This will lead to some coastal inundation affecting mangroves, salt marshes and coastal freshwater wetlands. Furthermore, as CO₂ is gradually absorbed by oceans and fresh water, the water becomes more acidic, which increases the solubility of calcium carbonate, the principal component of the skeletal material in aquatic organisms (Steffen et al., 2009). Below is a summary of potential climate change impacts to two key ecosystems - mangroves and coral reefs.

Mangroves

Mangrove ecosystems in Australia will face higher temperatures, increased evaporation rates and warmer oceans (McInnes, 2015) as well as an associated sea-level rise (Hoegh-Guldberg et al., 2018). Modelling indicates an increased likelihood of future severe and extended droughts across parts of Northern Australia (Dai, 2013). Consequently, mangrove ecosystems may increase their southern range as a result of warmer temperatures. However, higher temperatures and evaporation rates, and extended droughts could lead to die-offs in northern Australia and a change in mangrove distribution and abundance (Duke et al., 2017). Mangrove systems should cope with rising sea-level by accumulating more peat or mud which will give them the opportunity to adjust to a rising sea level (Field, 1995).

Coral Reefs

Climate change has emerged as a threat to coral reefs, with temperatures of just 1°C above the long-term summer maximum for an area over 4–6 weeks being enough to cause mass coral bleaching and mortality (Baker et al., 2008; Hoegh-Guldberg, 1999; Hughes et al., 2017; Spalding and Brown, 2015). Coral mortality or die-off following coral bleaching events can stretch across thousands of square kilometres of ocean (Gilmour et al., 2016; Hoegh-Guldberg, 1999; Hughes et al., 2017). The impacts associated with a warming ocean, coupled with increasing acidification, are expected to undermine the ability of tropical coral reefs to provide habitat for fish and invertebrates, which together provide a range of ecosystem services (e.g. food, livelihoods, coastal protection) (Hoegh-Guldberg et al., 2018).

Social Impacts

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Changes to climate can result in impact to social receptors that have values which include the ecological receptors (discussed above). This includes KEFs and AMPs. Climate change also impacts on the functions, interests or activities of other users which rely on ecological value, including commercial and recreational fisheries and tourism.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁸	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
NY FPSO (when disconnected) and contract vessels compliant with Marine Order 97 (Marine Pollution Prevention – Air Pollution).	F: Yes CS: Minimal cost. Standard practice.	Marine Order 97 is required under Australian regulations; implementation is standard practice for commercial vessels as applicable to vessel size, type and class.	Control based on legislative requirements – must be adopted.	Yes C 6.1
National Greenhouse and Energy Reporting Scheme and National Pollutant Inventory (NPI) reporting – estimation of greenhouse gas, energy and criteria pollutants.	F: Yes CS: Minimal cost. Standard practice.	Control based on legislative requirements to provide the national reporting framework for the reporting and dissemination of information related to emissions, hazardous wastes, greenhouse gas emissions, greenhouse gas projects, energy consumption and energy production to meet the objectives and desired outcomes of the legislation(s) such as: <ul style="list-style-type: none"> • the maintenance and improvement of air and water quality, minimisation of environmental impacts associated with hazardous wastes; and an improvement in the sustainable use of resources • act as the single framework to inform policy, meet reporting requirements, avoid duplication, and to ensure that facility net greenhouse gas emissions are managed within applicable baselines. 	Control based on legislative requirements – must be adopted.	Yes C 6.2

³⁸ Qualitative measure.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁸	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Apply for and manage net direct and indirect GHG emissions to within the relevant baseline under the <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i> .	F: Yes CS: Minimal cost. Standard practice.	Control based on legislative requirement utilising the national reporting framework for the reporting of information related to GHG emissions. The Safeguard Mechanism requires Operators to offset carbon emissions in excess of the relevant baseline using Australian Carbon Credit Units (ACCUs).	Control based on legislative requirements – must be adopted.	Yes C 6.3
Good Practice				
Forecast, measure, monitor and or estimate facility fuel and flare emissions (in accordance with NGRS/NPI) to inform optimisation management practices and minimise environmental impact of direct NY and indirect emissions.	F: Yes CS: Minimal cost. Standard practice.	Minimises environmental impact of emissions through planning, ongoing review, governance and optimisation. It combines with good operating practice to maximise production, reduce fuel gas use and emissions to manage cost, which improves energy intensity (e.g. cleaner production), optimising emissions from NY. Fuel and flared gas are potential product streams, as such, Woodside applies routine short and long term optimisation and opportunity management framework to identify and prioritise enhancement opportunities which includes improvements through energy efficiency, reduced fuel and flare gas usage (e.g. reduced flare purge rates). Annual fuel and flare target setting followed by monthly reporting enables review of performance, investigation of trends and insights to improve overall energy intensity.	Control is WMS requirement – must be adopted.	Yes C 6.4
Implement the <i>Methane Guiding Principles Management Guideline</i> at NY Facility.	F: Yes CS: Some cost associated with implementation of a new WMS guideline on an offshore facility. Can be managed by proving technology application and process at onshore facilities and sharing learnings.	Methane reduction activities are aligned with environment, social and governance expectations. Reduction of methane fugitives reduces facility GHG emissions with high short term global warming potential and aligns with commitments under Methane Guiding Principles.	Control is a WMS requirement – must be adopted.	Yes C 6.5

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<p>Implement a program to monitor market developments related to the contribution of hydrocarbons in the energy transition by:</p> <ul style="list-style-type: none"> • Supporting our customers and suppliers by identifying opportunities to collaborate on their decarbonisation pathways • Invest in new energy products and lower-carbon services by seeking to match the pace, scale and needs of our customers as they determine their own decarbonisation pathways • Promote global measurement and reporting by participating in industry collaboration initiatives to mature, harmonise and advocate for transparent measurement and reporting • Working across the value chain to reduce methane emissions in third party systems, such as through the adoption of the Methane Guiding Principles • Supporting the development of new technologies to reduce higher carbon intensive energy sources • Advocacy for stable policy frameworks that reduce carbon emissions • Monitoring the global energy outlook, including the demand for lower carbon intensive energy 	<p>F: Yes CS: Moderate cost. Standard practice.</p>	<p>Woodside supporting customers and suppliers to reduce their GHG emissions implementing a program to monitor market developments related to the contribution of hydrocarbons in the energy transition, allows informed decisions to be made in the context of the world's transitioning to a lower carbon future aligned with the Paris Agreement objective to hold the increase in the global average temperature to well below 2°C above pre-industrial levels.</p>	<p>Benefits outweigh cost sacrifice.</p>	<p>Yes C 7.1</p>
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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS) ³⁸	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Individual investment decisions are subject to Woodside's investment targets. Not guidance. Potentially includes both organic and inorganic investment.				
<p>Undertake an annual review of indirect emissions. This review will include an assessment of the:</p> <ul style="list-style-type: none"> program to determine its effectiveness against the objectives and identify adaptations, if required yearly indirect emissions attributable to NY in comparison to the EP estimates (as per Table 6-11), from transport, refining and combustion methods used to determine yearly indirect emissions estimates. 	<p>F: Yes CS: Moderate cost. Standard practice.</p>	<p>The program (C 7.1) will be consistent with the transition to a lower carbon future and is aligned with Paris Agreement to limit climate change to well below 2°C. The review process will confirm the program is effective.</p>	<p>Benefits outweigh cost sacrifice.</p>	<p>Yes C 7.2</p>

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁸	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Professional Judgement – Eliminate				
Eliminate flaring by venting un-combusted hydrocarbons.	F: No. Routine hydrocarbon venting is not considered good industry practice; as unburnt hydrocarbons pose potential for greater environment impact compared to combustion emissions. The ability to flare hydrocarbons is a key safety feature on the facility. Removing the ability to flare hydrocarbons may result in unacceptable safety risks on the NY facility. CS: Not assessed, control not feasible.	Not assessed, control not feasible.	Not assessed, control not feasible.	No
Professional Judgement – Substitute				
Use fuel gas derived from subsea wells in preference to diesel fuel for power generation.	F: Yes, fuel gas is the primary fuel source on NY. CS: Cost effective.	Diesel substitution reduces CO ₂ emissions for a given unit of power and reduces spill risk associated with fuel bunkering activities.	Cost effective. Opportunities minimise fuel bunkering transfer risks.	Yes C 6.6
Professional Judgement – Engineered Solution				
Maintain flare to maximise efficiency of combustion and minimise venting, incomplete combustion waste products and smoke emissions.	F: Yes. CS: Minimal cost. Standard practice.	Flare tip integrity and ignition system functionality minimises potential for venting, incomplete combustion waste products and smoke emissions.	Control is WMS requirement – must be adopted.	Yes C 6.7

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)³⁸	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
<p>Atmospheric Emissions</p> <p>Given the adopted controls appropriate to manage the impacts of NY facility and vessel atmospheric emissions. As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p> <p>GHG Emissions</p> <p><u>Risk-Based Analysis</u></p> <p>Application of Woodside’s Risk Management Procedures, implementation of the Emissions and Energy Management Procedure and Production Optimisation and Opportunity Management Procedure reduces GHG emissions risk to ALARP. This includes a system of continual review and improvement of key emissions sources from the NY FPSO</p> <p><u>Societal Values</u></p> <p>Consultation was undertaken for this program to identify the views and concerns of relevant stakeholders, as described in Section 5. No specific concerns around air emissions, resulting in changes to air quality and greenhouse gas emissions, were identified through this process.</p> <p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type (i.e. Decision type A and B for direct and indirect emissions respectively), Woodside considers the adopted controls appropriate to manage the impacts from GHG emissions from the NY facility and indirect emissions sources that Woodside can practicably influence, including support vessels, during the five year term of this EP. The adopted controls meet legislative requirements including:</p> <ul style="list-style-type: none"> • Marine Order 97 for support vessels • NGRS and NPI reporting for direct emissions attributed to the NY FPSO • National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015. <p>As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p>				

Demonstration of Acceptability
<p>Acceptability Statement: Atmospheric Emissions</p> <p>Given the adopted controls, atmospheric emissions represent a negligible impact that is unlikely to result in greater than isolated impacts within close proximity of the Operational Area. The adopted controls are considered good oil-field practice/industry best practice and meet requirements of Australian Marine Orders and National Pollutant Inventory reporting.</p> <p>The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of atmospheric emissions to a level that is broadly acceptable</p> <p>Acceptability Statement: Greenhouse Gas Emissions</p> <p><i>Principles of Ecologically Sustainable Development</i></p> <p>Giving consideration to economic development that safeguards the welfare of future generations, the NY facility is considered to align with the following core objectives of ESD by:</p> <ul style="list-style-type: none"> • Committing to management and mitigation measures for GHG emissions within operational control of the facility, given the uncertainty about future climate change trajectories. • Committing to mitigation measures for indirect GHG emissions that are controlled or influenced by Operator and connected to the operations of the NY facility. • Contributing to the UN Sustainable Development Goals of achieving universal access to energy. <p><i>Internal Context</i></p> <p>The Petroleum Activities Program is consistent with Woodside corporate policies, culture, processes, standards, structure and systems as outlined in the Demonstration of ALARP and Environmental Performance Outcomes, including:</p> <ul style="list-style-type: none"> • Woodside Health, Safety, Environment Policy

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- Woodside Risk Management Policy
- Woodside Climate Change Policy which includes the following principles that are implemented company-wide:
 - Setting science-based near, mid, and long-term net emissions reduction targets that are consistent with Paris-aligned[3] scenarios, covering equity scope 1 and 2 emissions, both operated and non-operated.
 - Developing and operating oil and gas projects in a manner that is consistent with these targets. This includes the deployment of lower-emission technologies (Design Out), supporting efficient operations (Operate Out) and use of robust offsets (Offset) as methods to reduce and offset greenhouse gas emissions.
 - Investing in new energy products and lower carbon services to reduce customers' emissions (part of Woodside's Scope 3 emissions), including but not limited to hydrogen, ammonia and carbon capture, utilisation and storage.
 - Publishing transparent climate-related disclosures aligned to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) or other recognised global reporting standards.
- Aligning advocacy to the principles of the Climate Policy. Setting clear targets, to reduce net equity emissions below a starting base representative of annual average gross equity emissions for 2016 to our 2020 (Woodside 2023a). Woodside has announced an aspiration of net zero equity Scope 1 and GHG emissions by 2050 or sooner. (Woodside 2023a). WMS requirements such as the GHG emissions and Energy Management Procedure, Production Optimisation and Opportunity Management Procedure and Methane Guiding Principles Management Guideline, which require continuous improvement and demonstration of ALARP in the context of the asset. This is achieved by implementing tools to identify, evaluate, implement, and review emissions reductions projects and develop, govern and report on plans to reduce methane fugitive emissions.

External Context

Woodside recognises that our license to operate from a regulator and societal perspective is based on historical performance, complying with appropriate policies, standards and procedures, and understanding the expectations of external stakeholders. GHG emissions are a global concern, and as such Woodside has undertaken an impact assessment of GHG associated with the NY facility and identified key measures to address this issue.

According to Wood Mackenzie Energy Research Consultancy, LNG from Woodside operated facilities is amongst the lowest carbon intensity in the world delivered into North Asia.³⁹The global consensus on climate change led to the implementation of the Paris Agreement. The aim of the Paris Agreement, as stated in the Article 2.1(a), is to hold the increase in global average temperature to well below 2°C above pre-industrial levels. The Agreement also aims to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change.

Paris Agreement text extract⁴⁰:

“Article 2

1. This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;”

This was reaffirmed in December 2023 in the COP28 decision text on the First global stocktake.⁴¹ The text further recognized that the transition away from fossil fuels in energy systems is to be done in a just, orderly and equitable

³⁹ Export from the Wood Mackenzie LNG Carbon Emissions Tool available from: <https://www.woodside.com/docs/default-source/our-business---documents-and-files/pluto---documents-and-files/wood-mackenzie-lng-carbon-emissions-tool.pdf>

⁴⁰ Paris Agreement: https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

⁴¹ FCCC/PA/CMA/2023L.17 (Draft decision distributed 13 December 2023) First global stocktake text extracts https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf (Section I, Clause 3)

manner accelerating action in this critical decade, so as to achieve net zero by 2050 in keeping with the science.⁴² It also recognises that transitional fuels can play a role in facilitating the energy transition while ensuring energy security⁴³. The Paris Agreement establishes a framework where countries make Nationally Determined Contributions (NDCs) to manage and reduce their own emissions.

Australia has ratified the Paris Agreement and has set a target to reduce emissions by 43 per cent below 2005 levels by 2030 and to reach net-zero emissions by 2050. Australia’s emissions projections under a ‘with additional measures’ scenario is projected to be 43% below 2005 levels by 2030 and to reach net zero emissions by 2050 (DISER 2022a). Australia’s emissions projections demonstrate that it is on track to reduce emissions by up to 43% below 2005 levels by 2030 (DCCEEW 2022; DISER 2022a).

Woodside considers that a stable energy transition will be one in which energy is affordable and reliable, as well as lower carbon. The NY FPSO facility will provide an incremental volume of hydrocarbons to Australian and international markets during its estimated remaining field life. Woodside considers that this development is aligned with their goals for supporting the energy transition and is compatible with the Paris Agreement goal to limit global warming to below 2°C.

Woodside is a signatory to the Methane Guiding Principles (MGP 2022), which is a voluntary, international multi-stakeholder partnership between industry and non-industry organisations that has a focus on reducing methane emissions across the natural gas supply chain, from production to final customer. As part of the WMS, Methane Guiding Principles Management Guideline will be developed and implemented at the NY facility (refer to Internal Context above, and key control measure.

Other requirements (includes laws, polices, standards and conventions):

Legislation and other requirements considered relevant for this aspect, and a demonstration of how these requirements are met, are described below.

Requirement Demonstration	Requirement Demonstration
Marine Order 97 Gives effect to Annex VI of MARPOL 73/78	The requirements of Marine Order 97 are incorporated into the key control measures.
National Greenhouse and Energy Reporting (NGER) scheme Annual GHG reporting for facilities	The requirements of NGER reporting scheme are incorporated into the key control measures.
National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 Emission intensity for reservoir carbon from new gas fields	The requirements of NGER Safeguard Mechanism are incorporated into the key control measures.
National Pollutant Inventory (NPI) Reporting Annual air pollutant reporting	The requirements of annual NPI reporting are incorporated into the key control measures.
Conservation Management Plan for the Blue Whale 2015–2025 Management action A3.1: Continue to meet Australia’s international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica Conservation Advice Balaenoptera borealis Sei Whale Conservation action: Continue to meet Australia’s international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica Conservation Advice Balaenoptera physalus Fin Whale Conservation action: Continue to meet Australia’s international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica	As described above, the predicted atmospheric and GHG emissions from the NY facility are considered de minimis, with no link to climate change impacts on Australian or International receptors. Therefore, the NY facility is not considered to be inconsistent with the Conservation Management Plan for the Blue Whale 2015–2025 (CoA, 2015a), Conservation Advice for Sei Whale (TSSC 2015a), Conservation Advice for Fin Whale (TSSC, 2015b), Conservation Management Plan for the Southern Right Whale (DSEWPaC, 2012a), or the Recovery Plan for Marine Turtles in Australia (CoA, 2017).

⁴² FCCC/PA/CMA/2023L.17 (Draft decision distributed 13 December 2023) First global stocktake text extracts https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf (Section II, Subsection A, Clause 28 (d))

⁴³ FCCC/PA/CMA/2023L.17 (Draft decision distributed 13 December 2023) First global stocktake text extracts https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf (Section II, Subsection A, Clause 29)

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<p>Conservation Management Plan for the Southern Right Whale 2011–2021 Management action A4.1: Continue to meet Australia’s international commitments to reduce greenhouse gas emissions and regulate the krill fishery in Antarctica Recovery Plan for Marine Turtles in Australia Management action A2.1: Continue to meet Australia’s international commitments to address the causes of climate change</p>	
<p>Conservation Advice Rhincodon typus Whale Shark No specific strategies or actions identified Recovery Plan for the White Shark (Carcharodon carcharias) No specific strategies or actions identified Wildlife Conservation Plan for Seabirds No specific strategies or actions identified Wildlife Conservation Plan for Migratory Shorebirds No specific strategies or actions identified Marine bioregional plan for the North-west Marine Region No specific strategies or actions identified North-west Marine Parks Network Management Plan No specific zone rules identified</p>	<p>N/A</p>

Acceptability Statement: Greenhouse Gas Emissions

As per Section 2.8.2 decision type B, GHG emissions are acceptable if “ALARP” is demonstrated using good industry practice and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained. In addition, acceptability is assessed against the above criteria. Further opportunities to reduce the impacts have been investigated (refer ALARP demonstration discussion). Indirect GHG emissions associated with the NY facility are managed to an acceptable level by meeting (where they exist) legislative requirements, industry codes and standards, applicable company requirements, and industry guidelines, and these have been adopted as key controls.

The adopted controls are considered good oil-field practice/industry best practice and are consistent with Woodside’s internal requirements. The potential impacts are considered acceptable if ALARP is demonstrated. As described above, the predicted GHG emissions associated with the NY FPSO facility are considered de minimis and as such, below the acceptable levels and will not materially or substantially contribute to Australia’s net GHG emissions or net Global GHG emissions levels

EPOs, EPSs and MC			
<i>Environmental Performance Outcomes</i>	<i>Controls</i>	<i>Environmental Performance Standards</i>	<i>Measurement Criteria</i>
<p>EPO 6 Assess opportunities to improve energy efficiency and reduce GHG emissions, attributable to NY and within operator influence.</p>	<p>C 6.1 NY FPSO (when disconnected) and contract vessels compliant with Marine Order 97 (Marine Pollution Prevention – Air Pollution).</p>	<p>PS 6.1 NY FPSO and vessels contracted whose practices comply with Marine Orders as applicable to vessel size, type and class.</p>	<p>MC 6.1.1 Marine verification records.</p>

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 6.2 NGERS and NPI reporting – estimation of greenhouse gas, energy and criteria pollutants.	PS 6.2 NY FPSO emissions reported annually in accordance with NGERS and NPI.	MC 8.2.1 NGERs and NPI reporting records.
	C 6.3 Apply for and manage net direct and indirect GHG emissions to within the relevant baseline under the <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i> .	PS 6.3 Manage net direct and indirect GHG emissions to within the accepted baseline, under the <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i> .	MC 6.3.1 Records demonstrate implementation.
	C 6.4 Forecast, measure, monitor and or estimate facility fuel and flare emissions (in accordance with NGERS/NPI and WMS procedures named in Section 7.1.11 to inform optimisation management practices and minimise environmental impact of emissions.	PS 6.4.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P31 – Environmental Emissions Monitoring and Controls to provide means of detection of environmental releases, emissions and discharges to prevent MEEs from manifesting over time, and/or as required to assure compliance monitoring and reporting equipment.	Refer to MC 1.5.1 Section 6.6.1.
		PS 6.4.2 Fuel and flare targets tracked, as required by WMS procedures named in Section 3.9 .	MC 6.4.2 Records demonstrate performance against annual fuel and flare targets.
		PS 6.4.3 Implement Production Optimisation and Opportunity Management Procedure for the NY facility.	MC 6.4.3 Records demonstrate annual process is applied.
		PS 6.4.4 Direct emissions from the operation of NY facility are limited to 360 ktCO ₂ e p.a. ⁴⁴ .	MC 6.4.4 Records demonstrate emissions do not exceed this total.

⁴⁴ The 360 ktCO₂e p.a. is derived from the summation of annual fuel, flare and fugitive emissions, rounded up to nearest thousand.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 6.5 Implement the WMS Methane Guiding Principles Management Guideline at NY.	PS 6.5 Develop and implement a Methane Reduction Plan for NY, including identification of accountability for implementation.	MC 6.5.1 Methane Reduction Plan for NY developed and implemented.
	C 6.6 Fuel gas derived from subsea wells will be used in preference to diesel for power generation.	PS 6.6 Fuel gas derived from subsea wells will be used preferentially to diesel.	MC 6.6.1 Annual fuel consumption records demonstrate fuel gas provided the majority of the FPSOs energy demand.
	C 6.7 Maintain flare to maximise efficiency of combustion and minimise venting, incomplete combustion waste products and smoke emissions.	Refer to PS 6.4.2 (Above).	Refer to MC 6.4.2 (Above).

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 7 Actively support the global transition to a lower carbon future by compliance with relevant Corporate Woodside policies, including those designed to monitor market developments related to natural gas in the energy transition, and to support customers and suppliers to reduce their GHG emissions.</p>	<p>C 7.1 Implement a program to monitor market developments related to the contribution of hydrocarbons in the energy transition by:</p> <ul style="list-style-type: none"> • Working across the value chain to reduce methane emissions in third party systems, such as through the adoption of the Methane Guiding Principles • Supporting the development of new technologies to reduce higher carbon intensive energy sources • Advocacy for stable policy frameworks that reduce carbon emissions • Monitoring the global energy outlook, including the demand for lower carbon intensive energy 	<p>PS 7.1 A program designed to support customers and suppliers reduce their emissions, monitor market developments, related to natural gas in the energy transition, and to support customers and suppliers to reduce their GHG emissions, is implemented.</p>	<p>MC 7.1 Progress of the program will be reported in climate-related disclosures, to industry standard, for example TCFD or equivalent.</p>

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 7.2</p> <p>Undertake an annual review of indirect emissions. This review will include an assessment of the:</p> <ul style="list-style-type: none"> • program to determine its effectiveness against the objectives and identify adaptations, if required. • yearly indirect emissions attributable to NY in comparison to the EP estimates (as per Table 6-11), from transport, refining and combustion. • methods used to determine yearly indirect emissions estimates. 	<p>PS 7.2</p> <p>Undertake an annual review of the program to determine its effectiveness and adapt the program accordingly.</p> <p>The annual review will also include an assessment of indirect emissions, attributable to NY and appropriateness of the methods used.</p>	<p>MC 7.2.1</p> <p>Records demonstrate an annual review has been undertaken.</p>

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6.6.7 Routine Light Emissions: Light Emissions from Ngujima-Yin Floating Production, Storage and Offloading Facility, Vessel Operations and Operational Flaring

Context															
Operational Details – Section 3.6 Support Vessel Operations – Section 3.7 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10				Biological Environment – Section 4.5				Consultation – Section 5							
Impacts and Risks Evaluation Summary															
Source of Risk	Environmental Value Potentially Impacted							Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome	
Light emissions from NY FPSO and vessels.						✓		A	E	-	-	LCS GP	Broadly Acceptable	EPO ⁸	
Light emissions from NY FPSO during flaring.						✓		A	E	-	-				
Description of Source of Impact															
<p>Lighting is used to allow safe operations and to communicate the presence of the NY FPSO and vessels to other marine users (i.e. navigation lights), and cannot reasonably be eliminated. External lighting is located over the entire NY FPSO deck, as well as vessels, with most external lighting directed towards working areas such as the topsides of the FPSO, or the back deck of vessels. This limits light spill to the environment. External lighting on vessels is typically lower than the NY FPSO lights, with vessel lighting usually reduced to improve night vision of bridge crew.</p> <p>During IMMR activities, underwater lighting is generated over short periods of time while ROVs are in use, as well as from deck lighting. Given the typical low intensity of ROV lights and the attenuation of light in seawater, light from ROVs is localised to the vicinity of the ROV and vessels. All IMMR activities will occur within the Operational Area.</p> <p>A relatively small quantity of gas is required to be continuously flared associated with purge and pilot of the flare system and disposal of waste streams which are not recovered to the process. Intermittent flaring may occur during operational activities and are further described in Section 3.6.3.2. With the top of the flare tower (the highest point of the facility) approximately 90 m above the deck, the distance to the horizon at which components of the NY FPSO is directly visible can be estimated using the formula below:</p> <p><i>horizon distance = 3.57 × √height</i></p> <p>In this formula “horizon distance” is the distance to the horizon at sea level in kilometres, and “height” is the height above sea level of the light source in metres. Using this formula, the maximum distance at which the flare tower tip is visible at sea level is approximately 37 km from NY FPSO.</p>															
Impact Assessment															
<p>Lighting from the facility and vessels may appear from direct unshielded light sources or through skyglow. Where direct light falls upon the ocean, this area of light is referred to as light spill. Skyglow is the diffuse glow caused by light that is screened from view, but through reflection and refraction creates a glow in the atmosphere. The distance at which direct light and skyglow may be visible from the source is dependent on the lighting on the facility/vessel and environmental conditions.</p> <p>Receptors that have important habitat present within a 20 km buffer of the Operational Area were considered as having potential for interaction, based on recommendations of the <i>National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (NLPG)</i>. The 20 km threshold provides a precautionary</p>															
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limit based on observed effects of sky glow on marine turtle hatchlings (15 to 18 km) and fledgling seabirds grounded in response to artificial light 15 km away (Commonwealth of Australia, 2020).

Light emissions can affect fauna in two main ways:

- Behaviour: many organisms are adapted to natural levels of lighting and the natural changes associated with the day and night cycle, as well as the night-time phase of the moon. Artificial lighting has the potential to create a constant level of light at night that can override these natural levels and cycles.
- Orientation: marine turtles and birds may also use lighting from natural sources to orient themselves in a certain direction at night. In instances where an artificial light source is brighter than a natural source, the artificial light may act to override natural cues, leading to disorientation.

Potential fauna are predominantly pelagic fish and zooplankton, with a low abundance of transient species such as marine turtles, whale sharks and large whales transiting through the Operational Area. Habitat critical to the survival of the green turtle, loggerhead turtle, leatherback turtle and the hawksbill turtle is overlapped by, or adjacent to the Operational Area (**Section 4.6.2**). There are no other known critical habitats within the Operational Area for EPBC listed species, although there are BIAs listed in **Section 4.5** that overlap the Operational Area.

Seabirds

Artificial lighting can attract and disorient seabird species resulting in species behavioural changes (circling light sources or disrupting foraging, injury or mortality near the light source as a result of collision (Gaston et al., 2014).

The most vulnerable life stages for seabirds and migratory shorebirds are nesting adults or fledglings. Nesting or fledgling seabirds and migratory shorebirds are vulnerable to artificial lighting within 20 km of the nesting location (Commonwealth of Australia, 2020). There is a breeding BIA for the wedge-tailed shearwater overlapping the Operational Area; as such, wedge-tailed shearwaters may occur within the Operational Area. Nearby seabird roosting habitats include Ningaloo Marine Park (8.6 km SE), Gascoyne Marine Park (7.7 km SW) and Muiron Islands Marine Management Area (10.4 km SE).

Adult shearwaters are vulnerable to artificial lighting during the breeding cycle, when returning to and leaving the nesting colony to maintain nesting sites or forage. Foraging wedge tailed shearwaters may be attracted to sources of light emissions to feed on fish drawn to the light; however, the species feeds predominantly during the day, in association with pelagic predators (Catry et al., 2009,). The majority of foraging trips are short, with single day foraging trips significantly more common than any other length trip, with birds returning to nesting/roosting sites between trips. The numbers of wedge-tailed shearwaters present in the Operational Area at night is expected to be low given the primarily diurnal foraging behaviour, and behavioural impacts to the species are considered to be highly unlikely. Given the foraging behaviours of roosting shearwaters, artificial light from the Operational Area, is not predicted to disrupt critical breeding behaviours within important nesting habitat or displace seabirds from nesting habitat.

Fledgling shearwaters are predominantly impacted by onshore lighting sources, which can override sea finding cues and attract fledglings further inland, preventing them from reaching the sea (Mitkus et al., 2018). Artificial light can also impact important behaviour of nesting adults (e.g. adult nest attendance, maintaining nest sites) or confuse shearwater species, resulting in injury or mortality as a result of birds colliding with structures (Cianchetti-Benedetti et al., 2018). Given the offshore location of the Operational Area, approximately 7kms from the nearest roosting site, impacts to the survivability of fledglings from artificial lighting are not expected.

In a study of offshore oil platforms in the North Sea, Poot et al. (2008) observed that migrating seabirds can be attracted to the lights and flares of offshore oil platforms, particularly on cloudy nights and in between the hours of midnight and dawn. Migratory shorebirds travelling the East Asian-Australasian Flyway may transit through the Operational Area in the vicinity of the NY FPSO and vessels en-route to staging areas, before moving onto the mainland south in the spring or Indonesia in the north in the autumn. It is possible that many of the birds on migration may also take advantage of ships and offshore facilities in the area to rest. Migrating birds in the region are at, or near, the end of their migration (or staging area), and if attracted will not be facing long-distance journeys directly upon leaving the facility. Although the migratory diversion is not expected to impact negatively on the birds, if there are identified maintenance, safety and health risks associated with guano from the birds it may be necessary to deter them from resting on NY FPSO. No lasting effect is anticipated from seabirds attracted to the light, and hence, diverted from their migratory pathway.

Marine Turtles

The Operational Area is within the internesting BIA for the flatback, green, hawksbill and loggerhead turtle and within 20 km of nesting BIAs for green, hawksbill and loggerhead turtle species, signifying the presence of turtles within the region and its biological significance. Further the Operational Area overlaps or is adjacent to habitat critical to the survival of the green, loggerhead, leatherback, and the hawksbill turtle species. The relevant Recovery Plan considers light pollution a threat to hatchling orientation, survivability/predation, and sea finding behaviours and can inhibit nesting from mature females.

Hatchlings

The nearest potential nesting sites in relation to the NY FPSO are the Muiron Islands (15 km south east), North West Cape (20.8 km southwest) and the Ningaloo coast (19 km south). Lighting and the tip of the flare tower onboard the NY FPSO may be visible from these areas. Hatchlings generally show a preference of moving towards horizons which are low and bright, and moving away from horizons that are dark and elevated, using these cues to navigate towards

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the shoreline (Limpus and Kamrowski, 2013). Once hatchlings are in the water, navigation and direction is expected to be influenced by wave motion, currents and earth magnetic field, rather than artificial light. Additionally, the nature of the light emitted from the NY FPSO and vessels, offshore direction, and distance the potential for hatchling turtles to become disoriented by artificial lighting is considered not credible.

Adults

Artificial lighting may affect the location where turtles nest, the success of nest construction, whether nesting is abandoned, and even the seaward return of adults (Salmon et al., 1995a, 1995b; Salmon and Witherington, 1995).

The interesting period is the duration between each successive clutch during that season. The females remain close to rookeries or beaches, and therefore are designated and defined as buffer zones immediately seaward from nesting beaches. Individuals present in the Operational Area may migrate and forage (during the interesting period). Marine turtles do not use light cues to guide these behaviours (PENV, 2020). Further, PENV (2000) found no evidence, published or anecdotal, to suggest that foraging or migrating turtles are impacted by light from offshore facilities and vessels. As such, light emissions from the facility and vessels are unlikely to result in displacement of, or behavioural changes to individuals in these life stages (PENV, 2020).

For nesting females, the presence of lighting amongst other factors is a key factor site selection when laying clutches (Windle et al., 2018), preferring more dimly lit areas. Given the distance (approximately 40 km) between the NY FPSO to nesting beaches, it is considered highly unlikely artificial lighting from the flare-tip or the NY FPSO deck lighting would result in the behavioural displacement of nesting females at these locations.

Light emissions generated by IMMR activities within the Operational Area, may be closer to nesting beaches (~17 km). These activities will be short-term and temporary, and likely to be from a single vessel during most standard IMMR campaigns. Given the distance to potential nesting locations, vessel lighting intensity and duration of lighting, it is considered unlikely the IMMR activities will have any impact to turtle species.

Fish

Lighting from the presence of the facility or a vessel may result in the localised aggregation of fish. These aggregations of fish are considered localised and temporary and any long-term changes to fish species composition or abundance is considered highly unlikely. This localised increase in fish extends to those comprising the whale shark's diet. However, given that a large proportion of the diet comprises krill and other planktonic larvae, it is considered unlikely that a light source would lead to a significant increase in whale shark abundance in the vicinity of the facility or vessels. Similarly, any localised impacts to marine fish are not expected to impact on any commercial fishers in the area. No significant cumulative impacts over the life of the Petroleum Activities Program or in relation to other operations and activities in the region (**Section 6.2.1**) are expected, considering the controls implemented for the Petroleum Activities Program.

Values and Sensitivities

The Ningaloo WHA hosts a range of marine fauna, which are an environmental value of the WHA. Fauna in the Ningaloo WHA may be impacted by light emissions; refer to the section above for an assessment of the potential impacts of artificial light on marine fauna. Given the distance offshore of the NY FPSO, light from the flare is unlikely to be directly visible, and hence is not considered to result in any impact to the aesthetic values of the Ningaloo WHA.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁴⁵	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
Implement a Seabird Management Plan.	F: Yes. The management plan is an internal Woodside process developed to manage the impacts of artificial light emissions. CS: Minimal cost/sacrifice.	Implementing a Seabird Management Plan will enable standardised data collection to better understand seabird interactions with project vessels, provide guidance on seabird management to enable the best outcomes for grounded birds and facilitate escalation and adoption of management actions within 24 hrs, preferably before next nightfall, should triggers be met.	Control based on legislative requirement – must be adopted and good practice and without significant cost.	Yes C 8.1
Professional Judgement – Eliminate				
No external lighting during Petroleum Activities Program.	F: No. Light management is consistent with that required to provide a safe working environment on-board the FPSO and support vessels. CS :Not considered – control not feasible	Not considered, control not feasible.	Not considered, control not feasible.	No
Do not flare.	F: No. While flaring is not a routine activity, the ability to flare is a safety critical requirement onboard the NY FPSO. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No

⁴⁵ Qualitative measure.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS) ⁴⁵	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Professional Judgement – Substitute				
Substitute external lighting with light sources designed to minimise impacts to seabirds, shorebirds and marine turtles: <ul style="list-style-type: none"> • Use flashing/intermittent lights instead of fixed beam. • Use motion sensors to turn lights on only when needed. • Use luminaires with spectral content appropriate for the species present. • Avoid high intensity light of any colour. 	F: Yes. Replacement of external lighting with lighting appropriate for turtles and seabirds is technically feasible, although is not considered to be practicable. CS: Significant cost sacrifice. The retrofitting of all external lighting on the FPSO, etc, would result in considerable cost and time expenditure. Considerable logistical effort to source sufficient inventory of the range of light types onboard the FPSO.	Given the potential impacts to turtles, nesting seabirds and fledglings during this activity are insignificant, implementation of this control would not result in a reduction in consequence. Potential for minor reduction in impact to individual foraging seabirds that may transit the Operational Area, as outlined in the NLPG.	Grossly disproportionate. Implementation of the control requires considerable cost sacrifice for minimal environmental benefit. The cost/sacrifice outweighs the benefit gained.	No
Professional Judgement – Engineered Solution				
None identified.				
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the potential impacts and risks from routine light emissions from the NY FPSO and vessels to be ALARP. As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.</p>				

Demonstration of Acceptability
<p>Acceptability Statement:</p> <p>The impact assessment has determined that, in its current state, routine light emissions from the Petroleum Activities Program represent the potential for slight and localised impacts, with no lasting impact to fauna. Further opportunities to reduce the impacts have been investigated above. The potential impacts are consistent with good oil-field practice/industry best practice and are considered broadly acceptable in its current state. Therefore, Woodside considers standard operations appropriate to manage the impacts of light emissions to a level that is broadly acceptable.</p>

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 8 Undertake the Petroleum Activities Program in a manner that will limit impacts from light to Slight (E ⁴⁶).	C 8.1 Implement a Seabird Management Plan.	PS8.1 Implementation of the Seabird Management Plan including: <ul style="list-style-type: none"> • Minimise potential for light attraction. • Standardise and maintain record keeping and reporting of seabird interactions. • Provide procedures on seabird intervention, care and management. • Follow regulatory reporting requirements of seabird (unintentional death of or injury to seabirds that constitute MNES). 	MC 8.1.1 Records demonstrate Seabird Management Plan implemented.

⁴⁶ Defined as 'slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attribute' as in **Section 2.6.3, Table 2-3**.

6.7 Unplanned Activities (Accidents, Incidents, Emergency Situations)

6.7.1 Unplanned Discharge: Release of Hydrocarbons or Chemicals During Transfer, Storage and Use

Context														
Operational Details – Section 3.6 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10				Physical Environment – Section 4.4 Biological Environment – Section 4.5				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Accidental discharge of hydrocarbons to the environment during bunkering/refuelling.			✓			✓		A	D	2	M	LCS GP PJ	Broadly Acceptable	EPO ⁹
Accidental discharge of chemicals to the marine environment from storage, use or transfer.			✓			✓		A	E	2	M			
Description of Source of Risk														
<p>A range of chemicals and hydrocarbons are routinely transferred to, and stored on, the NY FPSO and support vessels. Indicative inventories onboard the NY FPSO are provided in Section 3.9. The quantity of stored chemicals is generally limited to the volumes practically required to meet operational needs of the NY FPSO or support vessels. Operational chemicals used during the Petroleum Activities Program are assessed and selected in accordance with the process described in Section 3.9.3.</p> <p>Marine Diesel Transfer</p> <p>Marine diesel fuel is transferred to the NY FPSO by bunkering. This mostly occurs during daylight hours but may also occur overnight if required. Two key scenarios for the loss of containment of marine diesel during bunkering operations were identified:</p> <ul style="list-style-type: none"> • Partial or total failure of a bulk transfer hose or fittings during bunkering, due to operational stress or other integrity issues, could spill marine diesel to the deck and/or into the marine environment. This would be in the order of less than 500 L, based on the likely volume of a bulk transfer hose (assuming a failure of the dry break and complete loss of hose volume). • Partial or total failure of a bulk transfer hose or fittings during bunkering or refuelling, combined with a failure in Procedure to shutoff fuel pumps, for a period of up to 15 minutes, results in approximately 38 m³ marine diesel loss to the deck and/or into the marine environment. <p>Marine diesel is typically not transferred to support vessels in the Operational Area; support vessels refuel in port (i.e. beyond the scope of this EP).</p> <p>Operational and Facility Maintenance Chemicals</p> <p><u>Transfer</u></p> <p>Operational process chemicals, non-process and facility maintenance chemicals are transferred to the NY FPSO in containers. Spills may occur during transfer of chemicals to the NY FPSO. Given the small volumes being handled, the credible release volumes are relatively small (e.g. largest typical chemical transfer via container is approximately 3.8 m³).</p>														

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Storage and Use

Chemicals are used for a variety of purposes (refer to **Section 3.9.2**). Spills of chemicals (including non-process hydrocarbons such as marine diesel) can originate from hydrocarbons/chemicals or equipment on the NY FPSO, support vessel decks or subsea (refer to **Section 6.6.4** for an assessment of the impacts of planned chemical discharges).

Operational process chemicals on the NY facility which are kept in larger quantities are stored in dedicated vessels which have similar controls as those related to mitigating hydrocarbon spills (e.g. dedicated tanks, permanent piping to the process, isolatable by valves, etc). The process chemical with the largest inventory on the NY FPSO is methanol (50 m³). Methanol is considered to be PLONOR and has an OCNS ranking of E. Operational non-process chemicals and facility maintenance chemicals on the NY facility and support vessels are typically held in low quantities (usually less than 50 L). The NY FPSO has dedicated chemical storage areas onboard, which are sufficiently bunded to retain the loss of the contents of an entire container stored within.

Chemical storage areas are typically set up in cabinets or bunded storage areas to contain any releases to deck from transportable containers (e.g. IBCs, barrels, drums, pails, etc). Releases from equipment are predominantly from the failure of hydraulic hoses or minor leaks from process components, or spills during refuelling of equipment, which can either be located within bunded/drained areas or outside of bunded/drained areas (e.g. over grating on cranes).

Support vessels undertaking IMMR activities may store quantities of chemicals for subsea use. Subsea chemical use is described in **Section 3.10.5**; they are subject to the chemical selection process outlined in **Section 3.9**. Accidental releases of small quantities of subsea chemicals may occur (e.g. deck spills). Operational experience indicates potential volumes of such spills is small (<20 L). ROV hydraulic fluid is supplied through hoses containing approximately 20 L of fluid. Hydraulic lines to the ROV arms and other tooling may become caught, resulting in minor leaks to the marine environment. Small volume hydraulic leaks may occur from equipment operating via hydraulic controls subsea (subsea control fluid). These include the diamond wire cutter, bolt tensioning equipment, ROV tooling, etc.

The primary diesel storage location onboard the NY FPSO and support vessels is dedicated bunker tanks within vessel hulls. Further quantities of marine diesel are stored topsides in the diesel oil settling tanks, service and storage tanks, and fuel tanks for equipment (e.g. generators) (see **Table 3-7**). Credible spills of marine diesel during use are typically small (<50 L) compared to potential releases during bunkering. Mechanisms are available to capture diesel from process/piping associated with bunkering and fuel transfers, which can be routed to the drainage system, where the spill can be contained.

The assessment of the potential consequences associated with much larger diesel spills are presented in MEE-03 (topside loss of containment, **Section 6.8.4**) and MEE-07 (loss of marine vessel separation, **Section 6.8.9**). Further detail on consequences specific to a spill of marine diesel from a bunkering loss are provided below.

Consequence Assessment

Marine Diesel

The biological consequences of a small volume spill on identified open water sensitive receptors relate to the potential for slight consequences to megafauna, plankton and fish populations (surface and water column biota). Impacts to plankton may include acute toxicity resulting in mortality of planktonic organisms. Given the rapid turnover of plankton communities, these impacts will be short-lived (hours to days). Impacts to fish are expected to be of no lasting effect, as fish species are mobile and expected to avoid the area affected by a marine diesel spill from a bunkering incident. Impacts to larger fauna such as cetaceans and marine turtles are expected to be light fouling, potentially resulting in irritation of sensitive membranes such as the eyes, mouth and digestive system (Helm et al., 2015). Mortality of larger fauna is not expected to occur.

No impacts to Canyons Linking the Cuvier Abyssal Plain and the Cape Range Peninsula or Continental Slope Demersal Fish Communities KEFs are expected, as although the Operational Area overlaps these KEFs the features of these KEFs are mostly benthic and therefore will not be affected by a small surface release.

Given the lack of commercial fishing in the Operational Area, no impacts to commercial fishers (e.g. displacement of fishing effort, loss of catch due to taint, etc) are expected to occur. On the basis of the potential impacts described above, the consequence of a marine diesel spill from a bunkering incident are considered minor and short-term.

Chemicals – Operational and Maintenance

Woodside’s preference for low toxicity operational chemicals planned for discharge is integrated into Woodside’s chemical selection process (**Section 3.9**). The chemical selection process describes the steps required to approve a chemical for use and discharge which is not low toxicity, including detailed assessment using chemical and environmental data, and an ALARP justification.

The chemical stored in the largest volume on the NY FPSO is methanol, which is considered PLONOR and is OCNS rated E, and is miscible in water. TEG (triethylene glycol) is miscible in water and is considered PLONOR (**Section 3.10.5**). A maximum credible spill of methanol (or other operational chemical) is expected to mix with the offshore receiving environment, with no lasting environmental impact.

Accidental releases of chemicals are expected to decrease the water quality in the immediate area of the release (i.e. surface waters at the release location); however, the consequence is expected to be temporary and localised due to water depths, the open ocean mixing environment and relatively low credible release volumes. Depending on the

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chemical released, the toxicity and/or potential to bioaccumulate may potentially result in impacts to sediment quality, pelagic fish or other marine species in the vicinity of the discharge.

The potential consequence from a decrease in water quality could include mortality of plankton. Given the rapid turnover of plankton communities and nature and scale of the credible releases, these impacts will be short-lived (hours to days). Impacts to fish from a decrease in water quality are not expected to have lasting effects, as fish species are mobile and expected to avoid the area affected by an accidental chemical spill. Impacts to air-breathing fauna such as cetaceans, birds and marine turtles, are expected to be restricted to irritation of sensitive membranes such as the eyes, mouth and digestive system.

Therefore, the risk of an accidental chemical release is unlikely to result in consequences greater than a minor and short-term impact on species or minor impact to water quality.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁴⁷	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
Contract vessels compliant with Marine Order 91 (Marine pollution prevention – oil) for safe vessel operations. Compliance with Marine Order 91 reduces the risk of accidental hydrocarbon release during transfer.	F: Yes CS: Minimal cost. Standard practice.	Marine Order 91 is required under Australian regulations; implementation is standard practice for commercial vessels as applicable to vessel size, type and class.	Control based on legislative requirement – must be adopted.	Yes C 5.1
Good Practice				
Chemical Selection and Assessment Environment Guideline <ul style="list-style-type: none"> • Where Gold/Silver/E/D OCNS rating (and no OCNS substitution or product warning), chemicals are selected – no further control required. • If chemicals with a different OCNS rating, sub warning or non-OCNS rated chemicals are required chemicals are assessed in accordance with the guideline prior to use. 	F: Yes. Woodside routinely implements a chemical selection process based on OCNS at the NY FPSO. CS: Minimal. The OCNS is widely used throughout the industry and chemical suppliers are aware of the requirements of the scheme.	Selection and assessment of chemicals in accordance with the Woodside process, reduces environmental impacts associated with planned chemical discharge.	Benefits outweigh cost sacrifice.	Yes C 4.1
Diesel bunkering hoses: <ul style="list-style-type: none"> • have dry break couplings • be pressure rated at purchase to reduce the risk of accidental hydrocarbon release during bunkering.	F: Yes CS: Minimal cost. Standard practice.	Reduces the likelihood of a hose failure.	Benefits outweigh cost sacrifice.	Yes C 9.1

⁴⁷ Qualitative measure.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁴⁷	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Implementation of bunkering procedures to reduce the risk of a hydrocarbon release as a result of a bunkering incident.	F: Yes CS: Minimal cost. Standard practice.	Implements a procedure to outline the methods and requirements for undertaking safe bunkering. This reduces the likelihood of a bunkering incident.	Benefits outweigh cost sacrifice.	Yes C 9.2
Chemicals are be stored safely to prevent release to the marine environment.	F: Yes CS: Minimal cost. Standard practice.	Reduces risk of unplanned chemical release.	Benefits outweigh cost sacrifice.	Yes C 9.3
Incident reports are raised for unplanned releases within event reporting system.	F: Yes CS: Minimal cost. Standard practice.	Good practice that operators identify, report and learn from unplanned release events. Supports compliance with regulatory reporting requirements.	Control based on Woodside standard and regulatory requirements.	Yes C 9.4
Professional Judgement – Elimination				
None identified.				
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
NY FPSO drainage system in place to contain and dispose leaks and spills of hazardous liquids, to avoid harm to the environment.	F: Yes. The NY FPSO has been designed with an integral drains system that can be used to contain liquid spills in hazardous and non-hazardous areas. CS: Minimal. Inherent feature of NY FPSO design.	The drains system can be used to contain a spill before it reaches the environment.	Benefit outweighs cost sacrifice.	Yes C 9.5
ALARP Statement: On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts of accidental spills of hydrocarbons or chemicals from bunkering/refuelling, storage, use and transfer. As no reasonable additional/alternative controls were identified that would further reduce the consequences and risks without grossly disproportionate sacrifice, the risks are considered ALARP.				

Demonstration of Acceptability

Acceptability Statement:

The consequence assessment has determined that, given the adopted controls, accidental spills from chemical and marine diesel bunkering/refuelling, storage, transfer and use represent a moderate risk rating that is unlikely to result in a consequence greater than minor, with impacts limited to the short-term without any effect on ecosystem function. Further opportunities to reduce the risks have been investigated above. The adopted controls are considered good oil-field practice/industry best practice and meet requirements of Australian Marine Orders. The potential risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the risks of accidental releases of chemicals and hydrocarbons from bunkering/refuelling, storage, transfer and use to a level that is broadly acceptable.

EPOs, EPSs and MC

<i>Environmental Performance Outcomes</i>	<i>Controls</i>	<i>Environmental Performance Standards</i>	<i>Measurement Criteria</i>
EPO 9 Environmental risk posed by hydrocarbon or chemical spills limited to Moderate ⁴⁸ during bunkering, refuelling and chemical transfer, storage and use during the Petroleum Activities Program.	Refer to C 5.1 Section 6.6.5.	Refer to PS 5.1 Section 6.6.5..	Refer to MC 5.1 Section 6.6.5.).
	Refer to C 4.1. Section 6.6.4.	Refer to PS 4.1 Section 6.6.4.	Refer to MC 4.1.1 Section 6.6.4.
	C 9.1 Diesel bunkering hoses to: <ul style="list-style-type: none"> • have dry break couplings be pressure rated at purchase. 	PS 9.1.1 All diesel transfer hoses to have dry break couplings and pressure rating suitable for intended use.	MC 9.1.1 Records demonstrate diesel transfer hoses are fitted with dry break couplings and are pressure rated.
	C 9.2 Implementation of bunkering procedures.	PS 9.2.1 Implement NY Fuel Bunkering Procedure. Key requirements include: <ul style="list-style-type: none"> • Bunkering will commence during daylight hours only and proceed only in acceptable sea state conditions. • Communications between the supply vessel and facility bunker station will be maintained during bunkering. • Hoses, couplings and sea surface will be visually monitored during refuelling. • Tank levels will be monitored continuously on the facility. • Spill clean-up equipment will be available in proximity to the bunker station. • Bunkering hose inventory will be drained to the 	MC 9.2.1 Records demonstrate bunkering undertaken in accordance with facility and contractor bunkering procedures.

⁴⁸ As defined in **Section 2.6.3.**

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EPOs, EPs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
		supply vessel before disconnection.	
		PS 9.2.2 Vessels will have their own bunkering plans, checklists and Ship Oil Pollution Emergency Plan (SOPEP) depending on the specifications of both the supplying and receiving vessel.	MC 9.2.2 Marine verification records demonstrate vessel-specific bunkering plans available and applied during bunkering operations.
	C 9.3 Chemicals and hydrocarbons will be stored safely to prevent the release to the marine environment.	PS 9.3 Chemical storage areas for transportable containers on the NY FPSO will have adequate containment in place to contain an accidental chemical spill.	MC 9.3.1 NY FPSO chemical storage locations provided with adequate bunding/containment.
	C 9.4 Incident reports are raised for unplanned releases within event reporting system.	PS 9.4 Incident reports raised for unplanned releases. Recordable Incidents notified for unplanned liquid releases to sea, of: <ul style="list-style-type: none"> • 80 L or more of hydrocarbons, or • 1000 L or more of environmentally hazardous chemical⁴⁹ in any 48-hour period.	MC 9.4.1 Records demonstrate incident reports raised for unplanned releases, and applicable Recordable Incident notifications completed.
	C 9.5 NY FPSO drainage system in place to contain and dispose leaks and spills of hazardous liquids.	PS 9.5 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related damage to SCEs for: <ul style="list-style-type: none"> • F22 – Hazardous Open Drains, to: <ul style="list-style-type: none"> - prevent escalation of an incident following loss of containment, fire and/or explosion by removing or containing flammable liquid from hazardous areas; and - support appropriate containment and disposal of environmentally hazardous liquids to avoid damage. 	Refer to MC 1.5.1 Section 6.6.1.

⁴⁹ Chemicals that are not on the CEFAS OCNS Ranked List of Notified Chemicals or CEFAS OCNS listed chemicals which have a CEFAS OCNS substitution warning, a OCNS product warning or are OCNS Hazard Quotient white, blue, orange, purple, A, B or C.

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6.7.2 Unplanned Discharges: Hazardous and Non-hazardous Waste Management

Context														
Operational Details – Section 3.6				Physical Environment – Section 4.4 Biological Environment – Section 4.5				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Incorrect disposal or accidental discharge of non-hazardous and hazardous waste to the marine environment.		✓	✓			✓		A	E	2	M	LCS GP	Broadly Acceptable	EPO 10
Description of Source of Impact														
<p>Non-hazardous and Hazardous Waste</p> <p>Normal operations on the NY FPSO and vessels result in a variety of hazardous and non-hazardous wastes. However, these materials could potentially impact the marine environment if incorrectly disposed or discharged in significant quantities.</p> <p>Non-hazardous wastes include domestic and industrial wastes, such as aluminium cans, bottles, paper and cardboard and scrap steel. Hazardous wastes include recovered solvents, excess or spent chemicals, oil-contaminated materials (e.g. sorbents, filters and rags), batteries and used lubricating oils (see Section 6.7.2) for unplanned chemical releases). Hydrocarbon production may result in naturally occurring radioactive material (NORMs) being deposited in scale within hydrocarbon-containing infrastructure (e.g. flowlines), or contained within produced sand. Monitoring to date has not indicated the presence of NORMs hydrocarbon-containing infrastructure or produced sands. Although no NORMS have been identified to date, if NORMS are detected in the later stages of operations, NORMS will be managed in accordance with the relevant requirements, so that there are no impacts on the environment.</p> <p>Sand, sludges and wastes may also be periodically generated during well clean-up operations, de-sanding and vessel maintenance. Waste materials generated on the NY FPSO which are not suitable for discharge to the environment, including hazardous wastes, are transported to shore for disposal or recycling by a licensed waste contractor.</p>														
Impact Assessment														
<p>Non-hazardous and Hazardous Waste</p> <p>The potential impacts of liquid and solid wastes accidentally discharged to the marine environment include direct pollution and contamination of the environment, potentially resulting in decreased water or sediment quality. Secondary impacts due to potential contact with individual marine fauna includes entanglement or ingestion, which may lead to injury and/or death. The temporary or permanent loss of hazardous or non-hazardous waste materials into the marine environment is not likely to have a significant environmental impact, based on the location of the Operational Area, the types, size and frequency of wastes generated, and the species present.</p>														

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁵⁰	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
Contract vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> Marine Order 94 (Marine pollution prevention – packaged harmful substances) 2014; Marine Order 95 (Pollution prevention – garbage). 	F: Yes CS: Minimal cost. Standard practice.	Implementation of Marine Orders 94 and 95 reduces the likelihood of a harmful substance being released to the environment. Implementation is standard practice for commercial vessels as applicable to vessel size, type and class.	Controls based on legislative requirements – must be adopted.	Yes C 10.1
Management and handling of NORMs in accordance with Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) guidelines.	F: Yes CS: Minimal cost. Standard practice.	Australian Regulations require NORMs to be managed for appropriate classification, handling and disposal.	Controls based on legislative requirements – must be adopted.	Yes C 10.2
Good Practice				
Implementation of Waste Management Plan for Offshore Facilities.	F: Yes CS: Minimal cost. Standard practice.	Reduces the likelihood of a release of waste to the environment by providing guidance on storage, handling and transport of wastes.	Benefit outweighs cost sacrifice.	Yes C 10.3
If safe and practicable to do so; vessel ROV or crane used to attempt recovery material ⁵¹ environmentally hazardous or non-hazardous solid object/waste container lost overboard.	F: Yes CS: Minimal cost. Standard practice.	Potentially reduces consequence by recovering object/waste container from the environment.	Benefit outweighs cost sacrifice.	Yes C 10.4
Incident reports are raised for unplanned releases within event reporting system.	F: Yes CS: Minimal cost. Standard practice.	Good practice that operators identify, report and learn from unplanned release events. Supports compliance with regulatory reporting requirements.	Control based on Woodside standard and regulatory requirements.	Refer to C 9.4. Section 6.6.4.
Professional Judgement –Elimination				
None identified.				

⁵⁰ Qualitative measure.

⁵¹ For the purposes of this control/performance standard “material” is defined as unplanned releases of environmentally hazardous or non-hazardous solid object/waste events with an environmental consequence of >F, localised impact not significant to environmental receptor or localised impact not significant to area/item of cultural significance as defined in **Section 2.6.3.**

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁵⁰	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
None identified.				
ALARP Statement:				
On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of accidental discharge of non-hazardous and hazardous wastes. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.				

Demonstration of Acceptability
Acceptability Statement:
The consequence assessment has determined that, given the adopted controls, the accidental discharge of non-hazardous waste and hazardous waste represent a moderate-risk rating, unlikely to result in a consequence greater than minor, short-term impacts to surrounding water quality, habitats or fauna. These potential impacts are considered to have no lasting effect and are not considered to be significant. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are considered good oil-field practice/industry best practice and meet requirements of Australian Marine Orders and ARPANSA guidelines. The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of accidental discharge of non-hazardous and hazardous waste to a level that is broadly acceptable.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 10 Environmental risk from hazardous and non-hazardous waste management limited to Moderate ⁵² during the Petroleum Activities Program.	C 10.1 Contract vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> Marine Order 94 (Marine pollution prevention – packaged harmful substances) 2014 Marine Order 95 (Pollution prevention – garbage). 	PS 10.1 Vessels contracted whose practices comply with Marine Orders as applicable to vessel size, type and class.	MC 10.1.1 Marine verification records demonstrate compliance with standard maritime safety procedures (Marine Orders 94 and 95).

⁵² As defined in Section 2.6.3.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 10.2 Management of NORMs in accordance with Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) guidelines.</p>	<p>PS 10.2 In the event that waste materials are routinely identified as NORM (above exempted levels) disposal will be coordinated in line Management of NORM guidelines (Radiation Health and Safety Advisory Council 2005), and State waste management requirements for appropriate waste disposal.</p>	<p>MC 10.2.1 Waste management records demonstrate appropriate handling and disposal of NORM classified material.</p>
	<p>C 10.3 Implementation of Waste Management Plan for Offshore Facilities.</p>	<p>PS 10.3 Implementation of Waste Management Plan for Offshore Facilities, including waste segregation and storage:</p> <ul style="list-style-type: none"> • Records of all waste to be disposed, treated or recycled shall be maintained. They shall include (though not limited to) quantity of waste, waste type and disposal/recycle location. • Waste streams shall be appropriately handled and managed according to their hazard and recyclability class. • All non-putrescible waste (excludes all food, greywater or sewage waste) shall be transported and disposed of onshore. 	<p>MC 10.3.1 Records demonstrate implementation of Waste Management Plan for Offshore Facilities.</p>

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 10.4</p> <p>If safe and practicable to do so; vessel ROV or crane used to attempt recovery of material environmentally hazardous or non-hazardous solid object/waste container lost overboard.</p>	<p>PS 10.4</p> <p>Material⁵³ environmentally hazardous or non-hazardous solid waste object/container dropped to the marine environment will be recovered where safe and practicable to do so.</p> <p>Where safe and practicable for this activity will consider:</p> <ul style="list-style-type: none"> • risk to personnel to retrieve object • whether the location of the object is in recoverable water depths • object's proximity to subsea infrastructure • ability to recover the object (i.e. nature of object, lifting equipment or, ROV availability and suitable weather). 	<p>MC 10.4.1</p> <p>Records detail the recovery attempt consideration and status of material environmentally hazardous or non-hazardous solid waste object/container lost to the marine environment.</p>
	<p>Refer to C 9.4</p> <p>Section 6.7.1.</p>	<p>Refer to PS 9.4</p> <p>Section 6.7.1.</p>	<p>Refer to MC 9.4.1</p> <p>Section 6.7.1.</p>

⁵³ For the purposes of this control/performance standard "material" is defined as unplanned releases of environmentally hazardous or non-hazardous solid object/waste events with an environmental consequence of >F.

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6.7.3 Physical Presence: Interaction with Marine Fauna

Context														
Support Vessel Operations – Section 3.7				Protected Species – Section 4.6				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Physical presence of vessels resulting in collision with marine fauna.						✓		A	E	1	L	LCS	Broadly Acceptable	EPO 11
Description of Source of Impact														
<p>The vessels operating in the Operational Area may present a potential hazard to cetaceans and other protected marine fauna, such as whale sharks and marine reptiles. Vessel movements can result in collisions between the vessel (hull and propellers) and marine fauna, potentially resulting in superficial injury, serious injury that may affect life functions (e.g. movement and reproduction), and mortality.</p> <p>The factors that contribute to the frequency and severity of impacts due to collisions include vessel type, vessel operation (specific activity, speed), physical environment (e.g. water depth) and the type of animal potentially present and their behaviours.</p>														
Consequence Assessment														
<p>The likelihood of vessel–whale collision being lethal is influenced by vessel speed; the greater the speed at impact, the greater the risk of mortality (Jensen and Silber, 2004; List et al., 2001). Vanderlande and Taggart (2007) found that the chance of lethal injury to a large whale as a result of a vessel strike increases from about 20% at 8.6 knots to 80% at 15 knots. According to the data of Vanderlin and Taggart (2007), it is estimated that the risk is less than 10% at a speed of 4 knots. Vessel–whale collisions at this speed are uncommon and, based on reported data contained in the US National Ocean and Atmospheric Administration database, there only two known instances of collisions when the vessel was travelling at less than 6 knots. Both of these were from whale watching vessels that were deliberately placed among whales (Jensen and Silber, 2004).</p> <p>Vessels undertaking the Petroleum Activities Program within the Operational Area typically travel less than 8 knots; much of the time vessels are holding station. Therefore, the risk of a vessel collision with protected species resulting in death is inherently low.</p> <p>The Operational Area overlaps the outer portion of the humpback whale migration BIA (Section 4.6.3); humpback whales are seasonally abundant within this corridor during their annual migrations. Aerial surveys undertaken by Woodside indicate that the majority of humpback whales migrating in the region typically occur east of the Operational Area; the majority of the whales occurred in depths less than 500 m, with the greatest density of whales concentrated in water depths of 200 to 300 m (RPS Environment and Planning, 2010a). Humpback whales have also been observed in the Operational Area during their seasonal migration by personnel onboard the NY FPSO. As such, humpback whales occur in the Operational Area during their seasonal migration period. However, harmful interactions between vessels and humpback whales in the Operational Area are considered highly unlikely due to the slow speed of vessels in the Operational Area.</p> <p>A pygmy blue whale migration BIA also overlaps the Operational Area. Analysis of underwater noise logger data indicated pygmy blue whales are present in waters off North West Cape between October to December (northbound</p>														

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migration) and April to August (southbound migration) (McCauley and Jenner, 2010). Satellite tagging studies have shown pygmy blue whales migrating along the Western Australian coast near the Operational Area in water depths between 200 m and 1000 m, which includes the depth range of the Operational Area (approximately 340 to 849 m). Pygmy blue whales were not recorded in a series of whale monitoring flights between July and September (RPS Environment and Planning, 2010a), although these flights were intended to record humpback whales and did not extensively sample deeper waters preferred by pygmy blue whales. Observations of whales by personnel onboard the NY FPSO have not confirmed the presence of pygmy blue whales in the Operational Area.

Given the seasonality of humpback whales in the Operational Area, and seasonality and low density of pygmy blue whales recorded in the Operational Area, harmful interactions between vessels and whales during the Petroleum Activities Program are considered unlikely. Given the typical speeds of vessels within the Operational Area, any collision between vessels and whales is not expected to result in mortality.

Whale sharks are at risk from vessel strikes when feeding at the surface, or in shallow waters where there is limited option to dive. Whale sharks may traverse offshore waters, including the Operational Area, during their migrations to and from Ningaloo Reef, and a BIA for foraging whale sharks lies approximately 6 km from the Operational Area. However, it is not expected whale sharks would occur in large numbers within the Operational Area, given there is no main aggregation area within the vicinity of the Operational Area, and their presence would be transitory and of a short duration. There are no constraints preventing whale sharks from moving away from vessels (e.g. shallow water or shorelines).

With consideration of the absence of potential nesting or foraging habitat for turtles (i.e. no emergent islands, reef habitat or shallow shoals) and the water depth, it is considered that the Operational Area is unlikely to represent important habitat for marine turtles. No marine turtle BIAs overlap the Operational Area. The outer portion of a critical nesting habitat for flatback turtles identified in the Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia, 2017) overlaps the Operational Area; however, marine turtles (including flatback turtles) are considered unlikely to be present due to the distance from shore and water depth (approximately 340 to 849 m). Individual turtles have been infrequently observed by personnel onboard the NY FPSO, but turtles are not regularly seen. Individual turtles may infrequently transit the area. It is acknowledged that there are significant nesting sites along the mainland coast and islands of the region.

The typical response from turtles on the surface to the presence of vessels is to dive (a potential “startle” response), which decreases the risk of collisions (Hazel et al., 2007). As with cetaceans, the risk of collisions between turtles and vessels increases with vessel speed (Hazel et al., 2007). Given the low speeds of vessels undertaking the Petroleum Activities Program, along with the expected low numbers of turtles within the Operational Area, interactions between vessels and turtles are considered highly unlikely. It is unlikely that vessel movement associated with the Petroleum Activities Program will have a significant impact on marine fauna populations, given:

- the low presence of transiting individuals
- avoidance behaviour commonly displayed by whales, whale sharks and turtles
- low operating speed of the activity support vessels (generally less than 8 knots or stationery, unless operating in an emergency).

Activities are considered unlikely to result in a consequence greater than minor short-term disruption to individuals or a small proportion of the population, and no impact on critical habitat or fauna activity.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁵⁴	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Legislation, Codes and Standards				
EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans will be implemented to reduce the likelihood of collision with marine fauna.	F: Yes CS: Minimal cost. Standard practice.	Reductions in speed around protected fauna reduce the likelihood of collision.	Controls based on legislative requirements – must be adopted.	Yes Refer to C 3.1 Section 6.6.3.

⁵⁴ Qualitative measure.

Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)⁵⁴	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
Good Practice				
Have a dedicated experienced and trained Marine Fauna Observer (MFO) onboard vessels to undertake marine fauna observations.	F: Yes, however additional cost for dedicated and experienced MFO to be present during IMMR. CS: Moderate, requires the provision of a dedicated experienced MFO to undertake Marine Fauna Observations.	Use of an MFO may detect fauna in the area, however control provides limited benefit when managing impacts associated with vessel noise alone.	Given limited benefit associated with the management of vessel noise impacts and costs associated with control implementation an experienced MFO is not considered necessary.	No
Professional Judgement – Eliminate				
Do not use vessels.	F: No. No alternative to the use of vessels during the Petroleum Activities Program was identified. Given that vessels must be used to undertake the Petroleum Activities Program. There is no feasible means to eliminate the source of risk. CS: Not assessed, control not feasible	Not assessed, control not feasible.	Not assessed, control not feasible.	No
Professional Judgement – Substitute				
None identified.				
Professional Judgement – Engineered Solution				
None identified.				
ALARP Statement: On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the risk of vessel collision with marine fauna. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.				

Demonstration of Acceptability
Acceptability Statement: The risk assessment has determined that, given the adopted controls, vessel collision with marine fauna represents a low risk rating with any potential impact to fauna populations being slight and short-term having no impact on critical habitat or activities. Further opportunities to reduce the impacts and risks have been investigated above. The adopted controls are considered good oil-field practice/industry best practice, and meet the requirements of Part 8 (Division 8.1) of the EPBC Regulations 2000. The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of vessel collision with marine fauna to a level that is broadly acceptable.

EPOs, EPSs and MC			
<i>Environmental Performance Outcomes</i>	<i>Controls</i>	<i>Environmental Performance Standards</i>	<i>Measurement Criteria</i>
EPO 11 No vessel strikes on protected marine fauna (EPBC Fauna).	Refer to C 3.1 Section 6.6.3.	Refer to PS 3.1 Section 6.6.3.	Refer to MC 3.1.1 Section 6.6.3.
			Refer to MC 3.1.2 Section 6.6.3.

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6.7.4 Physical Presence: Introduction of Invasive Marine Species

Context														
Facility Sailaway for Maintenance – Section 3.6.2 Support Vessel Operations – Section 3.7				Biological Environment – Section 4.5				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Invasive species in vessel ballast tanks or on vessels/ submersible equipment.					✓	✓	✓	A	E	1	L	LCS GP	Broadly Acceptable	EPO 12
Description of Source of Impact														
<p>The NY facility relies on vessels to service routine operations, offtake cargo, and IMMR. Vessels are potential vectors for the introduction of invasive marine species (IMS) to the Operational Area during the Petroleum Activities Program, and include:</p> <ul style="list-style-type: none"> • facility support vessels: typically sourced from Australian waters and generally considered to be low risk, these vessels are the most commonly used vessels in the Operational Area • offtake tankers: typically from international waters and generally considered to be low risk, with approximately 12 offtakes expected for 2024 (~once per month), with offtake frequency declining as production rates decline; offtake operations may take up to 30 hrs to complete • subsea support vessels or USVs – may be sourced from Australia or overseas, depending on requirements and vessel availability. <p>The NY FPSO may leave the Operational Area to avoid dangerous weather and undergo modifications and repairs. This may include spending short periods of time in areas that are considered high risk for the presence of potential IMS, such as ports beyond Australian waters.</p> <p>IMS may be introduced to the Operational Area through:</p> <ul style="list-style-type: none"> • the discharge of ballast water • release of IMS propagules/fragments from biofouling. <p>Potential IMS can be drawn into ballast tanks during on-boarding of ballast water as cargo is unloaded or to balance vessels under load. Offtake tankers use ballast water to maintain vessel stability. This ballast is discharged when loading crude oil from the NY FPSO during offtake operations. The NY FPSO may require ballast water to operate safely when detached from the STP mooring. Ballast water taken on within the Operational Area (i.e. prior to detachment) is considered unlikely to host IMS due to the offshore location and deep water (approximately 340 to 849 m water depth). When returning from beyond Australian waters, the NY FPSO routinely undertakes ballast water exchanges to achieve low risk ballast water. Ballast water exchanges are not typically required by facility support or subsea vessels. All support and subsea vessels are required to have low risk ballast water on-board prior to being contracted to Woodside.</p> <p>All vessels are subject to some level of marine fouling. Organisms attach to the vessel hull, particularly in areas where organisms can find a good surface (e.g. seams, strainers and unpainted surfaces) or where turbulence is lowest (e.g. niches, sea chests, etc). Biofouling organisms can become established in an area through the release of propagules (e.g. eggs or larvae), or by attaching to substrate after becoming detached from the host vessel.</p>														

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Consequence Assessment

Non-indigenous Marine Species (NIMS) have been introduced into a region beyond their natural biogeographic range and can survive, reproduce and establish founder populations. Not all NIMS introduced into an area will thrive or cause demonstrable impacts. Indeed, the majority of NIMS around the world are relatively benign; few have spread widely beyond sheltered ports and harbours. Only a subset of NIMS that become abundant and impact social/cultural, human health, economic and/or environmental values can be considered IMS. IMS have historically been introduced and translocated around Australia by a variety of human means, including biofouling and ballast water.

Species of concern are those that are:

- not native to the region
- likely to survive and establish in the region
- able to spread by human mediated or natural means.

Species of concern vary from one region to another depending on various environmental factors such as water temperature, depth, salinity, nutrient levels and habitat type. These factors dictate their survival and invasive capabilities. IMS are typically species that occur in shallow water, and hence are unlikely to survive in much of the Operational Area; the NY FPSO hull, the STP mooring and sections of risers near the sea surface are the only substrates considered suitable for establishment of potential IMS.

Introducing IMS into the local marine environment may alter the ecosystem, as IMS have characteristics that make them superior (in a survival and/or reproductive sense) to indigenous species. They may prey upon local species which had previously not been subject to this kind of predation, and therefore not have evolved protective measures against the attack. They may outcompete indigenous species for food, space or light, and can also interbreed with local species, creating hybrids such that the endemic species is lost.

IMS have also proven economically damaging to areas where they have been introduced and established. Such impacts include direct damage to assets (fouling of vessel hulls and infrastructure) and depletion of commercially harvested marine life (e.g. shellfish stocks). IMS have proven particularly difficult to eradicate from areas, once established. If the introduction is captured early, eradication may be effective but is likely to be expensive, disruptive and, depending on the method of eradication, harmful to other local marine life.

Despite the potential high consequence of the establishment of a marine pest within a high value environment as a result of introduction, unlike coastal or sheltered nearshore waters, the deep offshore open waters of the Operational Area are not conducive to the settlement and establishment of IMS. The Petroleum Activities Program is undertaken in an open ocean, offshore location away from shorelines and/or critical habitat, more than 12 nm from a shore and in waters approximately 340 to 849 m deep. The impacts of introducing a marine pest in this offshore location would have a lower consequence than introduction within a nearshore location, as the introduction of IMS and associated establishment is considered highly unlikely.

When examining the potential impacts from translocation of marine pests to the NY facility itself, interactions with the facility and any support vessels (most likely Australian sourced) and tankers are limited, with time within the 500 m Petroleum Safety Zone around the facility limited to support vessel transfers/bunkering. However, the risk of this occurring is considered manageable, given the ballast water and biofouling controls which are implemented for the Petroleum Activities Program.

Summary of Potential Impacts to Environmental Value(s)

In support of Woodside’s assessment of the impacts and risks of IMS introduction associated with the petroleum activity program, risk and impact evaluations of the different aspects of marine pest translocation associated with the activity are undertaken. The results of this assessment are presented in **Table 6-12**.

As a result of this assessment Woodside has presented the highest potential consequence as a E (Environment) and likelihood as Highly Unlikely (1), resulting in an overall Low risk following the implementation of identified controls.

Table 6-12: Assessment of the impacts and risks of IMS introduction associated with the Petroleum Activity Program.

IMS Introduction Aspect	Credibility of Introduction	Consequence of Introduction	Likelihood
Transfer of IMS from infected vessel to Operational Area and establishment on the seafloor or subsea infrastructure.	Not Credible The deep offshore open waters of the Operational Area, away from shorelines and/or critical habitat, more than 12 nm from a shore and in waters 320–849 m deep are not conducive to the settlement and establishment of IMS.		

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<p>Transfer of IMS from infected vessel to and subsequent establishment on the NY FPSO.</p>	<p>Credible There is potential for the transfer of marine pests to occur.</p>	<p>If IMS were to establish this would potentially result in fouling of intakes (depending on the pest introduced), and would likely result in the quarantine of the NY FPSO until eradication could occur (through cleaning and treatment of infected areas), which would be costly to undertake. Minor (D) – Reputation and Brand Such introduction would be expected to have minor (D) impact to Woodside’s reputation and brand, and close scrutiny of asset level operations or future proposals. Slight (E) – Environment Environmental consequence of introduction of IMS to the NY FPSO is considered slight (E), localised and would relate to habitat directly on the NY FPSO.</p>	<p>Highly Unlikely (1) Interactions between the NY FPSO and support vessels will be limited during the petroleum activity program, with a 500m safety exclusion zone being adhered too. Offtake tankers are considered to present a low IMS risk do not directly contact the NY FPSO and are within the Operational Area for short periods of time (typically <36 hrs). Spread of marine pests via ballast water or spawning in these open ocean environments is considered highly unlikely (1).</p>
<p>Transfer of IMS to NY FPSO while disconnected and returns to Operational Area from shipyard.</p>	<p>Credible There is potential for the transfer of marine pests to occur.</p>	<p>If IMS were to return on the FPSO and establish, this would potentially result in fouling of intakes (depending on the pest introduced), and likely result in the quarantine of the NY FPSO until eradication could occur (through cleaning and treatment of infected areas). This would be costly to undertake. Slight (E) – Environment Environmental consequence of introduction of IMS to the NY FPSO is considered slight (E), localised, and would relate to habitat directly on the NY FPSO. Minor (D) – Reputation and Brand Such introduction would be expected to have minor (D) impact to Woodside’s reputation and brand, and close scrutiny of asset level operations or future proposals.</p>	<p>Highly Unlikely (1) Interactions between the NY FPSO and support vessels will be limited during the Petroleum Activities Program, with a 500 m Petroleum Safety Zone being adhered to. In addition, controls will be implemented (refer to ALARP discussion below) on return of NY from the shipyard to limit likelihood of IMS translocation. Spread of marine pests via ballast water or spawning in these open ocean environments is considered highly unlikely (1).</p>

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<p>Transfer of IMS from infected vessel to a subsequent establishment on NY FPSO, then transfer of IMS to a secondary vessel from the NY FPSO.</p>	<p>Not Credible</p> <p>Risk is considered so remote that it is not credible for the purposes of the Petroleum Activities Program.</p> <p>The transfer of a marine pest from an infected activity vessel to the NY FPSO was already considered highly unlikely, given the offshore open ocean environment. Furthermore, if this was to happen controls would be implemented to respond to the transfer, before many other vessels had opportunities to interact with the FPSO.</p> <p>For a marine pest to then establish into a mature spawning population on the NY FPSO and then transfer to another support vessel is not considered credible (i.e. beyond the Woodside risk matrix).</p> <p>The NY FPSO is in an offshore, open ocean, deep environment. Support vessels only spend short periods of time alongside the NY FPSO (i.e. during backloading or bunkering activities).</p> <p>There is also no direct contact (i.e. they are not tied up alongside) during these activities.</p> <p>It's also noted that Woodside has been conducting marine vessel movements between the NY FPSO and WA ports (such as Dampier) for a long period of time, and no IMS has been detected in these ports (DoF, 2017).</p>		
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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
<ul style="list-style-type: none"> • region of deployment since last thorough clean, particularly coastal locations • duration of deployments • duration of time out of water since last deployment • transport conditions during mobilisation • post-retrieval maintenance regime. <p>Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as the treatment of internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced.</p>				
<p>Undertake diver-based monitoring of the NY FPSO for IMS.</p>	<p>F: Potentially, diver-based surveys are technically feasible for the NY FPSO but are not approved under the in-force Safety Case.</p> <p>CS: Significant. IMS inspections of in-water assets typically requires vessel logistics and diver-based inspection teams to reliably detect IMS. This is a costly, time-consuming process that would likely require facility simultaneous operational constraints, and invariably introduces a series of significant safety risks in a hazardous offshore environment.</p> <p>Monetary cost of IMS survey for NY FPSO sized infrastructure would be comparable to safe diver campaign arrangements in the order of AUD\$200,000/day plus mob/demob costs. Costs of ROV to support survey are in the order of</p>	<p>NY FPSO monitoring does not prevent the potential for translocation (i.e. only as a mitigation measure). Detection may facilitate for subsequent development of options to manage IMS. Subsequent success may be limited due to structure complexity and hazardous environment.</p>	<p>Grossly disproportionate.</p> <p>Interactions between NY FPSO and support/subsea vessels posing IMS translocation risk will be limited, and the vessels involved will have been managed through the implementation of Woodside's IMS Management Plan (IMSMP) (C19.2) a verified process which provides Woodside confidence in the verification of EPO 18.</p> <p>Consequently, any additional benefit gained through the implementation of this control is considered disproportionate given material execution safety risks, and controls already adopted (and noting already</p>	<p>No</p>

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
	AUD\$150,000/day plus mob/demob costs (based on subsea ROV hire costs). Health and safety exposure includes those of personnel while conducting diver-based surveys – 4 days of 2–3 people (based on subsea ROV surveys of similar size), as well as offshore vessel and facility simultaneous operations hazards.		incurred cost through implementation of IMSMP (i.e. inspections and cleaning where risk warrants)) and the unlikely likelihood of a translocation event.	
Professional Judgement – Eliminate				
Do not use vessels.	F: No. No alternative to the use of vessels during the Petroleum Activities Program was identified. Given that vessels must be used to undertake the Petroleum Activities Program. There is no feasible means to eliminate the source of risk. CS: Not assessed, control not feasible.	Not assessed, control not feasible.	Not assessed, control not feasible.	No
Professional Judgement – Substitute				
Source vessels based in Australia only.	F: Yes. Support vessels are routinely sourced from Australia. However, depending on the nature of subsea IMMR activities, there may not be a suitable subsea support vessel within Australian waters. CS: Potential for significant cost and schedule impacts.	Reduction in the likelihood that a vessel will host IMS.	Disproportionate. The cost/sacrifice is grossly disproportionate to the benefit gained.	No

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Demonstration of ALARP				
Control Considered	Control Feasibility (F) and Cost/Sacrifice (CS)	Benefit in Impact/Risk Reduction	Proportionality	Control Adopted
IMS Inspection of all vessels.	F: Yes. Approach to inspect vessels is feasible. CS: Significant cost and schedule impacts. Thorough inspections require vessels to be removed from the sea (e.g. slipped or dry docked) and examined by an IMS expert. This process incurs significant financial and schedule sacrifices. Timely vessel based support is integral to the safe and efficient operation of the NY FPSO and subsea infrastructure.	Reduction in the likelihood that a vessel will host IMS.	Disproportionate. The cost/sacrifice is grossly disproportionate to the benefit gained.	No
Inspection of NY FPSO by IMS Inspector prior to return from international sailaway.	F: Yes. Approach to inspect vessels is feasible. CS: Significant cost and schedule impacts. Thorough inspections require vessels to be removed from the sea (e.g. slipped or dry docked) and examined by an IMS Inspector. This process incurs significant financial and schedule sacrifices.	Reduction in the likelihood that the FPSO would host IMS on return to Operational Area from international sailaway.	Although the inspection of all vessels associated with NY operations is considered disproportionate (rejected control above), considering the implementation of Woodside's IMSMP (C 14.2, the inspection of the NY FPSO itself by an IMS Inspector is considered appropriate given the added level of confidence it provides.	Yes C 12.4

Professional Judgement – Engineered Solution

None identified.

ALARP Statement:

On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of IMS introduction and establishment. As no reasonable additional/alternative controls were identified that would further reduce the impacts and risks without grossly disproportionate sacrifice, the impacts and risks are considered ALARP.

Demonstration of Acceptability

Acceptability Statement:

The risk assessment has determined that, given the adopted controls, introduction of IMS represent a low risk rating that is highly unlikely to result in an environmental consequence greater than slight impact on marine communities within the Operational Area. Further opportunities to reduce the risks have been investigated above. The adopted controls are considered good oil-field practice/industry best practice. The potential impacts and risks are considered broadly acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks of invasive marine species to an acceptable level.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 12</p> <p>No introduction of IMS into the Operational Area as a result of the Petroleum Activities Program.</p>	<p>C 12.1</p> <p>All vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.</p>	<p>PS 12.1</p> <p>Compliance with Australian Ballast Water Management Requirements (as defined under the <i>Biosecurity Act 2015</i>) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent the introduction of IMS.</p>	<p>MC 12.1.1</p> <p>Ballast water exchange records maintained by vessels which verifies compliance against Ballast Water Management requirements.</p>
	<p>C 12.2</p> <p>Internationally sourced project vessels will manage their biosecurity risk associated with biofouling as specified in the Australian Biofouling Management Requirements.</p>	<p>PS 12.2.</p> <p>Compliance with Australian Biofouling Management Requirements.</p>	<p>MC 12.2.1</p> <p>Records maintained by vessels which verifies compliance against Ballast Water Management requirements.</p>
	<p>C 12.3</p> <p>Woodside's IMS risk assessment process will be applied to activity vessels and immersible equipment. Assessment will consider the following risk factors:</p> <p>For vessels:</p> <ul style="list-style-type: none"> • vessel type • recent IMS and cleaning history, including for internal niches • out of-water period prior to mobilisation 	<p>PS 12.3</p> <p>Prior to entering the Operational Area Project vessels and relevant immersible equipment are determined to be low risk⁵⁵ of introducing IMS of concern.</p>	<p>MC 12.3.1</p> <p>Records of IMS risk assessments maintained for all project vessels and relevant immersible equipment entering the Operational Area to undertake the Petroleum Activities Program.</p>
	<ul style="list-style-type: none"> • age and suitability of antifouling coating at mobilisation date • internal treatment systems and history • origin and proposed area of operation • number of stationary/slow speed periods greater than seven days 	<p>PS 12.3.2</p> <p>IMS risk assessments undertaken by an authorised Environment Advisor who has completed relevant Woodside IMS training or by qualified and experienced IMS inspector.</p>	<p>MC 12.3.2</p> <p>Records of Environment Adviser training and IMS inspector qualifications (as relevant).</p>

⁵⁵ Low risk of introducing IMS of concerns is defined as either no additional management measures required or, management measures have been applied to reduce the risk.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<ul style="list-style-type: none"> • region of stationary or slow periods • type of activity – contact with seafloor. <p>For immersible equipment:</p> <ul style="list-style-type: none"> • region of deployment since last thorough clean, particularly coastal locations • duration of deployments • duration of time out of water since last deployment • transport conditions during mobilisation • post retrieval maintenance regime. <p>Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as the treatment of internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced.</p>		
	<p>C 12.4 Inspection of NY FPSO by IMS Inspector prior to return from international sailaway.</p>	<p>PS 12.4 IMS assessments undertaken by an authorised IMS Inspector.</p>	<p>MC 12.4.1 Records of IMS Inspector assessment.</p>

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6.8 Unplanned Activities (Accidents, Incidents, Emergency Situations) – Major Environmental Events

The risks considered in this section have been identified as MEEs due to the potential for significant consequence. These sources of risk are subject to additional consideration in accordance with the process described in **Section 2.7**.

6.8.1 Quantitative Spill Risk Assessment Methodology

Quantitative hydrocarbon spill modelling was undertaken by RPS, on behalf of Woodside, using a three-dimensional (3D) hydrocarbon spill trajectory and weathering model, Spill Impact Mapping and Analysis Program (SIMAP), which is designed to simulate the transport, spreading and weathering of specific hydrocarbon types under the influence of changing meteorological and oceanographic forces.

A stochastic modelling scheme was followed in this study, whereby SIMAP was applied to repeatedly simulate the defined credible spill scenarios using different samples of current and wind data. These data samples were selected randomly from an historic time-series of wind and current data representative of the study area. Results of the replicate simulations were then statistically analysed and mapped to define contours of percentage probability of contact at identified thresholds around the hydrocarbon release point.

The model simulates hydrocarbon releases and uses the unique physical and chemical properties of a hydrocarbon type to calculate rates of evaporation and viscosity change, including the tendency to form OIW emulsions. Moreover, the unique transport and dispersion of surface slicks and in-water components (entrained and dissolved) are modelled separately. Thus, the model can be used to understand the wider potential consequences of a spill, including direct contact of hydrocarbons due to surface slicks (floating hydrocarbon) and exposure of organisms to entrained and dissolved aromatic hydrocarbons in the water column.

During each simulation, the SIMAP model records the location (by latitude, longitude and depth) of each of the particles (representing a given mass of hydrocarbons) on or in the water column, at regular time steps. For any particles that contact a shoreline, the model records the accumulation of hydrocarbon mass that arrives on each section of shoreline over time, less any mass that is lost to evaporation and/or subsequent removal by current and wind forces.

The collective records from all simulations are then analysed by dividing the study region into a 3D grid. For surface hydrocarbons (floating oil), the sum of the mass in all hydrocarbon particles located within a grid cell, divided by the area of the cell, provides hydrocarbon concentration estimates in that grid cell at each model output time interval. For entrained and dissolved aromatic hydrocarbon particles, concentrations are calculated at each time step by summing the mass of particles within a grid cell and dividing by the volume of the grid cell. The process is also subject to the application of spreading filters that represent the expected mass distribution of each distinct particle. The concentrations of hydrocarbons calculated for each grid cell, at each time step, are then analysed to determine whether concentration estimates exceed defined threshold concentrations.

Hydrocarbon spill modelling assessments undertaken by RPS undergo initial sensitivity modelling to determine appropriate time to add to the simulation after the cessation of the spill. The amount of time following the spill is based on the time required for the modelled concentrations to practically drop below threshold concentrations anywhere in the model domain in the test cases. This assessment is done by post-processing the sensitivity test results and analysing time-series of median and maximum concentrations in the water and on the surface.

6.8.1.1 Hydrocarbon Characteristics

As part of the risk identification process, Woodside identified the range of credible hydrocarbon spill scenarios that may occur from the NY FPSO, associated wells, subsea infrastructure and vessels. These scenarios are considered in the risk assessments of MEEs (Sections 6.8.3 to 6.8.10). Table 6-13 summarises the characteristics of the hydrocarbons used as the basis for the modelling studies to inform the assessment of MEEs.

Table 6-13: Characteristics of the hydrocarbon types used for modelling and ecotoxicological studies

Hydrocarbon Type	Initial Density (g/cm ³) at 15°C	Viscosity (cP)	Component	Volatile (%)	Semi-volatiles (%)	Low volatility (%)	Residual (%)	Aromatic (%)
			Boiling Point (°C)	<180°C	180 to 265°C	265 to 380°C	>380°C	Of Whole Product <380
Vincent Crude	0.9502	132.07 at 40°C	% total	0	6.3	35.2	58.5	8.7
NY Topsides Blend	0.927	96.7 at 20°C	% total	3.3	14.8	51.1	30.8	15.0
Marine Diesel	0.829	4.0 at 20°C	% total	6	34.6	54.4	5	3

Vincent Crude

Vincent crude comprises of semi and low volatile compounds with highly volatile components being absent. In general, 6.3% of the oil mass should evaporate within the first 24 hours (180°C < BP < 265°C); and a further 35.2% should evaporate over several days (265°C < BP < 380°C). Consequently, 58.5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 8.7%.

The heavier (low volatility) components of the oil tend to entrain into the upper water column due to wind-generated waves but can subsequently resurface if wind-waves abate. Therefore, the heavier components of this oil can remain entrained or on the sea surface for an extended period, with associated potential for dissolution of the soluble aromatic fraction.

Additionally, the higher viscosity of the oil is notable in terms of the potential to break up and entrain into the water column under forces generated by breaking waves. The residual component of the oil would have boiling points too high to evaporate under ambient conditions. This proportion of the oil made up of long carbon chain compounds, could then persist in the marine environment for extended amounts of time until biodegraded.

Figure 6-1 shows the weathering characteristics of Vincent Crude in the 'constant-wind' case. In this case, approximately 6.4% of the oil is predicted to evaporate within 24 hours. Under these calm conditions, most of the remaining oil will stay on the water surface and will weather at a slower rate due to being comprised of the longer-chain compounds with higher boiling points. Evaporation of the residual compounds will slow significantly, and they will then be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case (Figure 6-2) where the winds are of greater strength, levels of entrainment into the water column are forecasted to become significant, with a resultant decrease in

the mass of oil floating on the surface and subject to atmospheric weathering. Approximately 24 hours after the spill, around 49.5% of the oil mass is forecast to have entrained and a further 6.5% is forecast to have evaporated, leaving around 37.6% of the oil floating on the water surface.

The increased level of entrainment in the variable-wind case will result in a higher percentage of biological and photochemical degradation, where the decay of the floating slicks and oil droplets in the water column occurs at an approximate rate of 2.5% per day with an accumulated total of ~18.7% after seven days, in comparison to a rate of ~1.84% per day and an accumulated total of 11.9% after seven days in the constant-wind case. Given the large proportion of entrained oil and the tendency for it to remain mixed in the water column, the remaining hydrocarbons should decay and/or evaporate over time scales of several weeks to a few months. This long weathering duration will extend the area of potential effect, requiring the break-up and dispersion of the slicks and droplets to reduce concentrations below the thresholds considered in this study.

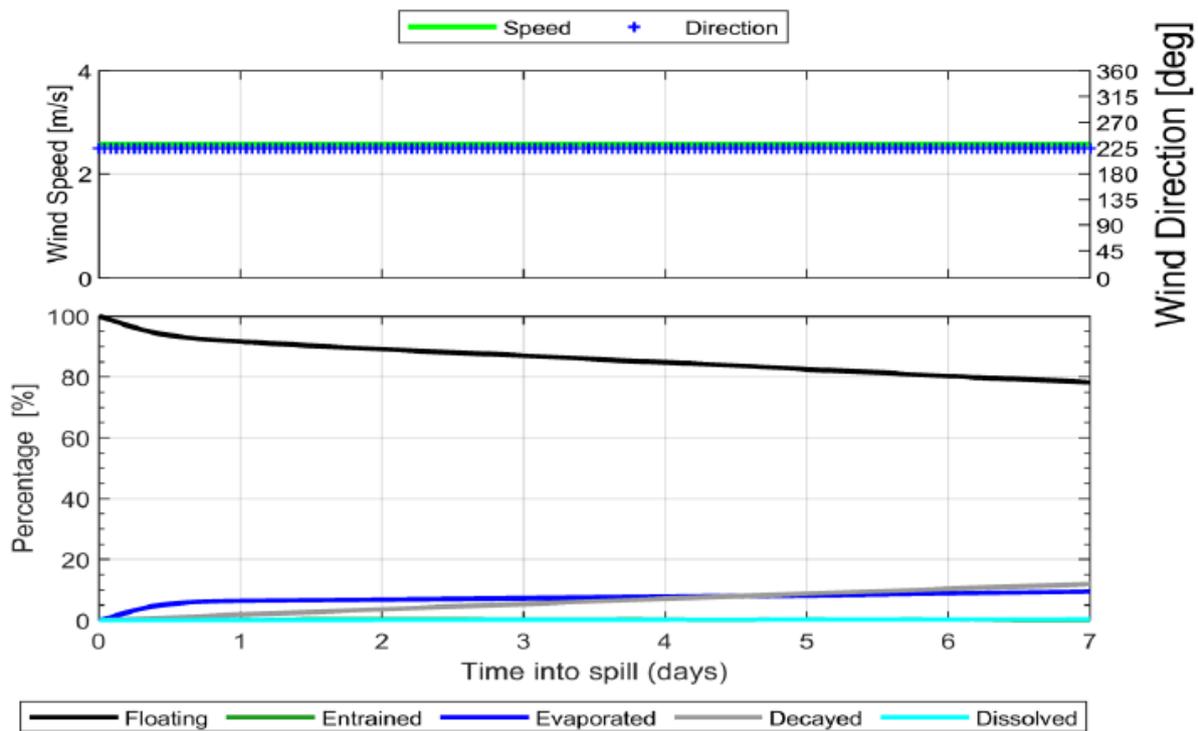


Figure 6-1: Proportional mass balance plot representing the weathering of Vincent Crude spilled onto the water surface as a one-off release (50 m³) and subject to a constant 5 kn (2.6 m/s) wind at 27°C water temperature and 25°C air temperature

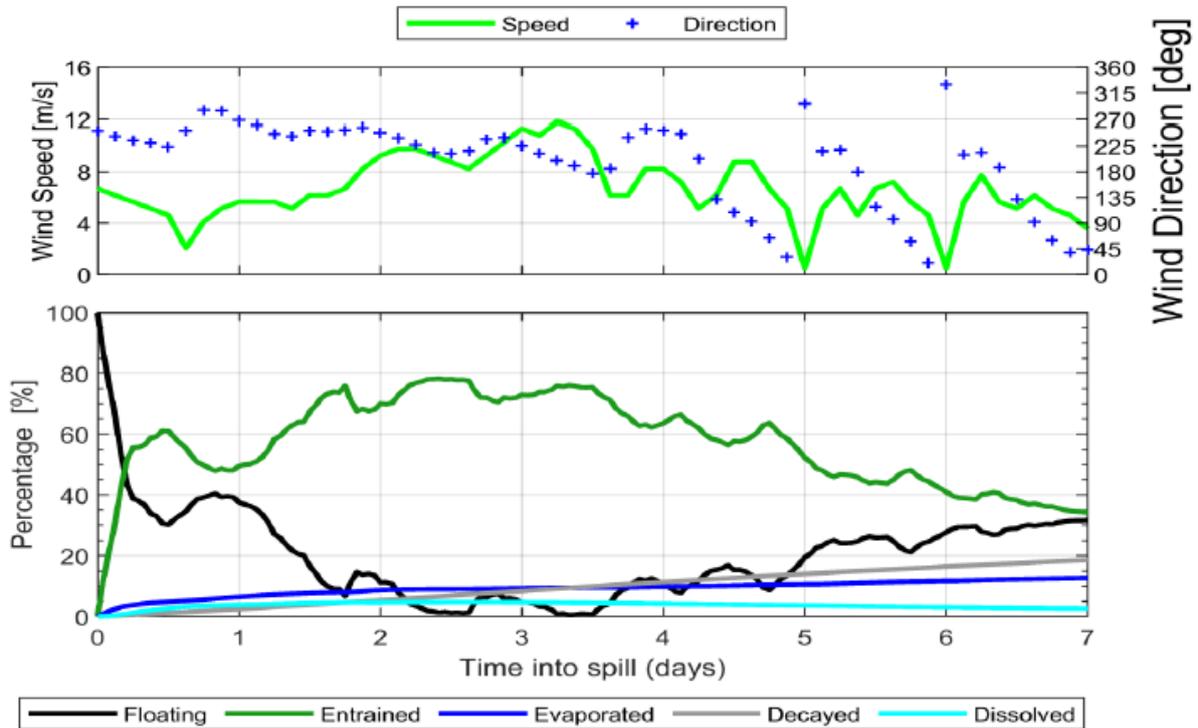


Figure 6-2: Proportional mass balance plot representing the weathering of Vincent Crude spilled onto the water surface as a one-off release (50 m³) and subject to variable wind at 27 C water temperature and 25°C air temperature

Ngujima-Yin Topside Blends

NY topsides blend crude contains a relatively high proportion (~31% by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. These compounds will persist in the marine environment. The unweathered mixture has a high dynamic viscosity (96.7 cP). The pour point of the whole oil (<27°C) ensures it will remain in a liquid state over the annual temperature range observed on the NWS.

The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 3.3% of the oil mass should evaporate within the first 12 hours (BP <180°C); a further 14.8% should evaporate within the first 24 hours (180°C < BP <265°C); and a further 51.1% should evaporate over several days (265°C < BP <380°C).

Selective evaporation of the lower boiling-point components is expected to lead to a shift in the physical properties of the remaining mixture, including an increase in the viscosity and pour point. This may result in solidification and/or sinking of the weathered hydrocarbon over time.

The whole oil has low asphaltene content (<0.2%), indicating a low propensity for the mixture to take up water to form water-in-oil emulsion over the weathering cycle.

Soluble aromatic hydrocarbons contribute approximately 15% by mass of the whole oil, with a large proportion (12.3%) in the C16–C20 range of hydrocarbons. These compounds should evaporate slowly, leaving the potential for dissolution of a proportion of them into the water.

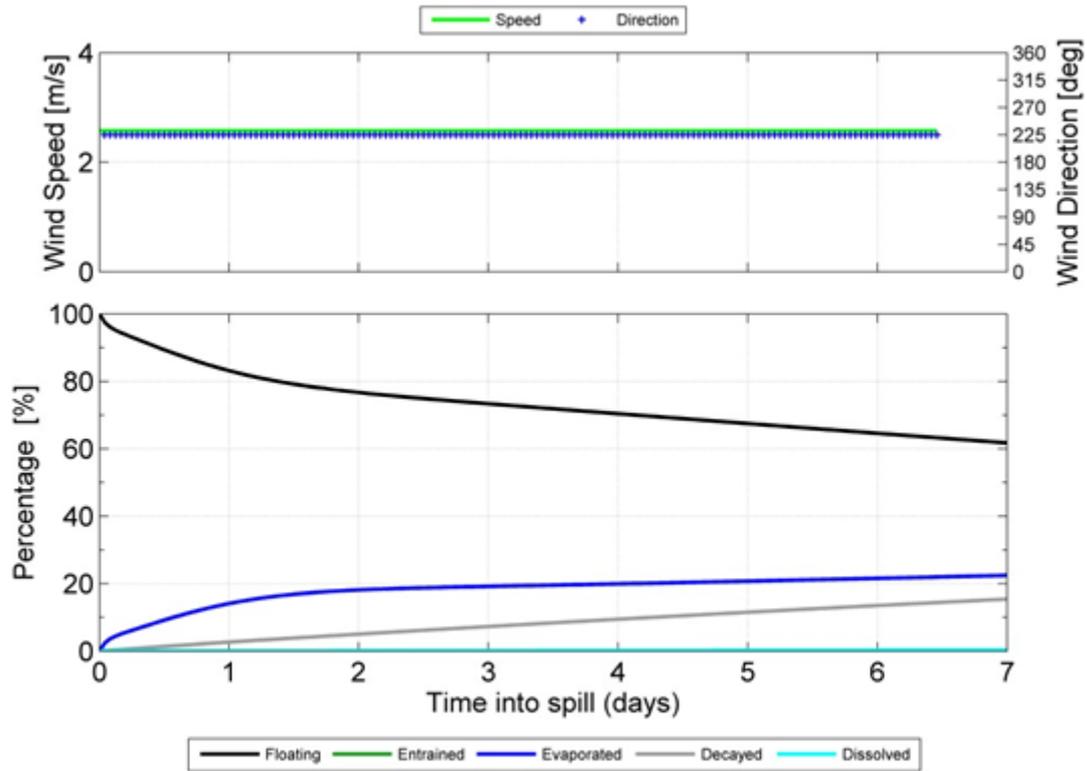


Figure 6-3: Proportional mass balance plot representing the weathering of Ngujima-Yin topsides blend crude spilled onto the water surface as a one-off release (50 m³ over one hour) and subject to a constant 5 kn (2.6 m/s) wind at 27°C water temperature and 25°C air temperature

Marine Diesel

Marine diesel is a mixture of volatile and persistent hydrocarbons with low proportions of highly volatile and residual components. In general, about 6% of the oil mass should evaporate within the first 12 hours (BP <180°C); a further 35% should evaporate within the first 24 hours (180°C < BP <265°C); and a further 54% should evaporate over several days (265°C < BP <380°C). Approximately 5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 3%.

If released in the marine environment and in contact with the atmosphere (i.e. surface spill), approximately 41% by mass of this oil is predicted to evaporate over the first couple of days depending upon the prevailing conditions, with further evaporation slowing over time. The heavier (low volatility) components of the oil tend to entrain into the upper water column due to wind-generated waves but can subsequently resurface if wind-waves abate. Therefore, the heavier components of this oil can remain entrained or on the sea surface for an extended period, with associated potential for dissolution of the soluble aromatic fraction.

The mass balance forecast for the constant-wind case for marine diesel shows that approximately 40% of the oil is predicted to evaporate within 36 hours. Under these calm conditions the majority of the remaining oil on the water surface would weather at a slower rate due to being comprised of the longer-chain compounds with higher boiling points. Evaporation of the residual compounds will slow significantly, and they will then be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case, where the winds are of greater strength, entrainment of marine diesel into the water column is indicated to be significant. Approximately two days after the spill, around 50% of the oil mass is forecast to have entrained and a further 45% is forecast to have evaporated, leaving only a small proportion of the oil floating on the water surface (<2%). The residual compounds

will tend to remain entrained beneath the surface under conditions that generate wind waves (approximately >6 m/s).

Biological and photochemical degradation is predicted to contribute to the decay of the floating slicks and oil droplets in the water column at an approximate rate of around 0.50% per day, for an accumulated total of about 3-4% after seven days in each wind case. However, given the large proportion of entrained oil and the tendency for it to remain mixed in the water column, the remaining hydrocarbons will decay and/or evaporate over time scales of several weeks to a few months. This long weathering duration will extend the area of potential effect, requiring the break-up and dispersion of the slicks and droplets to reduce concentrations below the thresholds considered in this study.

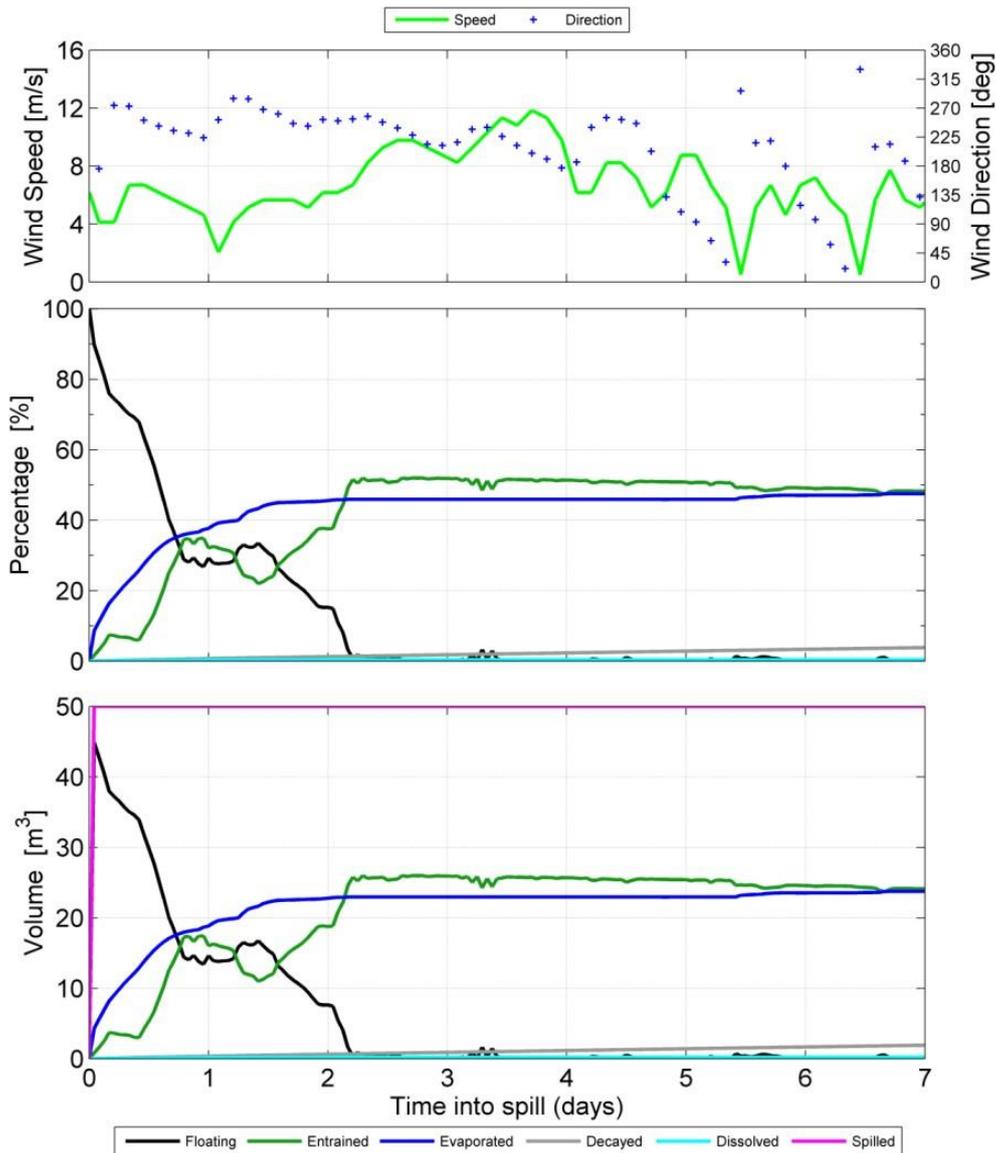


Figure 6-4: Mass balance plot representing, as proportion (middle panel) and volume (bottom panel), the weathering of marine diesel spilled onto the water surface as a one-off release (50 m³ over one hour) and subject to variable winds (top panel) at 27°

6.8.2 Major Environmental Events Overview

Section 2.7 outlines the process for additional analysis and evaluation of MEEs. Sections 6.8.3 to 6.8.11 present the bowtie output for each MEE identified (Table 6-15).

Table 6-15: Major environmental events for the Ngujima-Yin facility

Reference	Hazard	Top Event
MEE-01 (Section 6.8.3)	Hydrocarbons in reservoir, wells, wellheads and Xmas trees	Subsea loss of well containment
MEE-02 (Section 6.8.4)	Hydrocarbons conveyed in subsea equipment (including flowlines, manifolds and risers) to the NY FPSO	Subsea flowline and riser loss of containment
MEE-03 (Section 6.8.4)	Liquid hydrocarbons in the NY FPSO process modules, elements or non-process items of equipment	Topsides loss of containment
MEE-04 (Section 6.8.5)	Liquid hydrocarbons in the NY FPSO offloading system	Loss of containment during offloading
MEE-05 (Section 6.8.7)	Hydrocarbons in NY FPSO cargo tanks	Cargo tank loss of containment
MEE-06 (Section 6.8.8)	Liquid hydrocarbons in the NY FPSO and associated infrastructure	Loss of structural integrity
MEE-07 (Section 6.8.9)	Liquid hydrocarbons associated with the subsea flowlines and risers and NY FPSO topsides equipment (including FPSO offloading facilities and storage tanks)	Loss of marine vessel separation
MEE-08 (Section 6.8.10)	Lifting activities associated with NY FPSO operations	Loss of control of suspended load

Each section includes the summary of the hazard description, hazard management, emergency response, ALARP summary and a list of SCE barriers identified on the bowties.

The generic SCE failure bowtie and the generic human error bowties are presented in Section 6.8.11. They illustrate the causes, outcomes and the controls/barriers in place to manage potential common cause event (CCE) failure mechanisms for MEE controls associated with generic SCE equipment failure (CCE-01), and also human error (CCE-02). Controls and specific measures are listed for both bowties. Human Error is managed via the Woodside Management System; the Generic Human Error bowtie is included in the MEE section for completeness.

Woodside has developed a tailored ALARP position for hydrocarbon spill response, including EPOs, EPs and MCs for preparedness and response. The response arrangements are a mitigative control that is applicable to all MEEs where a hydrocarbon release may credibly occur.

ALARP is demonstrated through controls and barriers being analysed for selection, based on their independence. They are then prioritised in accordance with hierarchy of controls, where controls further up the hierarchy take precedence over controls further down, and further analysed to consider the type of effect the control provides. Controls presented for MEE bowties are labelled in accordance with the type of effect classification presented in Table 6-16.

Table 6-16: Barrier hierarchy and type of effect

Type of Effect	Legend	Description
Elimination (Technical)		Elimination controls form the 'first line of defence'. They eliminate the underlying hazard and therefore are the most effective category of control measure. If practicable, they should be selected in preference to any other type, as their existence removes the need for any other controls (e.g. a corrosion-resistant metal could replace the original material of construction).
Elimination (Administration)		
Prevention (Technical)		Prevention controls are intended to remove certain causes of incidents or reduce their likelihood. The corresponding hazard remains, but the frequency of incidents involving the hazard is lowered (e.g. introduction of regular maintenance programs can prevent the development of events involving the hazard). Where hazards and causes could not be 'eliminated', controls are required to prevent them from leading to unwanted events and consequences.
Prevention (Administration)		
Detection (Technical)		Detection controls are those that identify a potentially hazardous scenario (e.g. a change in operating parameters), allowing initiation of procedures or systems to prevent the cause occurring. Controls that detect the occurrence of events are often critical to being able to respond with other control measures that reduce the propagation of the events. Detection controls themselves often provide no actual control other than the awareness of the need to respond.
Detection (Administration)		
Reduction/Control (Technical)		Reduction controls are intended to limit the scale and consequence of incidents. They include systems that detect incidents and take some action (e.g. to reduce the rate of leakage of a toxic gas) and also aspects such as inter-unit separation that prevent escalation of fire and explosion incidents. As there is always potential for controls to fail, additional measures are required to limit the scale and severity of any unwanted event or outcome that may arise, by providing the ability to intervene and limit the propagation of the events.
Reduction/Control (Administration)		
Mitigation (Technical)		Mitigation controls take effect in response to an incident. They include controls that lessen the significance or damage caused by an unwanted event. Such controls only take effect after the hazardous event and outcomes occur. Mitigation controls are generally those designed to protect personnel against the consequences of a hazard or to aid in recovering from the effects of the hazard.
Mitigation (Administration)		

6.8.3 Unplanned Hydrocarbon Release: Loss of Well Containment (MEE-01)

Context														
Facility Layout and Description – Section 3.5 Subsea Inspection, Monitoring, Maintenance and Repair Activities – Section 3.10				Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural Environment – Section 4.10					Consultation – Section 5					
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Release of hydrocarbons resulting from loss of subsea well containment.		✓	✓	✓	✓	✓	✓	B	A	1	H	LCS RBA CV SV	Acceptable if ALARP	EPO 13
Description of Source of Risk														
<p>A loss of well containment can lead to an uncontrolled release of reservoir hydrocarbons or other well fluids to the environment. Woodside has identified a loss of well containment (LOWC) as the scenario with the worst case credible environmental outcome as a result of this event. The causes of a loss of well containment may include, but are not limited to:</p> <ul style="list-style-type: none"> • internal corrosion • external corrosion • erosion • overpressure of the annuli • fatigue • loss of control of suspended load from vessel (operating near subsea wells). <p>A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in Section 6.8.11.</p> <p>Loss of Well Containment – Credible Scenario</p> <p>The Petroleum Activities Program includes production from a series of subsea wells. The worst-case credible hydrocarbon spill scenario involves a long-term (77-day) uncontrolled subsea release of 258,549 m³ of Vincent Crude from the Vincent Infill Well (VNBH4-ST2). The credible worst-case subsea release was based on the maximum credible release volume from the highest flow rate subsea well, which if the Vincent Infill Well is developed (under a separate future EP), would be that well.</p> <p>The loss of well containment scenario was assumed to have a duration of 77 days. This duration is based on the estimated time required to successfully drill an intervention well. The characteristics of the release scenario is summarised in Table 6-17. The characteristics of Vincent Crude was used as the basis for modelling the loss of well containment scenario; refer to Section 6.8.1 for additional information on modelling methods, hydrocarbon characteristics and environmental impact thresholds.</p>														

Table 6-17: Summary of worst-case loss of well containment hydrocarbon release scenario

Scenario	Hydrocarbon	Average Rate (m ³ /day)	Duration (days)	Depth (BMSL)	Latitude (DMS)	Longitude (DMS)	Total Hydrocarbon Release Volume (m ³)
Subsea release	Vincent Crude	3,358	77	393	21° 26' 01.66" S	114° 01' 59.41" E	258,549

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in well design, construction and operation. In the company’s 60-year history, it has not experienced any well integrity events that have resulted in significant releases or significant environmental impacts. The NY facility has never experienced a worst-case loss of well containment in its operational history.

Decision Type

A decision type ‘B’ has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.6.3**) and hydrocarbon spill trajectory modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation. The release of hydrocarbons as a result of well loss of containment is considered an MEE (MEE-01). The hazard associated with this MEE is hydrocarbons in subsea wells tied-back to the NY FPSO.

Quantitative Spill Risk Assessment Stochastic spill modelling of the worst-case credible loss of well containment spill scenario was undertaken by RPS APASA, on behalf of Woodside, to determine the fate of hydrocarbons released in each scenario based on the assumptions in **Section 6.8.1**. Stochastic modelling was undertaken over all seasons to address year-round operations. This is considered to provide a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volumes for all loss of well containment scenarios.

Quantitative Spill Risk Assessment

Spill modelling of the worst-case credible loss of well containment spill scenario was undertaken by RPS, to determine the fate of hydrocarbons released based on the assumptions in **Section 6.8.1**. Modelling was undertaken over all seasons to address year-round operations. This is considered to provide a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volumes for all loss of well containment scenarios.

Hydrocarbon Characteristics

Hydrocarbon characteristics are provided in described in more detail in **Section 6.8.1**.

Subsea Plume Dynamics

The loss of well containment scenarios will result in a buoyant plume of hydrocarbons, which has been modelled using the OILMAP-Deep numerical model.

Likelihood

In accordance with the Woodside Risk Matrix, a worst-case loss of well containment has been defined as a ‘highly unlikely’ event as it ‘has occurred once or twice in the industry’ (experience-based likelihood) and aligns with a frequency of a ‘1 in 10,000 to 1 in 100,000 year’ event. Information to support this likelihood determination is outlined below. This assessment considers the likelihood of the worst-case credible scenario occurring.

A review of industry statistics indicates that the probability of a loss of well containment for production wells is low (10.6% of 292 recorded blowouts), relative to other activities in other hydrocarbon provinces (Gulf of Mexico and the North Sea), such as exploration drilling (31.5% of blowouts), development drilling (23.6% of blowouts) and well workovers (20.5% of blowouts) (SINTEF, 2017). Separate analysis of blowout data collected between 1991 and 2010 in the North Sea and the US Gulf of Mexico shows that only ten blowouts occurred during the production phase at a frequency of 1.36 × 10⁻⁵ blowouts per well year, with all of these events occurring in the US Gulf of Mexico and none occurring in the North Sea (Scandpower, 2013). North Sea standards of well design and operation are considered to be aligned with those applied by Woodside, as outlined in the NY Well Operations Management Plan (WOMP). This data quantitatively supports the likelihood ranking as described above.

When considering likelihood from an ‘Experience’ perspective and considering the likelihood of the environmental consequence of the blowout event, historic blowouts that have had catastrophic impact to the environment (‘A’ consequence rating) are infrequent in the industry, which further supports the likelihood ranking of ‘Highly Unlikely’.

Consequence

The spatial extent and fate (including weathering) of the spilled hydrocarbons were considered during the impact assessment for the identified worst-case loss of well containment scenario (presented in the following section). These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS

APASA, available information on environmental sensitivities that may credibly be impacted in the event of either worst-case spill event, and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May be Affected

Surface Hydrocarbons

The stochastic modelled floating hydrocarbon EMBA from both loss of well containment is forecast to drift in all directions, reflecting the competing influence of both surface currents and winds across the wide area in which a large and persistent slick could travel over the long duration of the release. At the surface threshold of 10 g/m², floating oil is forecast to potentially occur up to approximately 950 km from the release site. The potential contact above impact thresholds at a number of receptors.

Entrained Hydrocarbons

Stochastic modelling indicated entrained hydrocarbons are forecast to potentially drift in all directions, with the most likely directions of travel being to the south-west of the release site, due to the influence of the NWMR seasonal currents. The modelling indicated that the entrained hydrocarbon EMBA above the 100 ppb threshold concentrations could potentially occur up to 1550 km for the loss of well containment scenario; contact above impact thresholds was forecast at a range of receptors.

Dissolved Hydrocarbons

In the event of a loss of well containment scenario, a plume of dissolved hydrocarbons would potentially drift in all directions, with the most likely directions of travel being to the south-west of the release site, due to the influence of the NWS seasonal currents. Stochastic modelling results indicated contact above impact thresholds may occur at a range of receptors. The dissolved plume from the loss of well containment was forecast to potentially extend approximately 1250 km.

Accumulated Hydrocarbons

There is considerable potential for shoreline accumulation above impact thresholds at a number of receptors. Modelling indicated potentially large volumes of hydrocarbons may be stranded on shorelines as far as the Indonesian coastline and the Abrolhos Islands.

Summary of Potential Impacts to Environmental Value(s)

Table 6-18 presents the full extent of the EMBA for loss of well containment (within which all other credible hydrocarbon spill EMBA are contained), i.e. the sensitive receptors and their locations that may be exposed to hydrocarbons (surface, entrained, dissolved and accumulated) at or above the set threshold concentrations in the unlikely event of a loss of well containment during the Petroleum Activities Program. Details of these receptors are outlined in **Section 4**. The potential biological and ecological impacts of an unplanned hydrocarbon release as a result of a loss of well containment during the Petroleum Activities Program are discussed in the following sections.

Environmental Setting	Receptor	Environmental, Social, Heritage and Economic Aspects presented as per the Environmental Risk Definitions (Woodside's Risk Management Procedure)																								Probability of Hydrocarbon Contact and Fate (%)													
		Physical		Biological																	Socio-economic and Cultural					Socio-economic EMBA		EMBA											
		Water Quality	Sediment Quality	Marine Primary Producers			Other Communities/Habitats				Protected Species							Other Species		Fisheries - Commercial	Fisheries - Traditional	Tourism and Recreation	Protected Areas/Heritage - European/Indigenous/Underwater Cultural Heritage	Offshore Oil and Gas Infrastructure (Topside and Subsea)	Surface Hydrocarbon (1-10 g/m ²)	Accumulated Hydrocarbons (10-100 g/m ²)	Surface Hydrocarbons (≥ 10 g/m ²) [2]	Accumulated Hydrocarbons (≥ 100 g/m ²)	Entrained Hydrocarbons (≥ 100 ppb)	Dissolved Hydrocarbons (≥ 400 ppb)									
		Open Water (Pristine)	Marine Sediment (Pristine)	Coral Reef	Seagrass Beds/Macroalgae	Mangroves	Spawning/Nursery Areas	Open water - Productivity/Upwelling	Non-biogenic Reefs	Offshore Filter feeders and/or Deepwater Benthic Communities	Nearshore Filter Feeders	Sandy Shores	Estuaries/Tributaries/Creeks/Lagoons (including mudflats)	Rocky Shores	Cetaceans - Migratory Whales	Cetaceans - Dolphins and Porpoises	Dugongs	Pinnipeds (Sea Lions/Fur Seals)	Marine Turtles (Foraging, Interesting Areas, Significant Nesting Beaches)												Sea Snakes	Whale Sharks	Sharks and Rays	Seabirds and Migratory Shorebirds	Pelagic Fish Populations	Demersal Fish Populations			
Imperieuse Reef (Rowley Shoals MP)	✓	✓	✓			✓	✓		✓					✓			✓	✓		✓	✓			✓	✓						12	29		16					
Jarrkurnpang																															1	5		4					
Jinmarnkur Kulja																															4		3						
Jurien Bay MP																															5	16		7					
Kalbarri																															9		1						
Lalang-garram/Camden Sound MP																															2	6		4					
Lalang-garram/Horizontal Falls MP																															1	4		2					
Marmion MP																															5	15		6					
Montebello Islands MP	✓	✓	✓	✓	✓	✓			✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Muiron Islands MMA	✓	✓	✓	✓		✓	✓		✓		✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ngari Capes MP																																8		2					
Ningaloo Coast WH									✓	✓	✓	✓					✓														89	43	62	38	85	21			
Ningaloo MP (State)									✓	✓	✓	✓					✓														67	43	26	38	38	7			
North Kimberley MP																															1	5		2					

Environmental Setting	Receptor	Environmental, Social, Heritage and Economic Aspects presented as per the Environmental Risk Definitions (Woodside's Risk Management Procedure)																								Probability of Hydrocarbon Contact and Fate (%)															
		Physical		Biological																	Socio-economic and Cultural					Socio-economic EMBA	EMBA														
		Water Quality	Sediment Quality	Marine Primary Producers				Other Communities/Habitats					Protected Species								Other Species				Protected Areas/Heritage – European/Indigenous/Underwater Cultural Heritage		Offshore Oil and Gas Infrastructure (Topside and Subsea)	Surface Hydrocarbon (1–10 g/m ²)		Accumulated Hydrocarbons (10–100 g/m ²)		Surface Hydrocarbons (≥ 10 g/m ²) [2]		Accumulated Hydrocarbons (≥ 100 g/m ²)		Entrained Hydrocarbons (≥ 100 ppb)		Dissolved Hydrocarbons (≥ 400 ppb)			
				Open Water (Pristine)	Marine Sediment (Pristine)	Coral Reef	Seagrass Beds/Macroalgae	Mangroves	Spawning/Nursery Areas	Open water – Productivity/Upwelling	Non-biogenic Reefs	Offshore Filter feeders and/or Deepwater Benthic Communities	Nearshore Filter Feeders	Sandy Shores	Estuaries/Tributaries/Creeks/Lagoons (including mudflats)	Rocky Shores	Cetaceans – Migratory Whales	Cetaceans – Dolphins and Porpoises	Dugongs	Pinnipeds (Sea Lions/Fur Seals)						Marine Turtles (Foraging, Interesting Areas, Significant Nesting Beaches)		Sea Snakes	Whale Sharks	Sharks and Rays	Seabirds and Migratory Shorebirds	Pelagic Fish Populations	Demersal Fish Populations	Fisheries - Commercial	Fisheries - Traditional	Tourism and Recreation	Surface Hydrocarbon (1–10 g/m ²)	Accumulated Hydrocarbons (10–100 g/m ²)	Surface Hydrocarbons (≥ 10 g/m ²) [2]	Accumulated Hydrocarbons (≥ 100 g/m ²)	Entrained Hydrocarbons (≥ 100 ppb)
Exmouth Reef*	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓	✓	✓		✓	✓			9				1							
Fairway Reef*																														12				1							
Hood Reef*																														15				3							
Meda Reef*																														10				2							
Montebello Shoals*																														21				5							
Ningaloo Reef*																														48	19		29	4							
North West Reef*																														22	9		16								
Otway Reef*																														18			4								
Outtrim Patches*																														21	3		8								
Penguin Bank*																														16	1		4								
Poivre Reef*																														15	3		6								
Ripple Shoals*																														10	1		3								
Rosily Shoals*																														13			4								
Sandy Islet																														1	18		5								
Scott Reef South																														1	22		8								
Spider Reef*																														8			1								
Trap Reef*																														9			2								
Tryal Rocks*																														28	1		11								

Summary of Potential Impacts to Environmental Value(s)

Open Water Environment (Near Spill Area)

Air Quality

A hydrocarbon release during a loss of well containment has the potential to result in localised, temporary reduction in air quality and contribution of greenhouse gases to the global concentration of these gases in the atmosphere.

There is potential for human health effects on workers in the immediate vicinity of atmospheric emissions. The ambient concentrations of VOCs released from diffuse sources is difficult to accurately quantify, although their behaviour and fate is predictable in open offshore environments, as it is dispersed rapidly by meteorological factors such as wind and temperature. VOC emissions from a hydrocarbon release in such environments are rapidly degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals.

Due to the unlikely occurrence of a well loss of containment, the temporary nature of any VOC emissions (from either gas surfacing or weathering of liquid hydrocarbons from a loss of well containment), the predicted behaviour and fate of VOCs in open offshore environments, and the significant distance from the Operational Area to the nearest sensitive air shed (town of Exmouth approximately 51 km away), the potential impacts are expected to be minor and short term.

Water Quality

Water quality would be affected due to hydrocarbon contamination above impact thresholds. These are defined by the EMBA descriptions for each of the entrained and dissolved hydrocarbon fates and their predicted extent. Furthermore, water quality is predicted to have minor long term and/or significant short-term hydrocarbon contamination above background, compared to background water quality.

Marine Sediment Quality

Floating, entrained and dissolved hydrocarbons (at or above the defined thresholds) are predicted to potentially contact shallow, nearshore waters of identified islands and mainland coastlines. Hydrocarbons may accumulate (at or above the ecological threshold) at a range of nearshore receptors. Such hydrocarbon contact may lead to reduced marine sediment quality by several processes, such as adherence to sediment and deposition shores or seabed habitat.

Studies of hydrocarbon concentrations in deep sea sediments in the vicinity of a catastrophic well blowout indicated hydrocarbon from the blowouts can be incorporated into sediments (Romero et al., 2015). Proposed mechanisms for hydrocarbon contamination of sediments include sedimentation of hydrocarbons and direct contact between submerged plumes and the seabed (Romero et al., 2015).

In the event of a major hydrocarbon release at the seabed, modelling indicates that a pressurised release of hydrocarbon would form droplets that would be transported into the water column to the surface (i.e. transported away from the seabed). As a result, the extent of potential impacts to the seabed area at and surrounding the release site would be largely confined to a localised footprint. Marine sediment quality would be reduced as a consequence of hydrocarbon contamination for a small area within the immediate release site for a long to medium term, as hydrocarbons in sediments typically undergo slower weathering and degradation (Diercks et al., 2010; Liu et al., 2012).

There is the potential for floating and entrained hydrocarbons to sink following extensive weathering and adsorption of sediment particles, which may result in the deposition of hydrocarbons to the seabed in areas distant from the release location. Such hydrocarbons are expected to be less toxic due to the weathering process.

Summary of Potential Impacts to Environmental Value(s)

Benthic Fauna Communities

In the event of a major release at the seabed, the stochastic spill model predicted hydrocarbons droplets would be entrained, rapidly transporting them to the sea surface. As a result, the low sensitivity benthic communities associated with the unconsolidated, soft sediment habitat and any epifauna (filter feeders) associated with the Canyon KEFs, and the Continental Slope Demersal Fish Communities KEF, refer to **Section 4.7** within and outside the Operational Area are not expected to have widespread exposure to released hydrocarbons. Impacts are expected to be restricted to a localised area relating to the hydrocarbon plume at the point of release, which would result in a small area of seabed and associated epifauna and infauna exposed to hydrocarbons.

Heterotrophic, filter feeding organisms, such as sponges and gorgonians, have been identified as potentially occurring in the canyon features located within the wider EMBA. In the event of a major hydrocarbon release at the seabed, modelling indicates that a pressurised release of hydrocarbon would form droplets that would be transported into the water column to the surface (i.e. transported away from the seabed). As a result, hydrocarbon exposure to these deep-water filter-feeding communities is unlikely, and exposure at concentrations of ecological consequence is not expected to occur where these heterotrophic communities exist.

Evidence from the Deepwater Horizon spill in the Gulf of Mexico recorded low taxa richness and high nematode/harpacticoid-copepod ratios within 3 km of the release location and moderate impacts up to 17 km away (Montagna et al., 2013). The communities were likely exposed to dispersed hydrocarbons as the response included subsea dispersant application. A loss in benthic biodiversity has been correlated to a decline in deep-water ecosystem functioning (Danovaro et al., 2008). The location of the petroleum activity and the EMBA largely affect continental shelf waters, which are shallower than the Deepwater Horizon spill, and as such may host more diverse infauna communities, although the impacts are considered to be similar. Therefore, a loss of well containment may result in localised but long-term effects on community structure.

Demersal and Pelagic Fish Populations

Fish mortalities are rarely observed to occur as a result of hydrocarbon spills (International Tanker Owners Pollution Federation, 2011b). This has generally been attributed to the possibility that pelagic fish are able to detect and avoid surface waters underneath hydrocarbon spills by swimming into deeper water or away from the affected areas. Fish that have been exposed to dissolved aromatic hydrocarbons are capable of eliminating the toxicants once placed in clean water, so individuals exposed to a spill are likely to recover (King et al., 1996). Where fish mortalities have been recorded, the spills (resulting from the groundings of the tankers Amoco Cadiz in 1978 and the Florida in 1969) have occurred in sheltered bays.

Laboratory studies have shown that adult fish are able to detect hydrocarbons in water at very low concentrations, and large numbers of dead fish have rarely been reported after hydrocarbon spills (Hjermann et al., 2007). This suggests that juvenile and adult fish are capable of avoiding water contaminated with high concentrations of hydrocarbons. However, sub-lethal impacts to adult and juvenile fish may be possible, given long-term exposure (days to weeks) to polycyclic aromatic hydrocarbon (PAH) concentrations (Hjermann et al., 2007), which are typically the most toxic components of hydrocarbons. Light molecular weight aromatic hydrocarbons (i.e. one- and two-ring molecules) are generally soluble in water, which increases bioavailability to gill-breathing organisms such as fish. While modelling of the loss of well containment indicates the potential EMBA for dissolved hydrocarbons is extensive, no time-integrated exposure metrics were modelled; given the oceanographic environment within the wider EMBA, PAH exposures in the order of weeks for pelagic fish are not considered credible.

The effects of exposure to oil on the metabolism of fish appears to vary according to the organs involved, exposure concentrations and route of exposure (waterborne or food intake). Oil reduces the aerobic capacity of fish exposed to aromatics in the water and, to a lesser extent, affects fish consuming contaminated food (Cohen et al., 2005). The liver, a major detoxification organ, appears to be the organ where anaerobic activity is most impacted, probably increasing anaerobic activity to facilitate the elimination of ingested oil from the fish (Cohen et al., 2005).

Fish are perhaps most susceptible to the effects of spilled oil in their early life stages, particularly during egg and planktonic larval stages, which can become entrained in spilled oil. Contact with oil droplets can mechanically damage feeding and breathing apparatus of embryos and larvae (Fodrie and Heck, 2011). The toxic hydrocarbons in water can result in genetic damage, physical deformities and altered developmental timing for larvae and eggs exposed to even low concentrations over prolonged timeframes (days to weeks) (Fodrie and Heck, 2011). More subtle, chronic effects on the life history of fish as a result of exposure in early life stages to hydrocarbons include disruption to complex behaviours such as predator avoidance, reproductive and social behaviour (Hjermann et al., 2007). Prolonged exposure of eggs and larvae to weathered concentrations of hydrocarbons in water has also been shown to cause immunosuppression, and allows expression of viral diseases (Hjermann et al., 2007).

PAHs have also been linked to increased mortality and stunted growth rates of early life history (pre-settlement) of reef fishes, as well as behavioural impacts that may increase predation of post-settlement larvae (Johansen et al., 2017). However, the effect of a hydrocarbon spill on a population of fish in an area with fish larvae and/or eggs, and the extent to which any of the adverse impacts may occur, depends greatly on prevailing oceanographic and ecological conditions at the time of the spill and its contact with fish eggs or larvae.

Summary of Potential Impacts to Environmental Value(s)

The Continental Slope Demersal Fish Communities and the Canyons linking the Cuvier Abyssal Plain and the Cape Range KEF overlap the Operational Area. Species found on the continental slopes of these key ecological features been shown to host high levels of endemism (BMT Oceanica, 2016). Additionally, demersal species are associated with the Ancient Coastline KEF (~0.6 km from the Operational Area).

Mortality and sub lethal effects may impact populations located close to the well blow out and within the EMBA for entrained/dissolved aromatic hydrocarbons (≥ 100 and ≥ 50 ppb, respectively). Additionally, if prey (infauna and epifauna) surrounding the well location and within the EMBA is contaminated, this can result in the absorption of toxic components of the hydrocarbons (PAHs), potentially impacting fish populations that feed on these. These impacts may result in localised medium/long term impacts on demersal fish habitat (e.g. seafloor).

Hydrocarbons above ecological thresholds may subsequently impact populations located near to the release location for the worst-case spill scenario, with lethal impacts not considered likely in this offshore environment.

Protected Places

Receptors

The Australian Marine Parks (AMPs) listed in **Section 4.8** may be affected by a worst-case spill scenario. The AMPs were predicted to potentially be contacted by hydrocarbons in the event of a worst-case spill scenario include Ningaloo AMP, Gascoyne AMP, Montebello AMP, Dampier AMP, Shark Bay AMP, etc.

Impacts

The Gascoyne Marine Park is the closest AMP to the Operational Area (7.7 km) predicted to be contacted by hydrocarbons. Impacts to this AMP are discussed below. Impacts to the natural, cultural, heritage and socio-economic values of the other AMPs predicted to be contacted by hydrocarbons in a worst-case spill scenario are expected to be similar, however, of varying severity and duration due to their varying distances from the Operational Area (see Section 4.8).

Gascoyne Marine Park

The Gascoyne Marine Park comprises an area about 81,766 km², The Marine Park is assigned IUCN category IV and includes three zones assigned under this plan: National Park Zone (II), Habitat Protection Zone (IV) and Multiple Use Zone (VI). The AMP ranges in water depths from less than 15 m up to 6000 m.

The Gascoyne Marine Park is significant because it contains habitats, species and ecological communities associated with the Central Western Shelf Transition, Central Western Transition, and Northwest Province. It overlaps with the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF, Commonwealth waters adjacent to Ningaloo Reef KEF, continental slope demersal fish communities KEF, and the Exmouth Plateau KEF (see 'Key Ecological Features' above for a discussion of impacts to KEFs).

The AMP includes some of the most diverse continental slope habitats in Australia, in particular the continental slope area between North West Cape and the Montebello Trough. Canyons in the Marine Park link the Cuvier Abyssal Plain to the Cape Range Peninsula and are important for their role in sustaining the nutrient conditions that support the high diversity of Ningaloo Reef. The specific values of the AMP and associated impacts are summarised here.

- **Natural values** – The AMP includes diverse benthic and pelagic fish communities and ancient coastline thought to be an important seafloor feature (KEF) and a migratory pathway for humpback whales (BIAs). The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. Biologically important areas within the Marine Park include. BIAs within the AMP include breeding habitat for seabirds, internesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat and migratory pathway for pygmy blue whales.
- **Cultural values** – There is limited information about the cultural significance of this AMP, however, it is noted that sea country is valued for Indigenous cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their sea country for tens of thousands of years. Potential impacts to cultural values of the AMP will closely tie in with the impacts to the natural values of the Marine Park, as addressed above and below; and range from moderate mid-term potential impacts to major long-term potential impacts.
- **Heritage values** – There are no World, National or Commonwealth heritage listings within the AMP. However, the Ningaloo Coast World Heritage Property, the Ningaloo Marine Area (Commonwealth waters), and the Ningaloo Coast National Heritage areas are located adjacent to the Gascoyne AMP. Five historic shipwrecks are located within the Marine Park. Impacts to shipwrecks are discussed below under 'Cultural Heritage'.
- **Social and economic values** – Commercial fishing, mining and recreation are important activities in the AMP. These activities contribute to the wellbeing of regional communities and the prosperity of the nation. A worst-case hydrocarbon spill scenario has the potential to result in impacts to these AMPs that range from moderate, medium-term to major, long-term, with the consequence severity dependent on the actual timing, duration and extent of a spill.

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Summary of Potential Impacts to Environmental Value(s)

Key Ecological Features

KEFs potentially impacted by the hydrocarbon spill from a loss of well containment event are provided in **Section 4.7**. Although these KEFs are primarily defined by seabed geomorphological features, they are described to identify the potential for increased biological productivity and, therefore, ecological significance.

The consequences of a hydrocarbon spill from a loss of well containment event are predicted to result in moderate impacts to values of the KEFs affected (for the values of each KEF, see **Section 4.7**).

Potential impacts include contamination of sediments, impacts to benthic sediment fauna and associated impacts to demersal fish populations, and reduced biodiversity as described above and below. Most of the KEFs within the EMBA have relatively broad-scale distributions and are unlikely to be significantly impacted. KEFs within the EMBA that are not associated with broad-scale distributions are not expected to be impacted by floating hydrocarbons and contact with entrained and dissolved fractions is predicted to be very low/no contact. Hence, the environmental values of these KEFs are not expected to be impacted.

Protected Species

Cetaceans

A range of cetaceans were identified as potentially occurring within the Operational Area and wider EMBA (**Section 4.6.3**). In the event of a loss of well containment, surface, entrained and dissolved hydrocarbons exceeding environmental impact threshold concentrations may drift across habitat for oceanic cetacean species and the migratory routes and BIAs of cetaceans considered to be MNES, including humpback whales, southern right whales, sperm whales, pygmy blue whales (north- and southbound migrations), Australian snubfin dolphins, Indo-Pacific humpback dolphin and Indo-Pacific/spotted bottlenose dolphins.

Cetaceans that have direct physical contact with surface, entrained or dissolved aromatic hydrocarbons may suffer surface fouling, ingestion of hydrocarbons (from prey, water and sediments), aspiration of oily water or droplets, and inhalation of toxic vapours (Deepwater Horizon Natural Resource Damage Assessment Trustees, 2016). This may result in the irritation of sensitive membranes such as the eyes, mouth, digestive and respiratory tracts and organs, impairment of the immune system, neurological damage (Helm et al., 2015), reproductive failure, adverse health effects (e.g. lung disease, poor body condition) and potentially mortality (Deepwater Horizon Natural Resource Damage Assessment Trustees, 2016).

Given the relatively low volatile fractions of the hydrocarbons, the area where potential impacts from inhalation may occur is expected to be localised around the release location. In a review of cetacean observations in relation to large scale hydrocarbon spills, it was concluded that exposure to oil from the Deepwater Horizon resulted in increased mortality to cetaceans in the Gulf of Mexico (Deepwater Horizon Natural Resource Damage Assessment Trustees, 2016). Long-term population level impacts to killer whales have been linked to the Exxon Valdez tanker spill (Matkin et al., 2008). Geraci (1988) has identified behavioural disturbance (i.e. avoiding spilled hydrocarbons) in some instances for several species of cetacean, suggesting that cetaceans have the ability to detect and avoid surface slicks.

However, observations during spills have recorded larger whales (both mysticetes and odontocetes) and smaller delphinids travelling through and feeding in oil slicks. During the Deepwater Horizon spill, cetaceans were routinely seen swimming in surface slicks offshore (and nearshore) (Aichinger Dias et al., 2017).

Cetacean populations that are resident within the EMBA may be susceptible to impacts from spilled hydrocarbons if they interact with an area affected by a spill. Such species are more likely to occupy coastal waters (refer to the Mainland and Islands section below for additional information). Suitable habitat for oceanic toothed whales (e.g. sperm whales) and dolphins (e.g. spinner dolphin) is broadly distributed throughout the region and as such, however impacts are unlikely to affect an entire population. Other species identified in **Section 4.6.3** may also have possible transient interactions with the EMBA.

Pygmy Blue Whale and Humpback Whale

Pygmy blue whales and humpback whales are known to migrate seasonally through the wider EMBA, and the migration BIAs in the region for both species overlap the Operational Area. A major spill in May to November would coincide with humpback whale migration through the waters off the Pilbara, North West Cape and Shark Bay (**Figure 4-8**). A major spill in April–August or October–January would coincide with pygmy blue whale migration (**Figure 4-7**). Both pygmy blue and humpback whales are baleen whales, so are most likely to be significantly impacted by toxic effects when feeding. However, feeding during migrations is low level and opportunistic, with most feeding for both species in the Southern Ocean.

The entrained hydrocarbon EMBA includes pygmy blue whale foraging BIAs (closest being the Ningaloo Coast (approximately 17 km from Operational Area), humpback whale resting BIA at Exmouth Gulf (approximately 23 km away), southern right whale calving BIA at Perth coast (approximately 1108 km away), and sperm whale foraging BIA at Perth Canyon (approximately 1120 km away). Furthermore, the foraging, breeding and calving BIAs for the Australian snubfin dolphin, Indo-Pacific humpback dolphin and Indo-Pacific/spotted bottlenose dolphins (closest being Roebuck Bay for all, approximately 910 km) were identified within the entrained hydrocarbon EMBA. Fresh hydrocarbons (i.e. typically in the vicinity of the release location) may have a higher potential to cause toxic effects when ingested, while weathered hydrocarbons are considered to be less likely to result in toxic effects. As such, the

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Summary of Potential Impacts to Environmental Value(s)

risk of ingestion of hydrocarbons is low. Migrations of both pygmy blue whales and humpback whales are protracted through time and space (i.e. the whole population will not be within the EMBA), and as such, a spill from the loss of well integrity is unlikely to affect an entire population). The humpback whale resting area in Exmouth Gulf and the calving area in Camden Sound are not predicted to be contacted by surface, entrained or dissolved hydrocarbons above threshold concentrations.

A loss of well containment resulting in a well blowout could disrupt a significant portion of the humpback or pygmy blue whale populations. Such disruption could include behavioural impacts (e.g. avoidance of impacted areas), sub-lethal biological effects (e.g. skin irritation, irritation from ingestion or inhalation, reproductive failure) and, in rare circumstances, death. However, such disruptions or impacts are not predicted to impact the overall population viability of cetaceans, given the global distribution of these species.

Physical contact with hydrocarbons to these species is likely to have biological consequences, however, it is unlikely to affect an entire population and not predicted to impact on the overall population viability. Given cetaceans maintain thick skin and blubber, external exposure to hydrocarbons may result in irritation to skin and eyes. Entrained hydrocarbons may also be ingested, particularly by baleen whales which feed by filtering large volumes of water.

Dugongs

There are no BIAs or known areas of aggregation in the offshore waters of the EMBA for the dugong.

Summary

A worst-case hydrocarbon spill scenario has the potential to result in moderate, medium-term impacts to offshore cetacean species, with consequence severity dependent on the actual timing, duration and extent of a spill in relation to species' migratory movements and distributions.

Pinnipeds

Australian sea lions are found on and around the Arolohos Islands, distant from the Operational Area, but within the wider EMBA. Given the considerable distance from the Operational Area to these receptors, and the time for floating and entrained hydrocarbons to contact (32 and 25 days respectively), entrained and floating hydrocarbons that do reach this area are likely to be weathered. There is the potential for sea lions to interact with floating and stranded hydrocarbons. This may result in diminished ability to thermoregulate due to the loss of insulation, potentially resulting in mortality. Potential impacts are expected to be minor and temporary at a population scale.

Marine Turtles

Adult sea turtles exhibit no avoidance behaviour when they encounter hydrocarbon spills (National Oceanic and Atmospheric Administration, 2010). Contact with surface slicks, or entrained hydrocarbon, can therefore result in hydrocarbon adherence to body surfaces (Gagnon and Rawson, 2010) causing irritation of mucous membranes in the nose, throat and eyes, leading to inflammation and infection (National Oceanic and Atmospheric Administration, 2010). Oiling can also irritate and injure skin, which is most evident on pliable areas such as the neck and flippers (Lutcavage et al., 1995). A stress response associated with this exposure pathway includes an increase in the production of white blood cells, and even a short exposure to hydrocarbons may affect the functioning of their salt gland (Lutcavage et al., 1995).

Hydrocarbons in surface waters may also impact turtles when they surface to breathe and inhale toxic vapours. Their breathing pattern, involving large 'tidal' volumes and rapid inhalation before diving, results in direct exposure to petroleum vapours which are the most toxic component of the hydrocarbon spill (Milton and Lutz, 2003). This can lead to lung damage and congestion, interstitial emphysema, inhalant pneumonia and neurological impairment (National Oceanic and Atmospheric Administration, 2010). Contact with entrained hydrocarbons can result in hydrocarbon adherence to body surfaces, causing irritation of mucous membranes in the nose, throat and eyes and leading to inflammation and infection (Gagnon and Rawson, 2010).

Due to the absence of potential nesting habitat and location offshore, the Operational Area is unlikely to represent important habitat for marine turtles.

It is acknowledged that foraging marine turtles may be present foraging within the EMBA, and the EMBA would overlap with the BIAs identified in **Section 4.6.2** and **Table 4-7**, in particular the inter-nesting BIAs and critical habitats for flatback turtles which extend for ~80 km from known nesting locations. It is noted by Woodside that the Petroleum Activities Program will overlap nesting seasons for marine turtles in the region.

In the event of a well blowout, there is potential that surface, entrained and dissolved hydrocarbons exceeding threshold concentrations will be present in offshore waters extending up to 950 km, 1550 km and 1250 km, respectively, from the release site. Therefore, a hydrocarbon spill may disrupt a portion of the population; however, there is no anticipated threat to overall population viability.

Potential impacts to nesting and inter-nesting marine turtles are discussed in the Mainland and Islands (nearshore) impacts discussion.

Summary

In the event of a loss of well containment, there is potential that surface, entrained and dissolved hydrocarbons exceeding environmental impact threshold concentrations will be present in offshore waters. Therefore, a hydrocarbon

Summary of Potential Impacts to Environmental Value(s)

spill may disrupt a portion of marine turtle populations for the green, flatback, hawksbill, loggerhead and/or leatherback turtle. However, there is considered to be no threat to overall population viability given the non-persistent nature of predicted hydrocarbons.

Seasnakes

Impacts to seasnakes from direct contact with hydrocarbons are likely to result in similar physical effects to those recorded for marine turtles. They may include potential damage to the dermis and irritation to mucus membranes of the eyes, nose and throat (International Tanker Owners Pollution Federation, 2011a). They may also be impacted when they return to the surface to breathe and inhale the toxic vapours associated with the hydrocarbons, resulting in damage to their respiratory system.

In general, seasnakes frequent the waters of the continental shelf area around offshore islands and potentially submerged shoals (water depths <100 m; see Submerged Shoals below). It is acknowledged that seasnakes may be present in the Operational Area and are present in the wider EMBA; however, their abundance is not expected to be high in the deep water and offshore environment. Therefore, a hydrocarbon spill may disrupt a portion of seasnake populations, but there is no threat to overall population viability given their widespread distribution in tropical waters.

Sharks and Rays

Hydrocarbon contact may affect whale sharks through ingestion (entrained/dissolved hydrocarbons), particularly if feeding. Whale sharks may transit offshore open waters when migrating to and from Ningaloo Reef, where they aggregate for feeding from March to July (see Mainland and Islands (nearshore waters) below).

Whale sharks may also carry out opportunistic feeding in offshore waters and the Operational Area. The EMBA overlaps the whale shark migration and foraging BIA identified in **Section 4.6.1** and **Table 4-4**, within which whale sharks are seasonally present between April and October. Therefore, individual whale sharks that have direct contact with hydrocarbons within the spill-affected area may be impacted, but the consequences to migratory whale shark populations are likely to be minor. White sharks have foraging BIAs within the South-West region which may be impacted by hydrocarbon EMBA.

Impacts to sharks and rays may occur through direct contact with hydrocarbons and contaminate the tissues and internal organs, either through direct contact or via the food chain (consumption of prey). As gill breathing organisms, sharks and rays may be vulnerable to toxic effects of dissolved hydrocarbons (entering the body via the gills) and entrained hydrocarbons (coating of the gills inhibiting gas exchange). In the offshore environment, it is probable that pelagic shark species are able to detect and avoid surface waters underneath hydrocarbon spills by swimming into deeper water or away from the affected areas. Therefore, any impact on sharks and rays is predicted to be minor and only a temporary disruption.

Seabirds

Offshore waters are potential foraging grounds for seabirds associated with the coastal roosting and nesting habitat (e.g. Ningaloo, Muiron Islands and the Barrow/Montebello/Lowendal Island Group). There are confirmed foraging grounds off Ningaloo and the Barrow/Montebello/Lowendal Island Group. A BIA for the wedge-tailed shearwater (peak use August–April) overlaps with the Operational Area.

There are also a number of BIAs for seabirds and migratory shorebirds that overlap with the wider EMBA, as provided in **Section 4.6.4** and **Table 4-11**.

Seabirds and migratory birds are particularly vulnerable to contact with floating hydrocarbons, which may mat feathers. This may lead to hypothermia from loss of insulation and ingestion of hydrocarbons when preening to remove hydrocarbons; both impacts may result in mortality (Hassan and Javed, 2011). Seabirds generally do not exhibit avoidance behaviour to floating hydrocarbons. Physical contact of seabirds with surface slicks is by several exposure pathways, primarily immersion, ingestion and inhalation. Such contact with hydrocarbons may result in plumage fouling and hypothermia (loss of thermoregulation), decreased buoyancy and potential to drown, inability to fly or feed, anaemia, pneumonia and irritation of eyes, skin, nasal cavities and mouths (Australian Maritime Safety Authority, 2013; International Petroleum Industry Environmental Conservation Association, 2004), and result in mortality due to oiling of feathers or the ingestion of hydrocarbons. Longer term exposure effects that may potentially impact seabird populations include a loss of reproductive success (loss of breeding adults) and malformation of eggs or chicks (Australian Maritime Safety Authority, 2013).

A hydrocarbon spill may result in surface slicks disrupting a significant portion of the foraging habitat for seabirds, including BIAs identified for foraging birds which are generally associated with breeding habitat, and seabirds foraging in waters in proximity to these sites. Seabird distributions are typically concentrated around islands, so hydrocarbons in proximity to nesting/roosting areas may result in increased numbers of seabirds being impacted, with many species of seabirds, such as the wedge-tailed shearwater and species of tern, forage relatively close to breeding islands/colonies. This may lead to impacts upon foraging seabirds in the offshore environment; however, this is not expected to result in a threat to the overall population viability, given the relatively broad distributions of the seabird species.

Summary of Potential Impacts to Environmental Value(s)

Nearshore Waters (Mainland and Islands)

Marine Sediment Quality

Entrained and dissolved hydrocarbons (at or above the defined thresholds) are predicted to potentially contact shallow, nearshore waters of identified islands and mainland coastlines. Shoreline hydrocarbons may also reach a number of islands. Such hydrocarbon contact may lead to reduced marine sediment quality by several processes, such as adherence to sediment and deposition shores or seabed habitat.

Protected Species

Cetaceans

The full list of EPBC listed cetacean species identified by the PMST search with potential to occur within the EMBA), coastal populations of small cetaceans are known to reside or frequent nearshore waters, including the Ningaloo Coast, Muiron Islands, Montebello/Barrow/Lowendal Islands Group, Pilbara Southern and Northern Island Groups, Shark Bay, and a number of other nearshore and coastal locations including coastal areas of the Indonesian archipelago which may be potentially impacted by surface, entrained and dissolved hydrocarbons exceeding threshold concentrations in the event of a loss of well containment.

The predicted EMBA for surface, entrained and dissolved hydrocarbons extends past Exmouth Gulf and Shark Bay. These areas are known humpback whale aggregation areas during their annual southern migration (September to December); therefore, humpbacks moving into these aggregation areas may be exposed to hydrocarbons above thresholds levels. However, surface, entrained and dissolved hydrocarbons concentrations above thresholds are not expected within Exmouth Gulf itself. No floating hydrocarbon contact at or above threshold concentrations is expected for Camden Sound, an important calving area for humpback whales.

The potential impacts of exposure are as discussed previously in Offshore – Cetaceans. However, nearshore populations of cetaceans are known to exhibit site fidelity and are often resident populations. Therefore, avoidance behaviour may have greater impacts to population functioning.

Nearshore dolphin species (e.g. spotted bottlenose dolphins) may exhibit higher site fidelity than oceanic species, although Geraci (1988) observed relatively little impacts beyond behavioural disturbance. Resident cetacean populations (e.g. numerous dolphin species) known to inhabit nearshore waters with the EMBA for surface hydrocarbons, such as the Laut Sawu Marine National Park, may experience impacts on feeding habitats that could disrupt a portion of the local population, but is not predicted to result in impacts on overall population viability of either dugongs or resident/coastal cetaceans.

A hydrocarbon spill may disrupt a portion of a migratory cetacean population in Indonesian waters, including blue whale and sperm whale populations. Such disruption could include behavioural impacts (e.g. avoidance of impacted areas), sub-lethal biological effects (e.g. skin irritation, irritation from ingestion or inhalation) and, in rare circumstances, death. However, such disruptions or impacts are not predicted to impact on the overall population viability of migratory cetaceans within Indonesian waters.

Dugongs

Potential environment impacts may include the potential for dugongs to ingest hydrocarbons when feeding on oiled seagrass stands, or indirect impacts to dugongs due to loss of this food source due to dieback in worse affected areas. Furthermore, nearshore populations of dugongs are known to exhibit site fidelity and are often resident populations. Therefore, avoidance behaviour may have greater impacts to population functioning.

Hydrocarbon spill modelling indicates that surface hydrocarbons exceeding threshold concentrations may extend into the Lesser Sunda and Southern Java ecoregions of Indonesia, potentially exposing migratory and resident dugongs.

Summary

A hydrocarbon spill may have an impact on feeding habitats and disrupt a significant portion of the local population, but it is not predicted to result in impacts on overall population viability of either dugongs or coastal cetaceans.

Pinnipeds

Australian sea lions are found in the Houtman Abrolhos Islands Nature Reserve and Ngari Capes Marine Park, distant from the Operational Area but within the wider EMBA. Given the considerable distance from the Operational Area to these receptors, and the lengthy time for surface and entrained hydrocarbons to contact (minimum 25 days for the Abrolhos Islands), surface or entrained hydrocarbons that do reach this area are likely to be weathered.

Hydrocarbons accumulating on shorelines at haul-out locations may result in oiling of sea lions. Oiling may inhibit the ability for sea lions to thermoregulate, potentially resulting in mortality through hypothermia. Oiled sea lions may also ingest hydrocarbons when attempting to clean themselves, potentially resulting in toxic effects.

Summary of Potential Impacts to Environmental Value(s)

Marine Turtles

Several marine turtle species utilise nearshore waters and shorelines for foraging and breeding (including inter-nesting), with significant nesting beaches along the mainland coast and islands in potentially impacted locations such as the Ningaloo Coast, Muiron Islands, Montebello/Barrow/Lowendal Islands Group, Pilbara Islands (Northern and Southern Island Groups), Shark Bay, Scott Reef, Ashmore Reef and the southern Indonesian archipelago. There are distinct breeding seasons as detailed in **Section 4.6.2**. The nearshore waters of these turtle habitat areas may be exposed to surface, entrained or dissolved hydrocarbons exceeding threshold concentrations, and accumulated hydrocarbons above threshold concentrations.

The behaviour and biology of marine turtles makes these species relatively vulnerable to population-scale impacts compared to other fauna, such as dugongs. All species of marine turtles exhibit high nesting site fidelity by females, with gene flow between populations primarily mediated by movements of male turtles (FitzSimmons et al., 1997). Additionally, marine turtles rely on nesting beaches to reproduce, which makes them vulnerable to impacts from spilled hydrocarbon accumulations on shorelines through oiling of nesting females and emergent hatchlings, and disturbance of nests from spill response activities (Lauritsen et al., 2017). A spill during nesting and hatching season poses an increased risk to marine turtle populations.

A number of BIAs have been identified for marine turtles, including aggregation, nesting, inter-nesting, mating and foraging areas. A hydrocarbon spill above impact thresholds in these areas may result in impacts to biologically important behaviours. During the breeding season, turtle aggregations near nesting beaches within the wider EMBA are most vulnerable due to greater turtle densities, and potential impacts may occur at the population level of some marine turtle species.

The islands within the Lesser Sunda and Southern Java Ecoregions provide habitat for marine turtles, with the Laut Sawu Marine National Park in particular identified as providing habitat for five species of marine turtles – green, leatherback, olive ridley, loggerhead and flat back turtles. The potential impacts to marine turtles in Indonesian waters contacted by the surface hydrocarbon EMBA and those contacted by accumulated hydrocarbons on shorelines are likely to be similar to those described above for Offshore – Marine Turtles and Mainland and Islands (nearshore waters) – Marine Turtles.

The potential impacts of exposure are as discussed previously in Offshore – Marine Turtles. In the nearshore environment, turtles can ingest hydrocarbons when feeding (e.g. on oiled seagrass stands/macroalgae), or can be indirectly affected by loss of food source (e.g. seagrass due to dieback from hydrocarbon exposure) (Gagnon and Rawson, 2010). In addition, hydrocarbon exposure can impact turtles during the breeding season at nesting beaches. Contact with gravid adult females or hatchlings may occur on nesting beaches (accumulated hydrocarbons) or in nearshore waters (entrained hydrocarbons) where hydrocarbons are predicted to make shoreline contact.

Results from studies of nesting beaches subject to extensive oil pollution from the Deepwater Horizon spill indicated a significant reduction (approximately 44%) in turtle nest density during the nesting season immediately following the spill (Lauritsen et al., 2017). Lauritsen et al. (2017) partially attributed this reduction to direct (e.g. direct mortality of adults due to oiling or toxicity) and indirect (e.g. shoreline disturbance from response activities) impacts from the spill. There was a significant increase in nesting density in the years immediately following the spill, with nesting density returning to levels comparable to pre-spill densities within two nesting seasons (Lauritsen et al., 2017). This indicates that adult female turtles that avoided mortality may have deferred nesting during the spill until subsequent years. The significant decline in nesting density observed following the Deepwater Horizon spill represents a decline of approximately 36% of reproductive output of the turtle population in the study area (Lauritsen et al., 2017); given turtles may take over a decade to reach sexual maturity, the effects of such a reduction in reproductive output may take over a decade to appear in nesting related metrics (which are commonly used to monitor turtle populations).

Based on the deterministic modelling results and the potential for impact and recovery of turtles, a worst-case hydrocarbon spill from a loss of well containment may result in reduced turtle numbers and nesting density; however, it would not be expected to result in elimination of a population. Impacts and subsequent recovery may take decades to occur. To date, no oil spills have been demonstrated to have resulted in elimination of a turtle population at any scale (Yender and Mearns, 2010). Disastrous spills impacting important turtle habitat (including nesting areas) have not been shown to eliminate turtle populations, although direct and indirect impacts have been documented (e.g. Lauritsen et al., 2017; McDonald et al., 2017; Stacy et al., 2017; Vander Zanden et al., 2016). Turtle populations have been shown to be able to recover, even when populations have been reduced to small sizes after experiencing significant declines (Mazaris et al., 2017). As such, population scale impacts to marine turtles from a worst-case loss of well containment would be expected to exhibit recovery, although may take several decades to reach pre-impact population levels due to the relatively long lifespan and late sexual maturity of marine turtle species.

Sea snakes

Impacts to sea snakes for the mainland and island nearshore waters from direct contact with hydrocarbons may occur and may include potential damage to the dermis and irritation to mucous membranes of the eyes, nose and throat (International Tanker Owners Pollution Federation, 2011a).

Summary of Potential Impacts to Environmental Value(s)

Fish

Fish (and other commercially targeted taxa) in their early life stages (eggs, larvae and juveniles) are at their most vulnerable to lethal and sub-lethal impacts from exposure to hydrocarbons, particularly if a spill coincides with spawning seasons or reaches nursery areas close to the shore (e.g. seagrass and mangroves) (International Tanker Owners Pollution Federation, 2011a). Fish spawning (including for commercially targeted species such as snapper and mackerel) occurs in nearshore waters at certain times of the year, and nearshore waters are also inhabited by higher numbers of juvenile fishes than offshore waters.

Modelling indicated that, in the unlikely event of a major spill, there is potential for entrained or dissolved hydrocarbons to occur in the surface water layers above threshold concentrations in nearshore waters (e.g. Ningaloo Coast, the Muiron Islands, Montebello/Barrow/Lowendal Islands Group, Pilbara Southern and Northern Islands Groups, Shark Bay and the Abrolhos Islands). This has the potential to result in lethal and sublethal impacts to a portion of fish larvae in areas contaminated above impact thresholds, depending on concentration and duration of exposure and the inherent toxicity of the hydrocarbon. Although there is the potential for spawning/nursery habitat to be impacted (e.g. mangroves and seagrass beds, discussed above), losses of fish larvae in worst affected areas are unlikely to be of major consequence to fish stocks compared with significantly larger losses through natural predation, and the likelihood that most nearshore areas would be exposed is low (i.e. not all areas in the region would be affected). This is supported by a recent study in the Gulf of Mexico which used juvenile abundance data, from shallow-water seagrass meadows, as indices of the acute, population-level responses of young fishes to the Deepwater Horizon spill. Results indicated that there was no change to the juvenile cohorts following the Deepwater Horizon spill. Additionally, there were no significant post-spill shifts in community composition and structure, nor were there changes in biodiversity measures (Fodrie and Heck, 2011). Any impacts to spawning and nursery areas are expected to be minor and short term, as would flow-on effects to adult fish stocks into which larvae are recruited.

Sharks and Rays

Whale sharks and manta rays are known to frequent the Ningaloo Reef system and the Muiron Islands (forming feeding aggregations in late summer/autumn). The Indonesian islands of Komodo and Nusa Penida, Bali are also known to host significant manta ray populations.

Whale sharks and manta rays generally transit along the nearshore coastline and are vulnerable to surface, entrained and dissolved aromatic hydrocarbon spill impacts, with both taxa having similar modes of feeding. Whale sharks are versatile feeders, filtering large amounts of water over their gills, catching planktonic and nektonic organisms (Jarman and Wilson, 2004). Whale sharks at Ningaloo Reef have been observed using two different feeding strategies, including passive sub-surface ram-feeding and active surface feeding (Taylor, 2007). Passive feeding consists of swimming slowly at the surface with the mouth wide open. During active feeding, sharks swim high in the water with the upper part of the body above the surface with the mouth partially open (Taylor, 2007). These feeding methods would result in the potential for individuals that are present in worst affected spill areas to ingest potentially toxic amounts of surface, entrained or dissolved aromatic hydrocarbons into their body. Large amounts of ingested hydrocarbons may affect their endocrine and immune system in the longer term. The presence of hydrocarbons may displace whale sharks from the area where they normally feed and rest, and potentially disrupt migration and aggregations to these areas in subsequent seasons. Whale sharks may also be affected indirectly by surface, entrained or dissolved aromatic hydrocarbons through the contamination of their prey. The preferred food of whale sharks are fish eggs and phytoplankton which are abundant in the coastal waters of Ningaloo Reef in late summer/autumn, driving the annual arrival and aggregation of whale sharks in this area. If the spill event were to occur during the spawning season, this important food supply (in worse spill affected areas of the reef) may be diminished or contaminated. The contamination of their food supply and the subsequent ingestion of this prey by the whale shark may also result in long term impacts as a result of bioaccumulation.

There is the potential for other resident shark and ray (e.g. sawfish species identified in **Section 4.6.1**) populations to be impacted directly from hydrocarbon contact or indirectly through contaminated prey or loss of habitat. However, it is probable that shark species will move away from the affected areas.

Shark populations displaced or no longer supported due to habitat loss would be expected to redistribute to other locations. Therefore, the consequences to resident shark and ray populations (if present) from loss of habitat, may result in a disruption to a significant portion of the population; however, it is not expected to impact the overall viability of the population.

Summary of Potential Impacts to Environmental Value(s)

Seabirds

There is the potential for seabirds, and resident, non-breeding overwintering shorebirds that use the nearshore waters for foraging and resting, to be exposed to surface, entrained and dissolved hydrocarbons. This could result in lethal or sublethal effects. Although breeding oceanic seabird species can travel long distances to forage in offshore waters, most breeding seabirds tend to forage in waters near their breeding colony. This results in relatively higher seabird densities in these areas during the breeding season, making these areas particularly sensitive in the event of a spill.

Pathways of biological exposure that can result in impact may occur through ingestion of contaminated fish (nearshore waters) or invertebrates (intertidal foraging grounds such as beaches, mudflats and reefs). Ingestion can also lead to internal injury to sensitive membranes and organs (International Petroleum Industry Environmental Conservation Association, 2004). Whether the toxicity of ingested hydrocarbons is lethal or sublethal will depend on the weathering stage and its inherent toxicity.

Exposure to hydrocarbons may have longer term effects, with impacts to population numbers due to decline in reproductive performance and malformed eggs and chicks, affecting survivorship and loss of adult birds.

Important areas for foraging seabirds and migratory shorebirds are identified in **Section 4.6.4**. Suitable habitat or seabirds and shorebirds are broadly distributed along the mainland and nearshore island coasts within the EMBA. Of note are important nesting and resting areas, including (refer to **Section 4.6.4** for additional information, including BIAs within the wider EMBA):

- Muiron Islands
- Ningaloo Coast
- North West Cape
- Montebello/Barrow/Lowendal Islands Group (including known nesting habitats on Boodie, Double and Middle Islands)
- Pilbara Islands North and South Island Group
- Shark Bay
- Abrolhos Islands
- Ashmore Reef.

Therefore, a hydrocarbon spill may impact key feeding habitat and disrupt a significant portion of the habitat; however, this is not expected to threaten the overall population viability of seabirds or shorebirds.

Submerged Shoals and Banks

Protected Species

Marine Turtles

There is the potential for marine turtles to be present at submerged shoals such as Ningaloo Reef, Exmouth Reef Montebello Shoals, Barrow Island and Rowley Shoals. These shoals and banks may, at times, be foraging habitat for marine turtles, given the coral and filter feeding biota associated with these areas. Satellite tracking of individual green turtles in the nearshore environment of the NWS did not indicate any overlap of the tracked post-nesting migratory routes and the Operational Area. It is, however, acknowledged that individual marine turtles may be within the surrounding areas. Therefore, a hydrocarbon spill may have a minor disruption to a portion of the population (see offshore description above); however, there is no threat to overall population viability.

Seasnakes

There is the potential for seasnakes to be present at submerged shoals such as Exmouth Reef and Barrow Islands Reefs and Shoals. The potential impacts of exposure are as discussed previously in Offshore – Seasnakes.

A hydrocarbon spill may disrupt a portion of the population but there is no threat to overall population viability. Seasnake species in Australia generally show strong habitat preferences (Heatwole and Cogger, 1993); species that have preferred habitats associated with submerged shoals and oceanic atolls may be disproportionately affected by a hydrocarbon spill affecting such habitat.

Summary of Potential Impacts to Environmental Value(s)

Sharks and Rays

There is the potential for resident shark and ray populations to be impacted directly from hydrocarbon contact, or indirectly through contaminated prey or loss of habitat. Spill model results indicate potential impacts to the benthic communities of Barrow Islands Reefs and Shoals and Ningaloo Reef (modelling showed contact by entrained or dissolved hydrocarbons above threshold concentrations).

Pelagic sharks and rays are expected to move away from areas affected by spilled hydrocarbons. Impacts to such species are expected to be limited to behavioural responses/displacement. Shark and ray species that have associations with submerged shoals and oceanic atolls may not move in response to such habitat being contacted by spilled hydrocarbons. Such species may be more susceptible to a reduction in habitat quality resulting from a hydrocarbon spill. Impacts to sharks and rays are likely to be localised, as they are comparable to other Australian reefs and the NWMR submerged shoals and banks. It is expected that there will be no impacts at the population level.

All Settings

Coral Reefs

Receptors

The quantitative spill risk assessment and EMBA indicate there would be potential for coral reef habitat to be exposed to surface, dissolved and entrained hydrocarbons. There would be potential for surface, entrained and dissolved hydrocarbons above threshold concentrations to reach reef habitat along the Ningaloo coast and at identified offshore islands such as the Muiron Islands, Montebello/Barrow/Lowendal Islands Group, Pilbara Southern Islands Group, Shark Bay, Abrolhos Islands, Ashmore Reef and southern Indonesian islands.

Impacts

The shallow coral habitats are most vulnerable to hydrocarbon coating by direct contact with surface slicks during periods when corals are tidally-exposed at spring low tides. Water soluble hydrocarbon fractions associated with surface slicks are also known to cause high coral mortality via direct physical contact of hydrocarbon droplets to sensitive coral species (such as the branching coral species) (Shigenaka, 2001). The duration of surface slick contact with the reef flat may be reduced, as the slick will likely be lifted off the reef by the flooding tide; however, exposure will be prolonged where hydrocarbons adhere. There is significant potential for lethal impacts due to the physical hydrocarbon coating of sessile benthos, with likely significant mortality of corals (adults, juveniles and established recruits) at the small spill affected areas. This particularly applies to branching corals, which are reported to be more sensitive than massive corals (Shigenaka, 2001).

Exposure to entrained hydrocarbons/dissolved aromatic hydrocarbons (≥ 100 and ≥ 50 ppb, respectively) has the potential to result in lethal or sublethal toxic effects to corals and other sensitive sessile benthos within the upper water column, including upper reef slopes (subtidal corals), reef flat (intertidal corals) and lagoonal (back reef) coral communities (with reference to Ningaloo Coast). Mortality in a number of coral species is possible, and this would result in the reduction of coral cover and change in the composition of coral communities. Sub-lethal effects to corals may include polyp retraction, changes in feeding, bleaching (loss of zooxanthellae), increased mucous production resulting in reduced growth rates, and impaired reproduction (Negri and Heyward, 2000). This could result in impacts to the shallow water fringing coral communities/reefs of the offshore islands (e.g. Muiron Islands, Barrow/Montebello/Lowendal Islands, Pilbara Southern and Northern Island Groups and Abrolhos Islands) and also the mainland coast (e.g. Ningaloo Coast and Shark Bay).

With reference to Ningaloo Reef, wave-induced water circulation flushes the lagoon and may promote removal of entrained and dissolved hydrocarbons from this particular reef habitat. Under typical conditions, breaking waves on the reef crest induce a rise in water level in the lagoon, creating a pressure gradient that drives water in a strong outward flow through channels. These channels are across as much as 15% of the length of Ningaloo Reef (Taylor and Pearce, 1999).

Shoreline Accumulation

As mentioned, shoreline accumulation was modelled to occur at a number of receptors. Shallow coral habitats (i.e. nearshore and intertidal waters) are most vulnerable to hydrocarbons through coating by direct contact with surface slicks during periods when corals are tidally-exposed at spring low tides. Water soluble hydrocarbon fractions associated with surface slicks are known to cause high coral mortality (Shigenaka, 2001) via direct physical contact of hydrocarbon droplets to sensitive coral species (such as the branching coral species). There is, therefore, potential for lethal impacts due to the physical hydrocarbon coating of sessile benthos by entrained hydrocarbons, with likely significant mortality of corals (adults, juveniles and established recruits) at the small spill affected areas. These impacts are particularly applicable to branching corals which are reported to be more sensitive than massive corals (Shigenaka, 2001).

Recruitment/Spawning

In the unlikely event of a spill occurring at the time of coral spawning at potentially affected coral locations, or in the general peak period of biological productivity, there is the potential for a significant reduction in successful fertilisation and coral larval survival, due to the sensitivity of coral early life stages to hydrocarbons (Negri and Heyward, 2000). Such impacts are likely to result in the failure of recruitment and settlement of new population cohorts. In addition,

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Summary of Potential Impacts to Environmental Value(s)

some non-coral species may be affected via direct contact with entrained and dissolved aromatic hydrocarbons, resulting in sub-lethal impacts and in some cases mortality. This is with particular reference to the early life-stages of coral reef animals (reef attached fishes and reef invertebrates), which can be relatively sensitive to hydrocarbon exposure. Coral reef fish are site-attached, have small home ranges, and as reef residents they are at higher risk from hydrocarbon exposure than non-resident, more wide-ranging fish species. The exact impact on resident coral communities (which may include fringing reefs of the offshore islands and/or the Ningaloo Reef system) will be entirely dependent on actual hydrocarbon concentration, duration of exposure and water depth of the affected communities.

Over the worst affected sections of reef habitat, coral community live cover, structure and composition is predicted to reduce, manifested by loss of corals and associated sessile biota. Recovery of these impacted reef areas typically relies on coral larvae from neighbouring coral communities that have either not been affected or only partially impacted. For example, there is evidence that Ningaloo Reef corals and fish are partly self-seeding, with the supply of larvae from locations within Ningaloo Reef of critical importance to the healthy maintenance of the coral communities (Underwood, 2009). Recovery at other coral reef areas may not be aided by a large supply of larvae from other reefs, with levels of recruits after a disturbance event only returning to previous levels after the numbers of reproductive corals had also recovered (Gilmour et al., 2013).

Therefore, a hydrocarbon spill may result in large-scale impacts to coral reefs, particularly Ningaloo Reef, with long-term effects (recovery >10 years) likely.

Submerged Shoals

The waters overlying the submerged Ningaloo Reef, North West Reef and Tryal Rocks have medium to high probability to be exposed to entrained hydrocarbons above threshold concentrations (at or greater than 100 ppb). These permanently submerged habitat represents sensitive open water benthic community receptors, extending from deep depths to relatively shallow water. Potential biological impacts could include sub-lethal stress and, in some instances, total or partial mortality of sensitive benthic organisms such as corals and the early life stages of resident fish and invertebrate species. Other submerged shoals and banks within the wider EMBA (e.g. Barrow Island Reefs and Shoals, Exmouth Reef, Montebello Shoals) are also predicted to be exposed to entrained or dissolved hydrocarbons above threshold concentrations, just at a lower probability. These submerged shoals and banks are also likely to be exposed to floating hydrocarbons above impact thresholds. Although the waters above these shoals may be contacted by surface slicks, any entrainment of surface hydrocarbons is likely to be restricted to the first few metres of the water column and is considered to pose limited potential for impact to marine primary producer habitats at these locations.

Non-biogenic Reefs

The reef communities fringing the Pilbara region (e.g. Pilbara islands) may be exposed to surface or entrained hydrocarbons (at or above threshold concentrations), and consequently exhibit lethal or sub-lethal impacts resulting in partial or total mortality of keystone sessile benthos, particularly hard corals; thus, potential community structural changes to these shallow, nearshore benthic communities may occur. If these reefs are exposed to entrained or dissolved hydrocarbons, impacts are expected to result in localised long-term effects.

Summary of Potential Impacts to Environmental Value(s)

Productivity

Primary production by plankton (triggered by sporadic upwelling events in the offshore waters) is an important component of the primary marine food web. Planktonic communities are generally mixed, including phytoplankton (cyanobacteria and other microalgae), secondary consuming zooplankton (e.g. copepods), and the eggs and larvae of fish and invertebrates (meroplankton).

Exposure to hydrocarbons in the water column can result in changes in species composition, with declines or increases in one or more species or taxonomic groups (Batten et al., 1998). Phytoplankton may also experience decreased rates of photosynthesis (Tomajka, 1985). For zooplankton, direct effects of contamination may include suffocation, changes in behaviour, or environmental changes that make them more susceptible to predation. Impacts on plankton communities are likely to occur in areas where surface, entrained or dissolved aromatic hydrocarbon threshold concentrations are exceeded, but communities are expected to recover relatively quickly (within weeks or months). This is due to high population turnover, with copious production within short generation times that also buffers the potential for long-term (i.e. years) population declines (International Tanker Owners Pollution Federation, 2011a).

Nearshore waters and adjacent offshore waters surrounding the offshore islands (e.g. Muiron Islands, Montebello/Barrow/Lowendal Islands Group) and to the west of the Ningaloo Reef system are also known locations of seasonal upwelling events and productivity. The seasonal productivity events are critical to krill production, which supports megafauna aggregations such as whale sharks and manta rays in the region. This has the potential to result in lethal and sub-lethal impacts to a certain portion of plankton in affected areas, depending on concentration and duration of exposure and the inherent toxicity of the hydrocarbon. The submerged shoals of Ningaloo Reef and North West Reef are areas associated with sporadic upwelling and associated primary productivity events. Stochastic spill model results predict entrained hydrocarbons (at or above the 100 ppb threshold) may reach these shoals. However, recovery would occur. Therefore, any impacts are likely to be temporary and on exposed planktonic communities present in the EMBA.

Hydrocarbon contact during the spawning seasons for resident shoal community benthos and fish (meroplankton), particularly exposure to in-water toxicity effects to biota, may result in the loss of a discrete cohort population, but would not affect the longer-term viability of resident populations. Therefore, any impacts to resident shoal community benthos and fish (meroplankton) are likely to be temporary and localised at the shoals.

Filter Feeders

Hydrocarbon exposure to filter-feeding communities (e.g. deepwater communities 20–200 m) and nearshore filter feeders that are present (shallower water <20 m) in may potentially be impacted by entrained/dissolved hydrocarbons.

Exposure to entrained hydrocarbons/dissolved aromatic hydrocarbons (≥ 100 and ≥ 50 ppb, respectively) has the potential to result in lethal or sub-lethal toxic effects. Sub-lethal impacts, including mucus production and polyp retraction, have been recorded for gorgonians exposed to hydrocarbon (White et al., 2012). Any impacts may result in localised long-term effects to community structure and habitat.

Offshore filter-feeding communities, include such as communities around Ningaloo Reefs or on hard substrate associated with the Canyons linking the Cuvier Abyssal Plain and Continental Slope Demersal Fish Communities KEF or other locations may be impacted depending on the depth of exposure. Nearshore filter feeder communities identified within the Ningaloo Marine Park (approximately 8 km from the Operational Area) may be exposed to hydrocarbons. Such impacts may result in localised, long-term effects to community structure and habitat.

Seagrass Beds, Macroalgae and Mangroves

Spill modelling has predicted that surface, entrained and dissolved hydrocarbons above threshold concentrations have the potential to contact a number of shoreline sensitive receptors, such as those supporting biologically diverse, shallow subtidal and intertidal communities. The variety of habitat and community types, from the upper subtidal to the intertidal zones support a high diversity of marine life and are used as important foraging and nursery grounds by a range of invertebrate and vertebrate species. Depending on the trajectory of the surface and entrained/dissolved plume, macroalgal/seagrass communities including the Ningaloo Coast (patchy and low cover associated with the shallow limestone lagoonal platforms), Muiron Islands (associated with limestone pavements), the Barrow/Montebello/Lowendal Islands, Shark Bay, the Pilbara Southern Island Group (documented as low and patchy cover), the Northern Island Group, the Abrolhos Islands, the Kimberley Coast, Ashmore Reef and southern Indonesian islands have the potential to be exposed.

Seagrass in the subtidal and intertidal zones have different degrees of exposure to hydrocarbon spills. Subtidal seagrass is generally considered much less vulnerable to surface oil spills than intertidal seagrass, primarily because freshly spilled hydrocarbons, including crude oil, float under most circumstances. Dean et al. (1998) found that oil mainly affects flowering, therefore, species that are able to spread through apical meristem growth are not as affected (such as *Zostera*, *Halodule* and *Halophila* species).

Seagrass in the intertidal zone is particularly vulnerable, as it may come into direct contact with surface hydrocarbons, as well as entrained components, which can smother and kill seagrasses if it coats the leaves and stems (Taylor and Rasheed, 2011). This conclusion is supported by Howard et al. (1989) who noted that surface hydrocarbon spills

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which become stranded on the seagrass and smother it during the rise and fall of the tide can result in reduced growth rates, blackened leaves and mortality. Wilson and Ralph (2011) concluded that long-term impacts to seagrass are unlikely unless hydrocarbon is retained within the seagrass meadow for a sustained duration.

Toxicity effects can also occur due to absorption of soluble fractions of hydrocarbons into tissues (Runcie et al., 2010). The potential for toxicity effects of entrained hydrocarbons may be reduced by weathering processes that should serve to lower the content of soluble aromatic components before contact occurs. Exposure to entrained/dissolved aromatic hydrocarbons may result in mortality, depending on actual entrained/dissolved aromatic hydrocarbon concentration received and duration of exposure. Physical contact with entrained hydrocarbon droplets could cause sub-lethal stress, causing reduced growth rates and a reduction in tolerance to other stress factors (Zieman et al., 1984).

Mangrove habitat and associated mud flats and salt marsh at Ningaloo Coast (small habitat areas), the Pilbara islands, the Montebello Islands and southern Indonesian islands were identified within the EMBA. Hydrocarbons coating prop roots of mangroves can occur from surface hydrocarbons when hydrocarbons are deposited on the aerial roots. Hydrocarbons deposited on the aerial roots can block the pores used to breathe or interfere with the trees' salt balance, resulting in sub-lethal and potential lethal effects. Mangroves can also be impacted by entrained/dissolved aromatic hydrocarbons that may adhere to the sediment particles. In low energy environments such as in mangroves, deposited sediment-bound hydrocarbons are unlikely to be removed naturally by wave action and may be deposited in layers by successive tides (National Oceanic and Atmospheric Administration, 2014). The hydrocarbons comprise a proportion of persistent residual fractions; therefore, deposited hydrocarbons are likely to persist in the sediment, potentially causing chronic sub-lethal toxicity impacts beyond immediate physical and acute effects, which may delay recovery in an affected area. Recovery of mangroves from oil spills can take 20–30 years (National Oceanic and Atmospheric Administration, 2014); therefore, recovery from any impacts would be long-term (>10 years).

Sandy Shores/Estuaries/Tributaries/Creeks (including Mudflats)/Rocky Shores

Shoreline exposure for the upper and lower areas differ. The upper shore has the potential to be exposed to surface slicks, while the lower shore is subjected to dissolved or entrained oil.

Potential impacts may occur due to surface hydrocarbon contact with intertidal areas, including sandy shores, mudflats and rocky shores. Hydrocarbons at sandy shores are incorporated into fine sediments through mixing in the surface layers from wave energy, penetration down worm burrows and root pores (International Petroleum Industry Environmental Conservation Association, 2000). Hydrocarbons in the intertidal zone can adhere to sand particles; however, high tide may remove some or most of the hydrocarbons back out of the sediments. Typically, hydrocarbons are only incorporated into the surface layers to a maximum of 10 cm (International Petroleum Industry Environmental Conservation Association, 2000). It is predicted that a number of sandy shores along the coastline may have accumulated hydrocarbons $\geq 100 \text{ g/m}^2$. As described earlier, accumulated hydrocarbons $\geq 100 \text{ g/m}^2$ could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat. The persistence of the hydrocarbons will be dependent on the wave exposure, but can be months to years.

The impact of oil on rocky shores is largely dependent on the incline and energy environment. On steep/vertical rock faces on wave exposed coasts, there is likely to be no impact from a spill event. However, a gradually sloping boulder shore in calm water can potentially trap large amounts of oil (International Petroleum Industry Environmental Conservation Association, 2000). The impact of the spill on marine organisms along the rocky coast will be dependent on the toxicity and weathering of the hydrocarbon. Similar to sandy shores, accumulated hydrocarbons $\geq 100 \text{ g/m}^2$ could coat the epifauna along rocky coasts and impact the reproductive capacity and survival. Intertidal mudflats are susceptible to potential impacts from hydrocarbons, as they are typically low energy environments and therefore trap oils. Intertidal mudflats have been identified in the EMBA along the Ningaloo coast, Pilbara coastline and as far north as Indonesia. The extent of oiling is influenced by the neap and spring tidal cycle, and seasonal highs and lows affecting mean sea level. Potential impacts to tidal flats include heavy accumulations covering the flat at low tide; however, it is unlikely that oil will penetrate the water-saturated sediments. However, oil can penetrate fine sediments through animal burrows and root pores. It has been demonstrated that infaunal burrows allow hydrocarbons to enter subsurface sediments, where it can be retained for months.

The toxicity of stranded surface hydrocarbons and the in-water toxicity of the entrained or dissolved hydrocarbons reaching the shorelines will determine impacts to marine biota such as sessile barnacle species and/or mobile gastropods and crustaceans such as amphipods. Lethal and sub-lethal impacts may be expected where the entrained or dissolved hydrocarbon concentration threshold is ≥ 100 or ≥ 50 ppb, respectively. Impacts may result in localised changes to the community structure of these shoreline habitats, which would be expected to recover in the medium term (2–5 years).

Summary of Potential Impacts to Environmental Value(s)

Indonesian Waters

All Settings

Coral Reef

The fringing coral reefs of the islands of the Lesser Sunda and Southern Java ecoregions may be impacted by surface and accumulated hydrocarbons at or above threshold levels in the event of loss of well containment. The potential impacts on shallow water coral reef systems are discussed above for Mainlands and Islands (Nearshore Waters) – Coral Reef. There is the potential for lethal impacts due to the physical hydrocarbon coating of coral reef systems, with likely mortality of corals (adults, juveniles and established recruits) at areas contacted by surface hydrocarbons above threshold concentrations.

Seagrass Beds/Macroalgae and Mangroves

Seagrass meadows, macroalgae and mangroves in the intertidal and subtidal habitats of the islands of the Lesser Sunda and Southern Java ecoregions all have the potential to be contacted by surface hydrocarbons exceeding threshold levels, in the unlikely event of a loss of well containment. The potential impacts on these habitats and communities are discussed above for Mainland and Islands (Nearshore Waters).

Open Water – Productivity/Upwelling

Floating hydrocarbons are the only fraction identified by stochastic modelling as potentially reaching Indonesian waters above impact thresholds. Given the distance between the release location and sensitivities in Indonesia, any hydrocarbons reaching Indonesian waters will be highly weathered. The majority of soluble and volatile components of the hydrocarbon will have been lost prior to reaching Indonesian waters.

The Lesser Sunda and Southern Java ecoregions of Indonesia experience seasonal upwellings that support megafauna such as migratory cetacean species. The potential impacts to cetaceans from surface hydrocarbons are discussed above in Offshore – Cetaceans and Mainland and Islands (nearshore waters) – Cetaceans.

Mantra rays and whale sharks attracted to seasonal upwellings may experience indirect impacts if the spill was to coincide with a seasonal event such as plankton aggregations. However, surface slicks that have not entered the water column by entrainment or dissolution are unlikely to have a significant impact on plankton populations, as only a small proportion of the population will be close to the surface. The main pathways for direct exposure and contamination of plankton are digestion and transport of hydrocarbon particles through the gut (Gajbhiye et al., 1995), and exposure to OIW emulsions which adhere to the external body wall or gills. Both these pathways are unlikely to result from surface hydrocarbons. Therefore, significant impacts on open water productivity and upwelling in Indonesian waters are considered unlikely.

Spawning/Nursery Areas

As discussed for Indonesia – Pelagic Fish, there is the potential for intertidal nursery areas such as mangroves and seagrass meadows to be contacted by surface hydrocarbons at or above threshold concentrations, potentially leading to impacts such as smothering of mangroves and seagrasses. Impacts to mangroves and seagrasses may result in indirect impacts to early life stages of marine fauna species (such as fish species targeted by local fishers) using these habitats. Given the nature of the hydrocarbon (highly weathered, soluble and volatile components significantly diminished, etc) and the sporadic nature of shoreline/shallow water contact, impacts are expected to be localised, with no population- or ecosystem-scale impacts expected.

Nearshore Filter Feeders

Potential impacts to nearshore filter feeders in Indonesian waters are unlikely, given the lack of entrained or dissolved hydrocarbons, and the limited potential for surface slicks to entrain into the water column.

Sandy Shores/Estuaries/Tributaries/Creeks (including Mudflats)/Rocky Shores

The islands of the Lesser Sunda and Southern Java ecoregions have the potential to be contacted by surface hydrocarbons and accumulated hydrocarbons above threshold levels. The potential impacts to shoreline habitats are discussed above for Mainland and Islands (nearshore waters) – Sandy Shores/Estuaries/Tributaries/Creeks (including Mudflats)/Rock Shores.

Prolonged stranding of surface hydrocarbons, particularly for low energy environments such as mudflats, may lead to localised changes to the community structure of these shoreline habitats (International Tanker Owners Pollution Federation, 2011a) which would be expected to recover in the medium term (2–5 years).

Summary of Potential Impacts to Socio-economic Values

operate from shallow inshore water to water depths up to 200 m, targeting demersal and pelagic finfish species and prawns. In the unlikely event of a major hydrocarbon spill, there is the potential for the targeted fish species to be exposed to entrained and/or dissolved aromatic hydrocarbons in the water column. However, the potential for direct impact would be reduced, as target species such as mackerel and snapper are likely to avoid the surface water layer underneath oil slicks. Demersal species (such as finfish and crustaceans) have limited mobility, and therefore will not be able to easily move away from a spill. Mortality/sub-lethal effects may impact populations located close to the well blowout location. The demersal and crustacean (prawn) fisheries are located over 20 km from the location of a potential well blowout. Populations in these areas are less likely to be impacted significantly, as hydrocarbons at this distance are likely to be entrained/dissolved or weathered and confined in the upper water column. A major loss of hydrocarbons from the Petroleum Activities Program may lead to an exclusion of fishing from the spill-affected area for an extended period.

A number of other State and Commonwealth fisheries, further afield in the EMBA, may also be affected by a major spill; however, the impacts to these far field fisheries will be similar to those described below for 'General Fisheries Impacts'.

Summary

Fish exposure to hydrocarbon can result in 'tainting' of their tissues. Even very low levels of hydrocarbons can impart a taint or 'off' flavour or smell in seafood. Tainting is reversible through the process of depuration which removes hydrocarbons from tissues by metabolic processes, although it is dependent upon the magnitude of the hydrocarbon contamination. Fish have a high capacity to metabolise these hydrocarbons, while crustaceans (such as prawns) have a reduced ability (Yender et al., 2002). Seafood safety is a major concern associated with spill incidents. Therefore, actual or potential contamination of seafood can affect commercial and recreational fishing and can impact seafood markets long after any actual risk to seafood from a spill has subsided (Yender et al., 2002). A major spill would result in the establishment of an exclusion zone around the spill affected area. There would be a temporary prohibition on fishing activities for a period of time, and subsequent potential for economic impacts to affected commercial fishing operators.

Tourism and Recreation

Recreational fishers predominantly target tropical species, such as emperor, snapper, grouper, mackerel, trevally and other game fish. Recreational angling activities include shore-based fishing, private boat and charter boat fishing, with the peak in activity between April and October (Smallwood et al., 2011) for the Exmouth region. Limited recreational fishing takes place in the offshore waters of the Operational Area. Impacts on species that are recreationally fished are described above under 'Summary of Potential Impacts to Other Species'.

A major loss of hydrocarbons from the Petroleum Activities Program may lead to exclusion of marine nature-based tourist activities, resulting in a loss of revenue for operators. Tourism is a major industry for the region, and visitor numbers would likely reduce if a hydrocarbon spill were to occur based on the perception of hydrocarbon spills and associated impacts resulting in moderate, medium term (5–10 years) impacts to community and highly valued areas.

Offshore Oil and Gas Infrastructure

In the unlikely event of a major spill, surface hydrocarbons may affect production from existing petroleum facilities (platforms and FPSOs), as well as activities such as drilling and seismic exploration. For example, facility water intakes for cooling and fire hydrants could be shut off, which could in turn lead to the temporary cessation of production activities. Spill exclusion zones established to manage the spill could also prohibit activity support vessel access as well as offtake tankers approaching facilities off the North West Cape. The impact on ongoing operations of regional production facilities would be determined by the nature and scale of the spill and metocean conditions. Furthermore, decisions on the operation of production facilities in the event of a spill would be based primarily on health and safety considerations. The closest production is the Nganhurra FPSO (operated by Woodside). Other nearby facilities include the Santos-operated Ningaloo Vision FPSO and the Woodside-operated Pyrenees Venture FPSO. Operation of these facilities is likely to be affected in the event of a well blowout spill.

Summary of Potential Impacts to Socio-economic Values

Nearshore Island and Mainland Coastal Areas (Nearshore Waters)

Fisheries – Commercial

In the unlikely event of a loss of well containment, there is the possibility that target species in some areas utilised by a number of state fisheries could be affected, including pearl aquaculture in the North West Cape (including Exmouth Gulf) and wild oysters in the Pearl Oyster Managed Fishery that are within the nearfield EMBA, and further afield the Western Rock Lobster Fishery and a number of west coast and south coast fisheries (refer to for fisheries within the wider EMBA). Targeted fish, prawn, mollusc and lobster species and pearl oysters could experience sub-lethal stress, or in some instances mortality, depending on the concentration and duration of hydrocarbon exposure and its inherent toxicity. In addition, there is also the potential for commercial and artisanal Indonesian fisheries and aquaculture (e.g. seaweed farming) to be impacted (see above for potential impacts to seagrasses).

Prawn Managed Fisheries

In the event of a major spill, the modelling indicated the surface, entrained and dissolved EMBA may extend to nearshore waters closest to the mainland Pilbara and Gascoyne coasts, including the actively fished areas of the designated Onslow Prawn Managed Fishery, Exmouth Gulf Prawn Managed Fishery, Broome Prawn Managed Fishery, Kimberley Prawn Managed Fishery, Nikol Bay Prawn Limited Entry Fishery and the Shark Bay Prawn and Scallop Managed Fishery, and managed prawn nursery areas. Note that the majority of the demarcated area for the prawn managed fishery in the Exmouth Gulf (proper) is outside the EMBA.

Prawn habitat utilisation differs between species in the post-larval, juvenile and adult stages (Dall et al. 1990) and direct impacts to benthic habitat due to a major spill have the potential to impact prawn stocks. For example, juvenile banana prawns are found almost exclusively in mangrove-lined creeks (Rönnbäck et al., 2002), whereas juvenile tiger prawns are most abundant in areas of seagrass (Masel and Smallwood, 2000). Adult prawns also inhabit coastline areas, but tend to move to deeper waters to spawn. In the event of a major spill, a range of subtidal habitats that support juvenile prawns may be exposed to hydrocarbons above impact thresholds, including:

- Muiron Islands
- Montebello Islands
- Barrow Island
- Lowendal Islands
- Pilbara Northern and Southern Island Groups
- Shark Bay
- Ningaloo Coast.

Localised loss of juvenile prawns in worst spill affected areas is possible. Whether lethal or sub-lethal effects occur will depend on duration of exposure, hydrocarbon concentration and weathering stage of the hydrocarbon, and its inherent toxicity. Furthermore, seafood consumption safety concerns and a temporary prohibition on fishing activities may lead to subsequent potential for economic impacts to affected commercial fishing operators.

Fisheries – Traditional

The wider EMBA intersects the formally recognised “MoU Box” covering Scott Reef and surrounds, Montebello Island and Ashmore Reef. Indonesian traditional fishers target trochus, sea cucumbers (holothurians), abalone, green snail, sponges, giant clams and finfish, including sharks. Impacts would be similar to those identified for commercial fishing, in the form of a potential exclusion zone and contamination/tainting of fish stocks. This may result in discarding of catch, or reduced fishing effort due to fishery closure.

Tourism and Recreation

In the unlikely event of a major spill, the nearshore waters of the Ningaloo coast and shorelines further south and north (including Indonesia) could be reached by surface slicks, entrained hydrocarbons and dissolved hydrocarbons, depending on prevailing wind and current conditions. As these locations offer a number of amenities such as fishing, swimming and using beaches and surrounds, they have a recreational value for local residents and visitors (regional, national and international). If a well blowout event resulted in hydrocarbon contact, there could be restricted access to beaches for a period of days to weeks, until natural weathering, tides, currents or oil spill response (e.g. shoreline clean-up if safe to do so) removes the hydrocarbons. In the event of a well blowout, tourists and recreational users may also avoid areas due to perceived impacts, including after the oil spill has dispersed.

Typically, a hydrocarbon spill that results in visible slicks in coastal waters and on shorelines will disrupt recreational activities, particularly tourism and its supporting services. In the unlikely event

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	<p>of a well blowout, hydrocarbons may accumulate on shorelines (at or above a set threshold), and there is potential for visible surface slicks (<10 g/m²) (i.e. a rainbow sheen) to reach sensitive receptor locations, for example, key tourist areas of the Ningaloo Coast (see 4.8) or the full list of receptors). As a result of surface slicks in nearshore waters and potential accumulation on beaches, it is expected that there will be a temporary cessation of all marine-based tourism activities on the spill-affected coast and wider coastal area for a period of weeks or longer, until natural weathering or tides and currents remove the hydrocarbons or clean-up operations remove beached oil.</p> <p>A temporary prohibition on charter boat recreational fishing trips and any other marine nature-based tourism trips to locations such as the Ningaloo Reef, Exmouth Reef Rowley Shoals, Montebello Islands may be put into effect, depending on the trajectory of the plume, resulting in a loss of revenue for operators.</p> <p>There is the potential for stakeholder perception that this environment will be contaminated over a large area and for the longer term, resulting in a prolonged period of tourism decline. Oxford Economics (2010) assessed the duration of hydrocarbon spill related tourism impacts and found that, on average, it took 12 to 28 months to return to baseline visitor spending. There is likely to be significant impacts to the tourism industry, wider service industry (hotels, restaurants and their supply chain) and local communities in terms of economic loss as a result of spill impacts to tourism. Recovery and return of tourism to pre-spill levels will depend on the size of the spill, effectiveness of the spill clean-up, and change in any public misconceptions regarding the spill (Oxford Economics, 2010).</p>
Indonesian Waters	<p>Fisheries – Commercial</p> <p>Within the Lesser Sunda and Southern Java ecoregions, aquaculture, encompassing a variety of species and methods, contributes significantly to local employment and food production. The main species farmed are seaweed, prawns and fish. If surface hydrocarbons at or above threshold levels contact aquaculture operations, impacts are likely to include shutdown of production, contamination/tainting of product, and, in the case of seagrass potentially exposed at low tides, smothering and dieback. Indirect impacts are likely to include loss of income and economic impacts to coastal communities.</p>
	<p>Fisheries – Traditional</p> <p>The Lesser Sunda and Southern Java ecoregions of Indonesia are a productive area for Indonesian artisanal fisheries. The potential impacts to these fisheries from surface hydrocarbons at or above threshold levels would be similar to those described above for Offshore and Mainland and Islands traditional and commercial fisheries and would be likely to include exclusion zones and the potential tainting/contamination of catch. Indirect impacts may include impacts to local economies of coastal communities.</p>
	<p>Tourism and Recreation</p> <p>Tourism is a major industry within the Lesser Sunda and Southern Java ecoregions, with the islands of Bali, Flores, Lombok, Komodo and the Gili Islands particularly important popular tourist destinations, with beach and coastal activities primary attractions. Contact with surface or accumulated hydrocarbons above threshold levels with these areas is likely to result in similar impacts to those described above for Mainland and Islands (nearshore waters) – Tourism and Recreation and would include restricted access to beaches for a period of days to weeks or longer, and the potential for tourist perception that this environment will be contaminated over a large area and for the longer term. This could result in a potential prolonged period of tourism decline. Indirect impacts are likely to include loss of income and economic disruption to a portion of the Lesser Sunda and Southern Java ecoregions.</p> <p>There is also the potential for the following Indonesian Marine National Parks and National Parks to be contacted by surface and accumulated hydrocarbons at or above threshold levels:</p> <ul style="list-style-type: none"> • Laut Sawu Marine National Park • Tanjung Tampa Nature Recreation Park. <p>Impact on the protected areas is discussed in the sections above for ecological values and sensitivities. Additionally, such hydrocarbon contact may alter stakeholder understanding and/or perception of the protected marine environment, given these represent areas largely unaffected by anthropogenic influences and contain biologically diverse environments.</p>

MEE-01 Well Loss of Containment – Risk Analysis

A bowtie risk analysis was undertaken to assess MEE-01; refer to the below figures (**Figure 6-5** to **Figure 6-7**) for bowtie diagrams which were an output of Woodside’s risk analysis process.

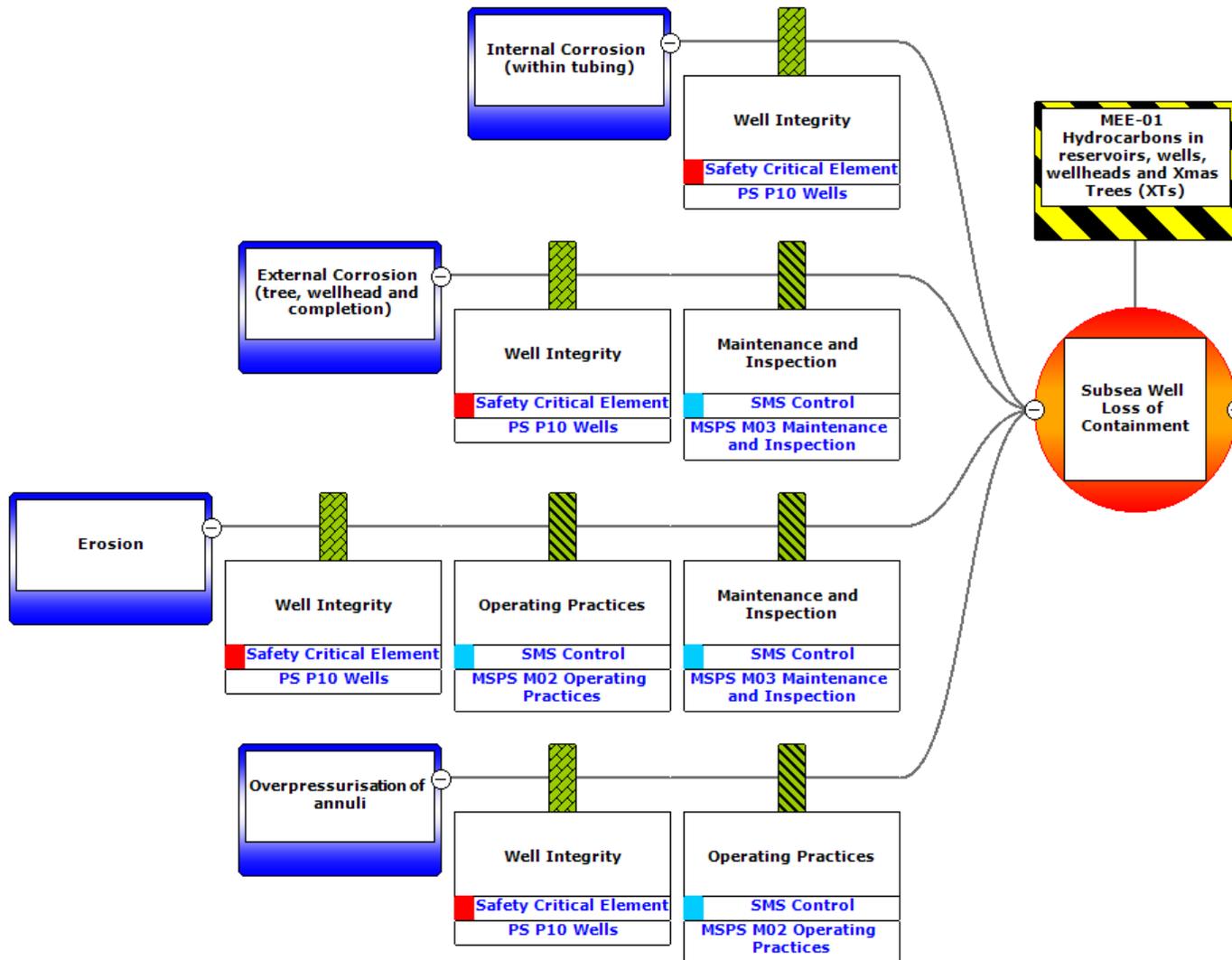


Figure 6-5: MEE-01 well loss of containment (Causes 1 to 4)

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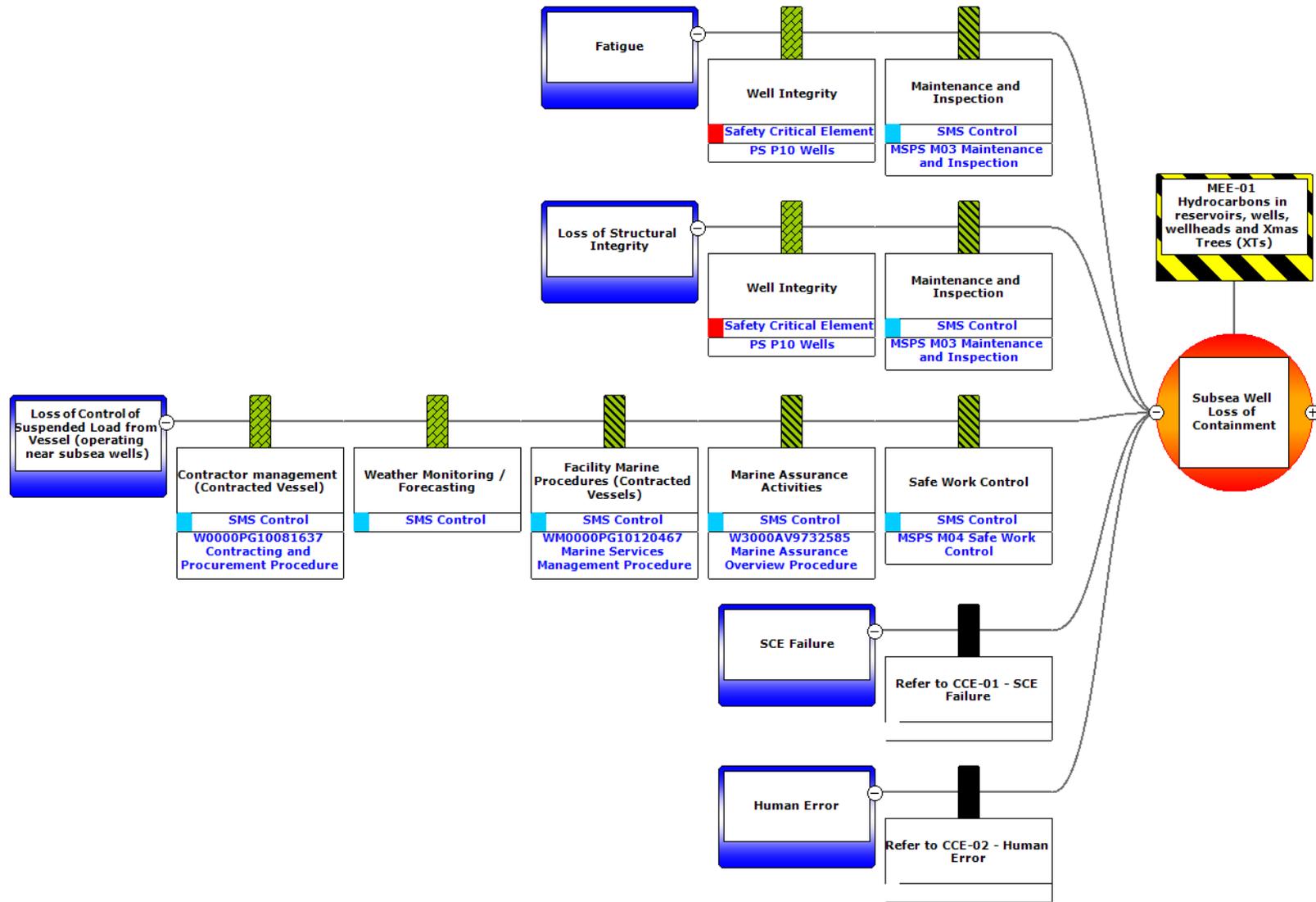


Figure 6-6: MEE-01 well loss of containment (Causes 5 to 9)

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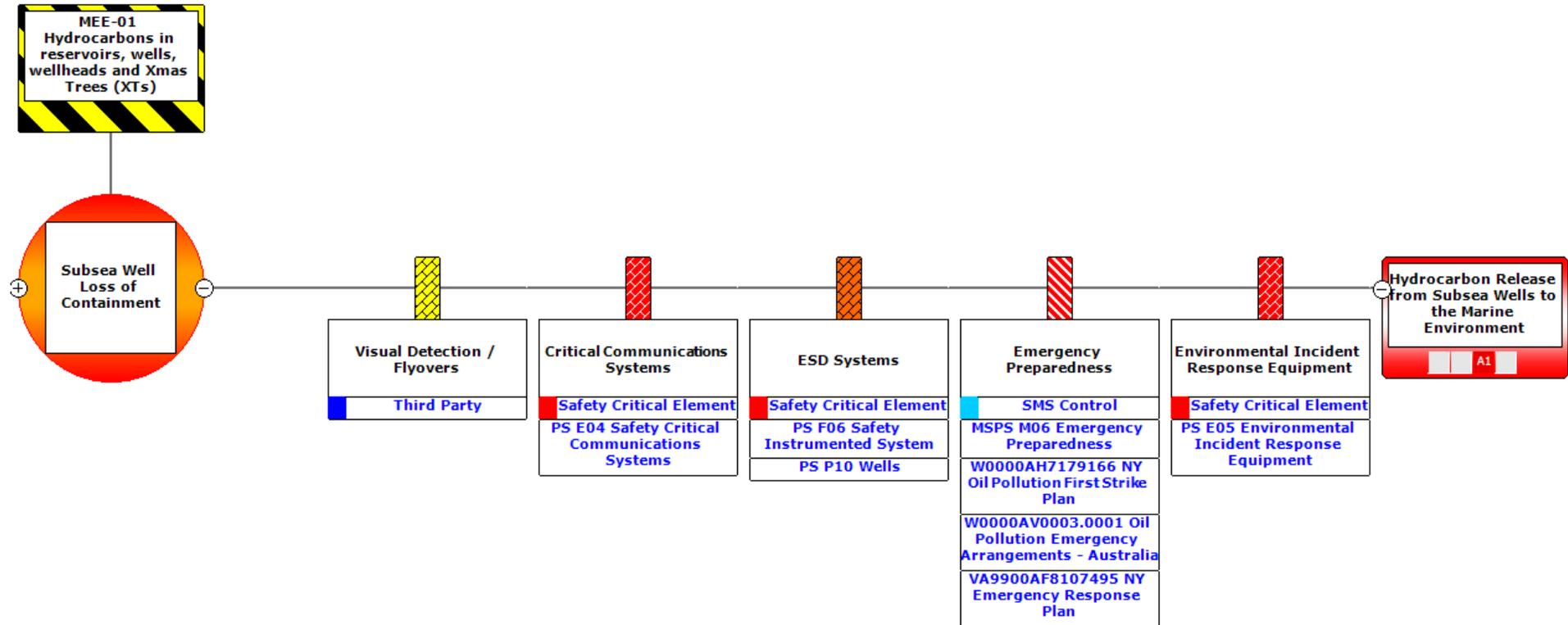


Figure 6-7: MEE-01 well loss of containment (Outcomes)

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MEE-01 Well Loss of Containment – Demonstration of ALARP ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain well mechanical integrity to contain reservoir fluids within the well envelope to avoid an MEE.	P10 – Wells	Prevention (Technical)	Yes C 13.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes C 13.2
Engineering Controls	Maintain Safety Instrumented System (Safety Instrumented Functions and ESD actions) to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant, equipment, and the wells in a safe condition so as to prevent or mitigate the effects of an MEE.	F06 – Safety Instrumented System P10 – Wells	Reduction/Control (Technical)	Yes C 13.3
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 13.4
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011: Accepted WOMP to demonstrate that the risks to well integrity are managed in accordance with sound engineering principles, standards, specifications, and good oilfield practice. It describes the systems that are in place to ensure well design and integrity is managed for the well lifecycle, thus contributing to management of associated potential environmental	Ngujima-Yin WOMP	Prevention/Mitigation (Administration) Control based on legislative requirements – must be adopted).	Yes C 13.5

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MEE-01 Well Loss of Containment – Demonstration of ALARP ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect (Refer to Table 6-16))	Control Adopted
	consequences of well integrity events.			
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> identify hazards that have the potential to cause an MAE; detail the assessment of MAE risks describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention/Mitigation (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4 See Section 6.7.1
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> M02 – Operating Practices M03 – Maintenance and Inspections M04 – Safe Work Control Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections MSPS-04 Safe Work Control Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure	Prevention (Administration)	Yes See Section 7.10.

MEE-01 Well Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan (ERP) • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements - Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7.3) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles, and consider independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the WOMP ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability • wells integrity codes and standards. Well intervention activities are carried out to address maintenance issues with the wells but offer the potential for Loss of Containment from the wells. These activities are carried out using equipment specific to the task by specialist personnel under the Safe Work Control practices. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards, which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
<p>Corporate values require all personnel at Woodside to comply with appropriate policies, standards, procedures and processes while being accountable for their actions and holding others to account in line with Our Values. As detailed above, the Petroleum Activities Program will be undertaken in line with these policies, standards and procedures that include suitable controls to prevent loss of well containment, and response should a loss of well containment occur.</p>				
Societal Values				
<p>Due to the Petroleum Activities Program’s proximity to sensitive receptors (e.g. Ningaloo coast) and the potential extent of the wider EMBA, the loss of well containment risk rating presents a Decision Type B in accordance with the decision support framework described in Section 2.6.1. Extensive consultation was undertaken for this program to identify the views and concerns of relevant stakeholders, as described in Section 5.</p> <p>Woodside has sent an Activity Factsheet to all identified relevant stakeholders regarding the Petroleum Activities Program (Section 5). Woodside has consulted with AMSA and WA DoT on spill response strategies. In accordance with the Memorandum of Understanding between Woodside and AMSA, a copy of the Oil Pollution First Strike Plan was provided to AMSA.</p>				

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MEE-01 Well Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a very low likelihood unplanned hydrocarbon release as a result of a loss of well containment.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of well integrity, and ensuring the wells are operated within their design envelope through operating practices and assurance through maintenance and inspection. If hydrocarbon loss of containment occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the WOMP, SCE management procedures including performance standards for SCEs, and Management System Performance Standards (MSPSs) for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the WOMP ensures the continuous identification of hazards, systematic assessment of risks, and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the technical performance standards, which define requirements to be suitably maintained such that they retain effectiveness, functionality, availability and survivability • wells integrity codes and standards. <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, it is considered that MEE risk associated with loss of well containment is managed to ALARP.</p>				

Demonstration of Acceptability
<p>Acceptability Statement:</p> <p>Loss of well containment has been evaluated as having a 'high' (A1) current risk rating. As per Section 2.6, Woodside considers 'high' (A1) risk ratings as acceptable if ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for, and the alternative control measures are grossly disproportionate to the benefit gained.</p> <p>Acceptability is demonstrated with regard to the considerations below.</p> <p><u>Principles of Ecologically Sustainable Development</u></p> <p>Woodside is a proud Australian company that is here for the long term. Woodside has a strong history of exploration and development of oil and gas reserves in the north west of Western Australia, with an excellent environmental record while providing revenue to State and Commonwealth Governments, returns to shareholders, jobs and support to local communities. Titles for oil and gas exploration are released based on commitments to explore, with the aim of uncovering and developing resources. It is under the lease agreement that Woodside has determined the potential to develop the hydrocarbon fields for which acceptance of this EP is sought under the Environment Regulations.</p> <p>Woodside has established a number of research projects in order to understand the marine environments in which they operate, notably in the Exmouth Region and the Kimberley Region, including Rankin Bank, Glomar Shoals, Enfield Canyon and Scott Reef. Where scientific data does not exist, Woodside assumes a pristine natural environment exists and therefore implements all practicable steps to prevent damage. Woodside's corporate values require that we consider the environment and communities in which we operate when making decisions.</p> <p>Woodside looks after the communities and environments in which it operates. Risks are inherent in petroleum activities; however, through sound management and systematic application of policies, standards, procedures and processes, Woodside considers that despite this risk, the extremely low likelihood of loss of well containment is acceptable.</p> <p><i>Internal Context</i></p> <p>The Petroleum Activities Program is consistent with Woodside corporate policies, standards, procedures, processes, and training requirements as outlined in the Demonstration of ALARP and EPOs, including:</p> <ul style="list-style-type: none"> • Woodside Environment and Biodiversity Policy • the SCE Performance Standards developed and implemented for the NY facility • hydrocarbon spill preparedness and response strategies are considered applicable to the nature and scale of the risk, and associated impacts of the response are reduced to ALARP.
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Woodside corporate values include working sustainably, with respect to the environment and communities in which we operate, listening to internal and external stakeholders, and considering HSE when making decisions. Consultation, outlined below, has been undertaken prior to the Petroleum Activities Program.

External Context – Societal Values

Woodside recognises that its licence to operate from a regulator and societal perspective is based on historical performance, complying with appropriate policies, standards and procedures, and understanding the expectations of external stakeholders. Consultation, outlined below, has been undertaken prior to the Petroleum Activities Program:

- Woodside has consulted with AMSA and WA Department of Transport (DoT) on spill response strategies. In accordance with the Memorandum of Understanding between Woodside and AMSA, a copy of the Oil Pollution First Strike Plan was provided to AMSA and DoT.
- Other relevant persons were consulted (**Section 5**) and their feedback incorporated into this EP where appropriate.
- By providing hydrocarbon spill response measures that are commensurate with the risk rating, location and sensitivity of the receiving environment (including social and aesthetic values), Woodside believes this addresses societal concerns to an acceptable level.

Other Requirements (includes Laws, Policies, Standards and Conventions)

The Petroleum Activities Program is consistent with laws, policies, standards and conventions, including:

- accepted Safety Case (as per the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009
- mutual aid MoU for relief well drilling is in place
- accepted WOMP as per the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011
- notification of reportable and recordable incidents to NOPSEMA, if required, in accordance with **Section 7.7**.

The Petroleum Activities Program is consistent with the objectives in the Ningaloo management plans (Management Plan for Ningaloo Marine Park and Muiron Islands Marine Management Areas, Ningaloo Marine Park Management Plan) in relation to water quality, coral, shoreline and intertidal, macroalgal, seagrass, mangroves, seabirds and social and economic values.

EPOs, EPSs and MC			
<i>Environmental Performance Outcomes</i>	<i>Controls</i>	<i>Environmental Performance Standards</i>	<i>Measurement Criteria</i>
EPO 13 Well loss of containment risks to the environment limited to High during the Petroleum Activities Program.	C 13.1 Maintain well mechanical integrity to contain reservoir fluids within the well envelope to avoid an MEE.	PS 13.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P10 – Wells to: <ul style="list-style-type: none"> – ensure a well retains the mechanical integrity to contain reservoir fluids within the well envelope at all times to avoid an MEE, including operate phase environmentally critical equipment for pressure containment, structures, monitoring and isolating systems associated with the well. 	Refer to MC 1.5.1 Section 6.6.1.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 13.2</p> <p>Maintain availability of critical external and internal communication systems to facilitate prevention and response to accidents and emergencies.</p>	<p>PS 13.2</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • E04 – Safety Critical Communication Systems to: <ul style="list-style-type: none"> - allow effective Emergency Response (ER) communications in emergencies, including: <ul style="list-style-type: none"> ○ Internal Communications such as audible and visual warning systems, and voice communications during emergency events ○ external communications such as voice communications to adjacent facilities, aircraft and vessels, and external incident control centres during emergency events. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>
	<p>C 13.3</p> <p>Maintain Safety Instrumented System (Safety Instrumented Functions and ESD actions) to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant, equipment, and the wells in a safe condition so as to prevent or mitigate the effects of an MEE.</p>	<p>PS 13.3</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • F06 – Safety Instrumented System • P10 – Wells to: <ul style="list-style-type: none"> - detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant, equipment, and the wells in a safe condition so as to prevent or mitigate the effects of an MEE. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 13.4 Maintain environmental incident response equipment to enact the Ngujima-Yin FPSO Facility Operations First Strike Plan.	PS 13.4 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • E05 – Environmental Incident Response Equipment, including: <ul style="list-style-type: none"> – satellite tracking drifter buoy able to monitor spill movement – provision of sufficient hydrocarbon spill response equipment for control and/or clean-up of liquid hydrocarbon spills to ocean – minimum equipment coverage, to maintain adequate spill response capability. 	Refer to MC 1.5.1 Section 6.6.1.
	C 13.5 Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011: Accepted Well Operations Management Plan.	PS 13.5.1 An accepted WOMP is implemented, and well integrity notification and reporting is undertaken in accordance with the Regulations (as applicable).	MC 13.5.1 Acceptance letter from NOPSEMA demonstrates acceptance of the WOMP. Records demonstrate applicable NOPSEMA notification and reporting.
		PS 13.5.2 Prior to sailaway of the NY FPSO for maintenance scopes, XT valves are shut and leak off tested, as per WOMP requirements.	MC 13.5.2 Records demonstrate valves have been tested in accordance with WOMP requirements.
	C 15.6 Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility.	PS 15.6 An accepted Safety Case is implemented, and safety notification and reporting is undertaken in accordance with the Regulations (as applicable).	MC 15.6.1 Acceptance letter from NOPSEMA demonstrates acceptance of the Safety Case. Records demonstrate applicable NOPSEMA notification and reporting.
	Refer to C 11.6 Section 6.7.1	Refer to PS 11.6 Section 6.7.1.	Refer to MC 11.6.1 Section 6.7.1.
	C 15.7 In the event of a spill emergency response activities implemented in accordance with the First Strike Plan.	PS 15.7 In the event of a spill the NY Operations First Strike Plan requirements are implemented.	MC 15.7.1 Completed incident documentation.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 15.8 Arrangements supporting the activities in the First Strike Plan will be tested to ensure they can be implemented as planned.	PS 15.8.1 Exercises/tests will be conducted in alignment with the frequency identified in Table 7-8 .	MC 15.8.1 Testing of arrangement records confirm that emergency response capability has been maintained.
		PS 15.8.2 Woodside's procedure demonstrates a minimum level of trained personnel for core roles in the First Strike Plan are maintained.	MC 15.8.2 Emergency Management dashboard confirms that minimum level of personnel trained for core spill response roles are available.

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6.8.4 Unplanned Hydrocarbon Release: Subsea Flowline and Riser Loss of Containment (MEE-02)

Context														
Facility Layout and Description – Section 3.5 Operational Details – Section 3.6 Subsea Inspection, Maintenance and Repair Activities – Section 3.10			Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10				Consultation – Section 5							
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Loss of hydrocarbons to the marine environment due to a subsea flowline and riser loss of containment		✓	✓		✓	✓	✓	B	B	2	H	LCS RBA CV SV	Acceptable If ALARP	EPO 14
Description of Source of Impact														
<p>Background</p> <p>The Vincent field subsea systems comprise two subsea production manifolds tied into a total of thirteen subsea production trees. The Vincent subsea system also includes two water injector trees and one gas injector tree. There are two 250 mm flowlines extending from Vincent Field wells to the risers connected to the NY FPSO. The total riser capacity is two 250 mm production risers, one 250 mm water disposal riser and one 150 mm gas injection riser.</p> <p>The GE production system comprises six production wells tied back to the NY FPSO via a 31 km 16" wet insulated carbon steel flowline. Flexible flowlines are used to gather production from the five individual Laverda Canyon (LC) and NOL wells and deliver the fluids to the suction side of a MPP. A Cimatti production well ties in via a flexible spool to a tee in the rigid flowline approximately 16.5 km (by flowline length) downstream of the MPP. This well uses gas for artificial lift. The GE subsea system also includes six water injector wells, as well as a water injector flowline and associated riser.</p> <p>A subsea loss of containment from these components may result in minor weeps through to the release of large volumes of hydrocarbon inventory. Due to the potential consequences, a subsea flowline and riser loss of containment is considered to be an MEE (MEE-02). The potential hazard sources that could instigate a loss of containment from the NY flowlines and risers are:</p> <ul style="list-style-type: none"> • internal corrosion • external corrosion • erosion • overpressure or under pressure • low temperature • equipment fatigue/stress • flowline stability and free spans • anchor impact/dragging 														

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- loss of control of suspended load from visiting vessel.

Escalation from other MEEs can cause flowline and riser loss of containment:

- loss of structural integrity (MEE-06) (**Section 6.8.8**)
- loss of marine vessel separation (MEE-07) (**Section 6.8.9**)
- loss of control of suspended load from facility lifting operations (MEE-08) (**Section 6.8.10**).

A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in **Section 6.8.11**.

Subsea Rigid Production Flowline and Riser Loss of Containment – Credible Scenarios

The credible worst-case subsea flowline and riser loss of containment scenario identified for the Petroleum Activities Program is a loss of hydrocarbons from the GE rigid production flowline. This is considered to be the worst-case release of all subsea flowlines and risers, as it contains the greatest volume (260 m³ of GE crude, a mix of hydrocarbons from Norton, Laverda and Cimatti wells) of isolatable hydrocarbon in the subsea infrastructure. The loss of hydrocarbons from the GE rigid production flowline assumes complete loss of the inventory of the flowline over one hour, and a 30-minute operator response time, which is the time selected as a reasonable estimate for the NY FPSO to become aware of the leak and intervene to isolate the compromised infrastructure. The subsea flowline and riser loss of containment fluid release characteristics are summarized in **Table 6-19**.

Table 6-19: Summary of worst-case subsea flowline and riser loss of well containment hydrocarbon release scenarios

Scenario	Hydrocarbon	Duration	Depth (m)	Latitude (D°M'S'')	Longitude (D°M'S'')	Total Hydrocarbon Release Volume (m ³)
Rigid production flowline and riser loss of containment	GE crude	1 hour	529	21° 26' 24" S	113° 57' 55" E	2200

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in subsea production system design, construction and operation. In the company's 60-year history, it has not experienced any subsea infrastructure integrity events that have resulted in significant environmental impacts. The NY facility has never experienced a worst-case subsea flowline and riser loss of containment in its operational history.

Decision Type

A decision type 'B' has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

The release of hydrocarbons as a result subsea flowline and riser loss of containment is considered an MEE (MEE-02). The hazard associated with this MEE is hydrocarbons in subsea flowlines and risers.

Quantitative Spill Risk Assessment

Spill modelling of worst case credible subsea flowline and riser loss of containment scenario was undertaken by RPS APASA, on behalf of Woodside in 2018. The simulation was a release based on the assumptions in **Section 6.8.1**. Modelling was undertaken over all seasons to address year-round operations. MEE-01 hydrocarbon spill modelling provided as a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volume for the PAP.

Subsea Plume Dynamics

The loss of hydrocarbons from the GE rigid production flowline is predicted to result in a buoyant plume of hydrocarbons, which has been modelled using the OILMAP-Deep numerical model.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance, infrastructure marked on marine charts), the likelihood has been taken as 2 (Unlikely). Woodside has also considered industry data for pipeline and riser release frequencies in informing the likelihood assessment (PARLOC 2015). This data indicates a large loss of containment from a flowline with similar attributes as the GE flowline (i.e. material, length and diameter) could occur once every 1000 to 10,000 years. Such a release frequency also corresponds to a 2 (Unlikely) on the Woodside Risk Matrix.

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon were considered during the impact assessment for a worst-case subsea or riser loss of containment (presented in the following section). These

considerations were informed primarily by the outputs from the modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May Be Affected

Surface Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for surface hydrocarbons from the loss of hydrocarbons from the GE rigid production flowline. As described in **Section 6.8.1**, the EMBA depicted in these figures are a summary of all the locations where environmental thresholds could be exceeded for the modelled scenario.

The modelled floating hydrocarbons from the loss of hydrocarbons from the GE rigid production flowline are forecast to drift in all directions (primarily along a southwest-northeast axis), reflecting the competing influence of both surface currents and winds across the wide area in which a slick could travel. At the surface threshold of 10 g/m², floating oil is forecast to potentially occur up to approximately 1100 km from the release site. Contact above impact thresholds was forecast at several receptors.

Entrained Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for entrained hydrocarbons for the loss of hydrocarbons from the GE rigid production flowline. Entrained hydrocarbons above impact thresholds are likely to drift south-west from the release location, then southwards along the Ningaloo Coast. Transport of entrained hydrocarbons reflects the prevailing current regime in the area. Entrained hydrocarbon concentrations above impact thresholds may occur up to 1000 km from the release location. Stochastic modelling results indicated contact above impact thresholds at a number of locations.

Dissolved Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for dissolved hydrocarbons for the loss of hydrocarbons from the GE rigid production flowline. In the event of a subsea flowline and riser loss of containment scenario occurring, stochastic modelling results indicated a plume of dissolved hydrocarbons would potentially behave as per the entrained hydrocarbon plume, due to the influence of the NWS prevailing currents. Stochastic modelling results indicated contact above impact thresholds may occur at a range of receptor. Dissolved hydrocarbon concentrations above impact thresholds may occur up to 150 km from the release location.

Accumulated Hydrocarbons

No accumulation above impact thresholds from the loss of hydrocarbons from the GE rigid production flowline was predicted to occur along any shorelines.

Consequence Assessment Summary

The credible worst-case hydrocarbon spill scenario that may arise from MEE-2 may impact upon a range of environmental receptors. Potential impacts of a hydrocarbon spill to these receptors are considered in MEE-01; refer to **Section 6.8.3** for a description of potential impacts.

The credible worst-case hydrocarbon volumes that can credibly be released by MEE-02 are significantly smaller than the credible worst-case loss of well containment volumes considered in MEE-01 (**Section 6.8.3**). Additionally, the credible release durations are significantly shorter. These considerations are reflected in the significantly smaller EMBA.

MEE-02 Subsea Flowline and Riser Loss of Containment – Risk Analysis

Bowtie risk analysis was undertaken to assess MEE-02; refer to **Figure 6-8** to **Figure 6-11** for bowtie diagrams.

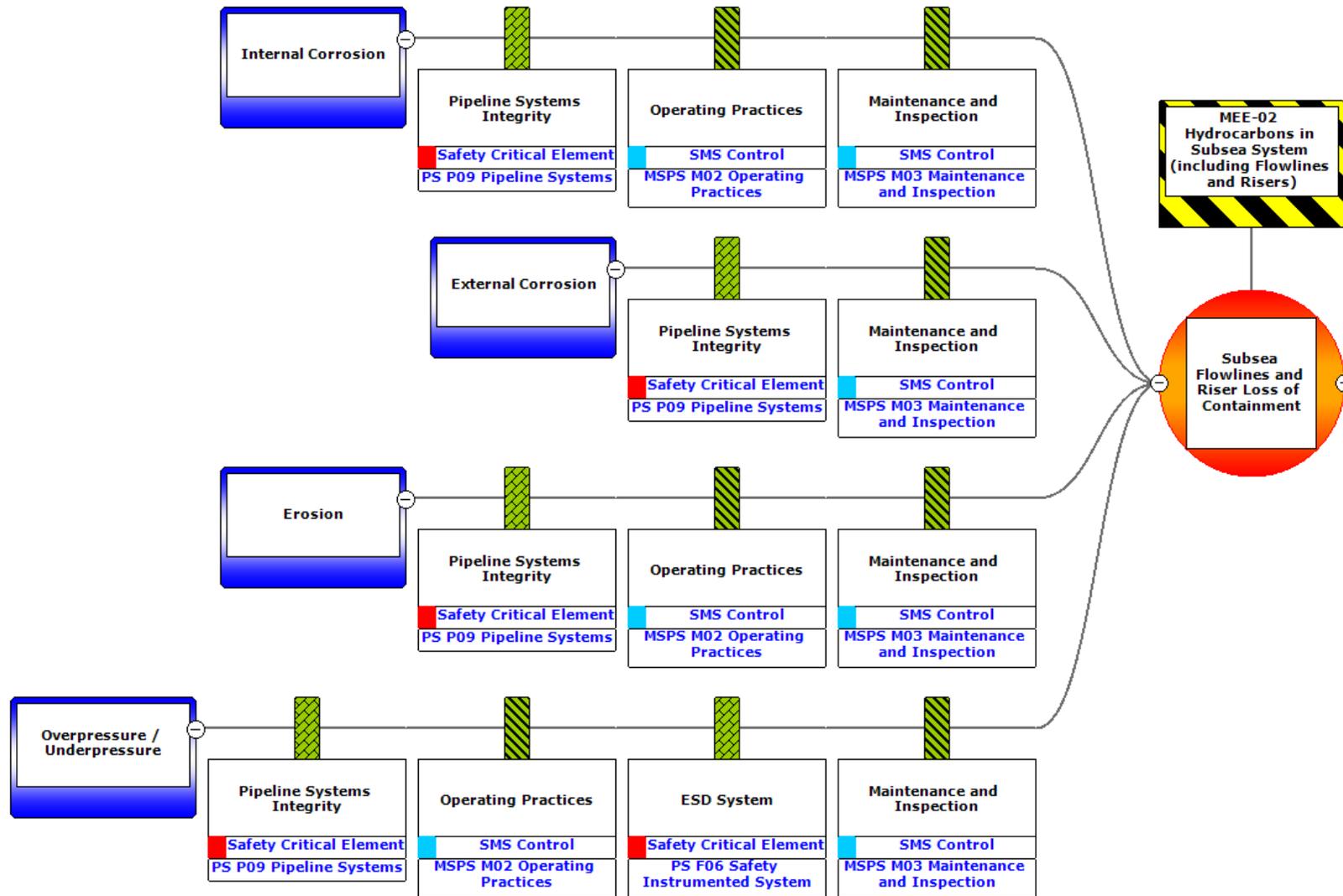


Figure 6-8: MEE-02 flowline and riser loss of containment (Causes 1 to 4)

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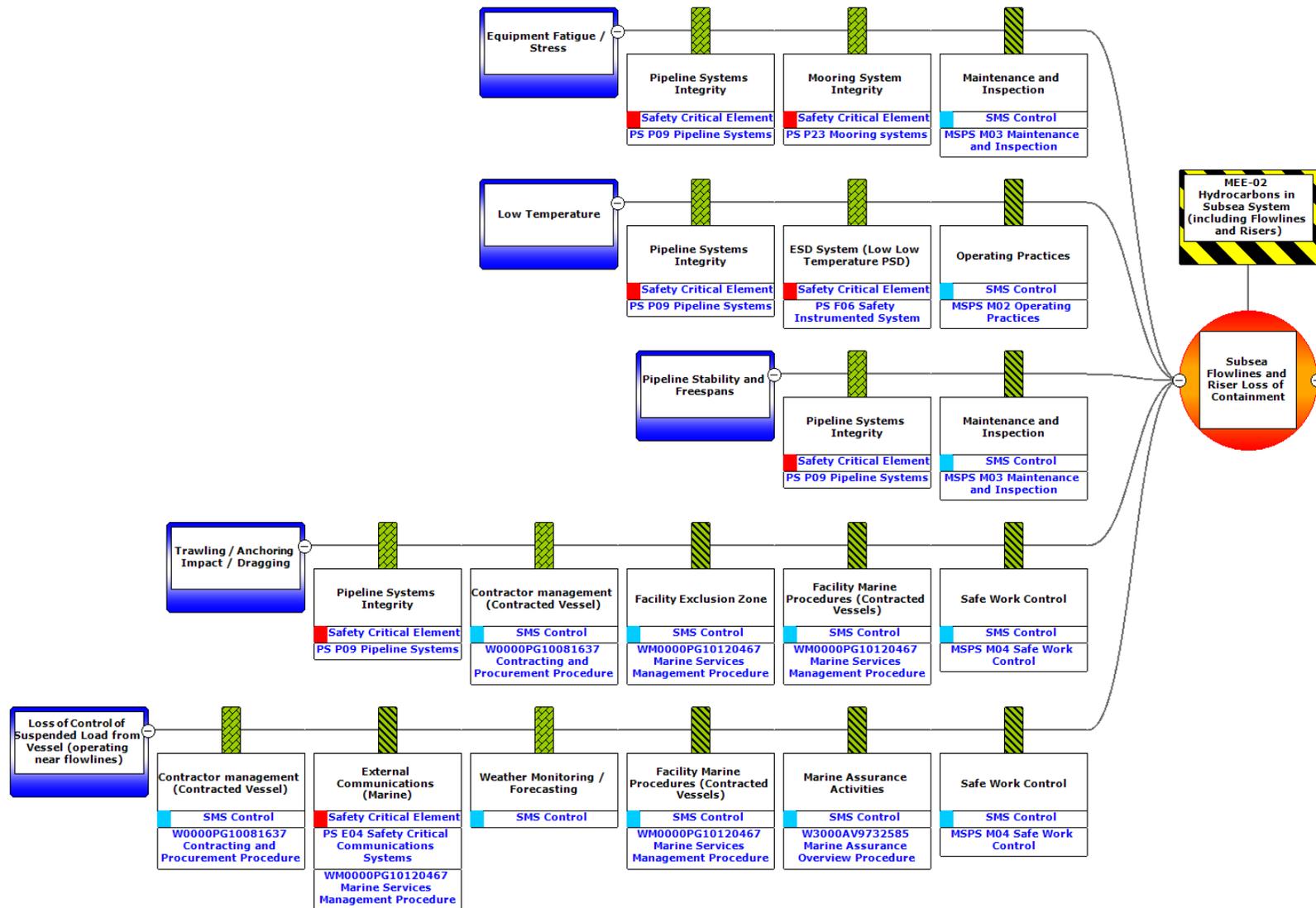


Figure 6-9: MEE-02 flowline and riser loss of containment (Causes 5 to 8)

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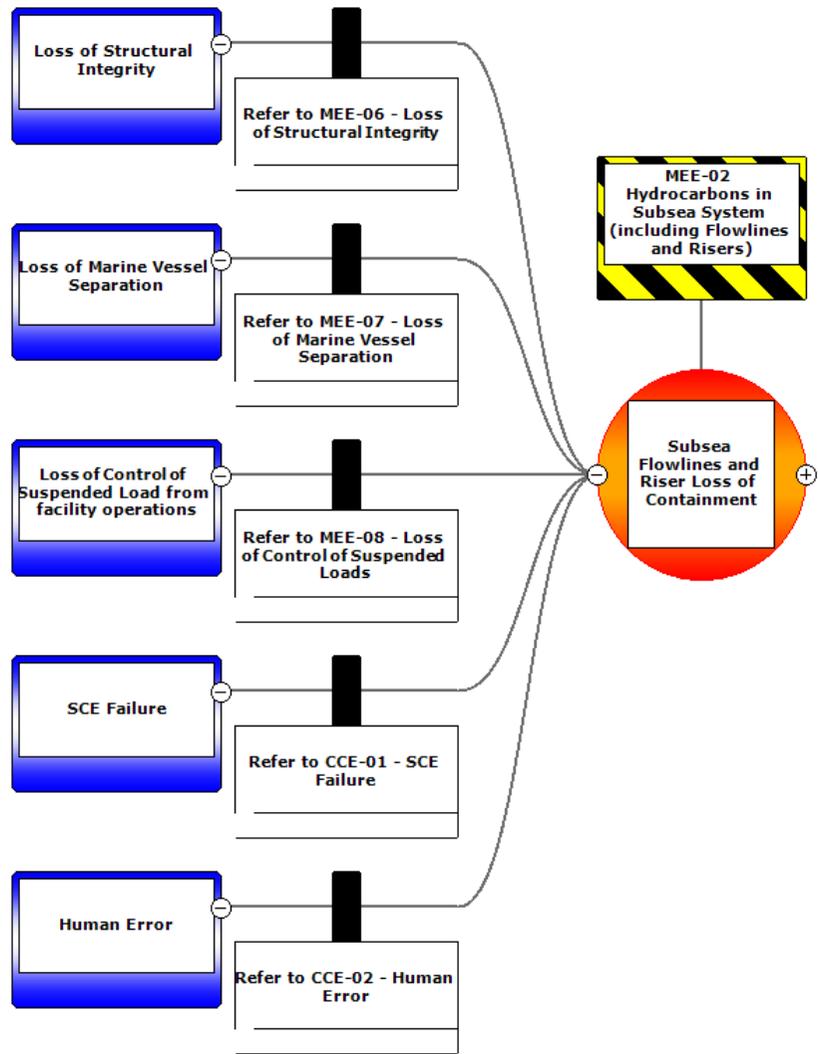


Figure 6-10: MEE-02 flowline and riser loss of containment (Causes 9 to 13)

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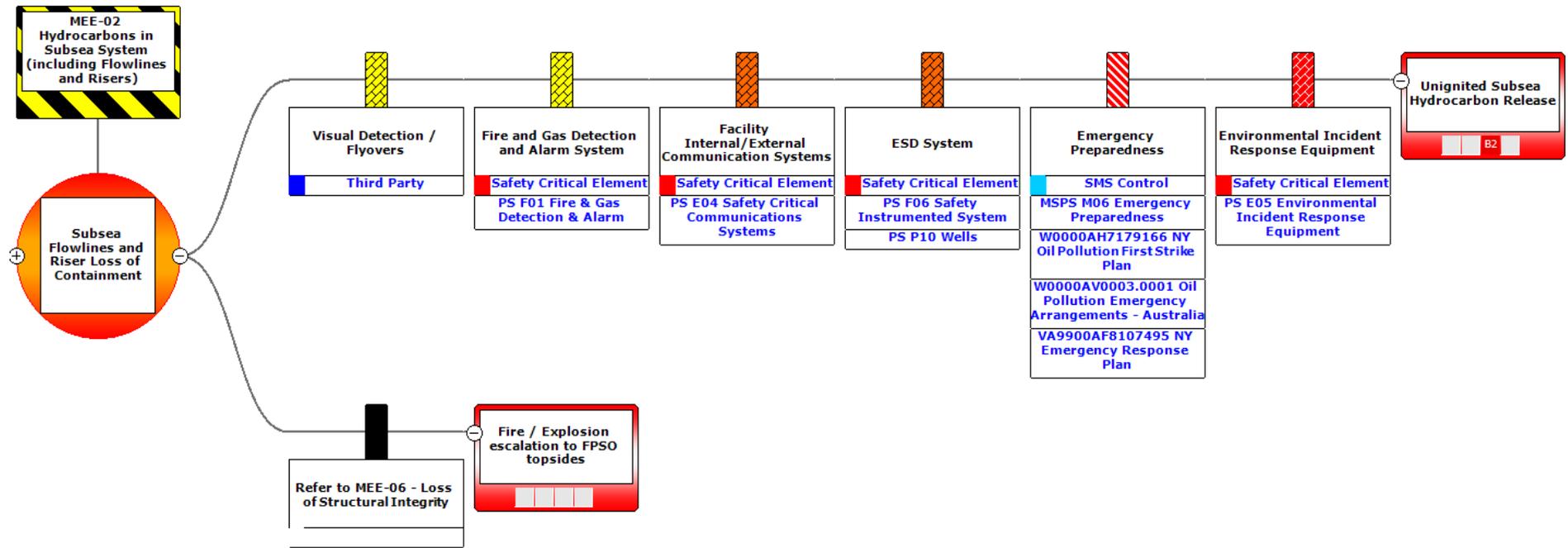


Figure 6-11: MEE-02 flowline and riser loss of containment (Outcomes 1 and 2)

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MEE-02 Subsea and Riser Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain flowline, riser and hydrocarbon-containing infrastructure integrity to avoid an MEE.	P09 – Pipeline Systems P23 – Mooring Systems F06 – Safety Instrumented System	Prevention (Technical)	Yes C 14.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards.	F01 – Fire and Gas Detection and Alarm Systems	Detection (Technical)	Yes C 14.2
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate prevention and response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes Refer C 13.2 Section 6.8.3
Engineering Controls	Maintain Safety Instrumented System (Safety Instrumented Functions and ESD actions) to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant, equipment, and the wells in a safe condition (e.g. through appropriate isolation of hazardous inventories) so as to prevent or mitigate the effects of a MEE.	F06 – Safety Instrumented System P10 – Wells	Reduction/Control (Technical)	Yes Refer C 13.3 Section 6.8.3
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Reduction/Control (Technical)	Yes C 13.4 Section 6.8.3

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MEE-02 Subsea and Riser Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Engineering Controls	Online subsea flowline leak detection system.	<p>An online leak detection system was considered for installation on the rigid production and water injection flowlines.</p> <p>The installation of an online leak detection system was determined to result in a marginal increase in the ability to detect leaks when compared to the implemented leak detection methods (e.g. flowline design, inspection, pressure monitoring, etc). Further, experience has shown that subsea online leak detection systems have operational issues and may be unreliable. The installation of an online leak detection system would result in considerable capital expenditure to design, procure, install and operate. This expenditure was considered to be grossly disproportionate to the environmental benefit (i.e. a marginal increase in the ability to detect leaks from rigid flowlines).</p>	Detection (Technical)	Not implemented

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MEE-02 Subsea and Riser Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause a MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with a MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention/Mitigation (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6 Section 6.8.3
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4 Section 6.7.1
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> • M02 – Operating Practices • M03 – Maintenance and Inspections • M04 – Safe Work Control • Marine Services Management Procedure • Marine Assurance Overview Procedure • Contracting and Procurement Procedure. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections MSPS-04 Safe Work Control Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure	Prevention (Administration)	Yes See Section 7

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MEE-02 Subsea and Riser Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements - Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements - Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based bowtie analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
ALARP Statement:				
<p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a low likelihood unplanned hydrocarbon release from subsea flowline and riser loss of containment.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the subsea flowlines and risers and ensuring the infrastructure is operated within the design envelope through operating practices and assurance through maintenance and inspection. If hydrocarbon loss of containment occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural controls, it is considered that MEE risks associated with loss of containment from subsea flowline and risers are managed to ALARP.</p>				

Demonstration of Acceptability

Acceptability Statement:

Subsea flowline and riser loss of containment has been evaluated as having a 'moderate' (B2) risk rating. As per **Section 2**, Woodside considers 'moderate' (B2) risk rating as broadly acceptable if the adopted controls are implemented. Due to the consequence associated with MEE-02, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.

Acceptability is demonstrated with regard to the considerations described in **Section 6.8.3** (MEE-01) (the considerations include principles of ESD, internal context, external context and other requirements (includes laws, policies, standards and conventions)).

EPOs, EPSs and MC

Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 14 Subsea loss of containment risks to the environment limited to High ⁵⁶ during the Petroleum Activities Program.	C 14.1 Maintain flowline, riser and hydrocarbon-containing infrastructure integrity to avoid an MEE.	PS 14.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P09 – Pipeline Systems • P23 – Mooring Systems • F06 – Safety Instrumented System, to together: <ul style="list-style-type: none"> - maintain the minimum required mechanical and structural integrity to prevent loss of containment that may result in an MEE - detect and respond to pre-defined initiating conditions to protect mechanical integrity. 	Refer to MC 1.5.1 Section 6.6.1.
	C 14.2 Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards.	PS 14.2 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F01 – Fire and Gas Detection and Alarm Systems to: <ul style="list-style-type: none"> - continuously monitor and alert for fire events and significant gas 	Refer to MC 1.5.1 Section 6.6.1.

⁵⁶ As defined in **Section 2.6.3**.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
		accumulations, initiate actions to minimise event escalation, and support Emergency Response by providing status of situation.	
	Refer to C 13.2 Section 6.8.3.	Refer to PS 13.2 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.3 Section 6.8.3.	PS 13.3 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F06 – Safety Instrumented System • P10 – Wells to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant, equipment, and the wells in a safe condition so as to prevent or mitigate the effects of an MEE.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1
	Refer to C 13.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4.1 Section 6.7.1

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6.8.5 Unplanned Hydrocarbon Release: Topsides Loss of Containment (MEE-03)

Context														
Topsides – Section 3.5.1 Process Description – Section 3.6.3 Hydrocarbon and Chemical Inventories and Selection – Section 3.9				Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10					Consultation – Section 5					
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Hydrocarbon release from topsides process equipment to the marine environment and atmosphere.			✓	✓	✓	✓	✓	B	C	1	M	LCS RBA CV SV	Broadly Acceptable	EPO 15
Hydrocarbon release from topsides non-process equipment to the marine environment.			✓	✓	✓	✓	✓	B	C	1	M		Broadly Acceptable	
Description of Source of Impact														
<p>The NY Facility has a range of topsides process and non-process equipment within 11 pre-assembled modules. Release of process (i.e. gas and crude) and non-process hydrocarbons (of which diesel is the largest inventory) from the NY Facility topsides has the potential to release significant quantities of hydrocarbons to the marine environment. Hydrocarbon spill modelling for a 1,000m³ release of processed crude oil as a result of an offloading hose rupture is discussed in Section 6.8.5 (MEE-04). The results of this modelling can be considered to be a very conservative estimate of the worst-case topsides process loss of containment of rupture of the electrostatic coalescer, which holds a maximum isolatable inventory of 428m³ of oil. The potential impacts of the topsides process release are therefore, discussed in Section 6.8.5 (MEE-04).</p> <p>The following hazards could lead to loss of containment from the NY FPSO topsides:</p> <ul style="list-style-type: none"> • internal corrosion • external corrosion • erosion • overpressure • low temperature • overstress of topsides equipment • equipment fatigue • rotating equipment failure/uncontrolled transfer. <p>Escalation from other MEEs can cause topsides loss of containment:</p> <ul style="list-style-type: none"> • loss of structural integrity (MEE-06) (Section 6.8.8) • loss of marine vessel separation (MEE-07) (Section 6.8.9) • loss of control of suspended load from facility lifting operations (MEE-08) (Section 6.8.10). <p>A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in Section 6.8.11.</p>														

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Topsides Loss of Containment – Credible Scenarios

The worst case credible topsides process release scenario is a loss of containment of approximately 428m³ of crude oil from the electrostatic coalescer. A release due to this scenario was modelled, as the release from an offtake hose loss of containment (MEE-04, **Section 6.8.5**) (1000m³) was used to inform the risk assessment. Refer to **Section 6.8.5** for an assessment of a surface release of crude oil.

The worst case credible non-process release from NY is a loss of containment of the diesel oil settling tank. This tank has a maximum inventory of approximately 197 m³. Woodside has commissioned modelling for a number of diesel spills, including a 371 m³ surface release of diesel at the location of the NY FPSO. This modelling has been used to inform the risk assessment of the diesel component of topsides diesel loss of containment scenario (197 m³). This is considered to be suitable given the consistent release location and hydrocarbon type. The modelled volume is larger than the credible diesel spill component, which is likely to overestimate the size of the spill, making the assessment inherently conservative.

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company’s 60-year history, it has not experienced any topsides integrity events that have resulted significant environmental impacts. The NY facility has never experienced a worst-case topsides loss of containment in its operational history.

Decision Type

A decision type ‘B’ has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill trajectory modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

The release of hydrocarbons from a topsides process loss of containment is considered an MEE (MEE-03). The hazard associated with this MEE is hydrocarbons contained within topsides process equipment. Note that Woodside has assessed the environment consequence of a worst-case credible loss of containment from topsides equipment as “C” as per the Woodside Risk Matrix. Woodside has also assessed the reputational and brand consequences associated with this release, and concluded that the event results in a “C” level consequence, and hence meets Woodside’s definition of an MEE (refer to **Section 2.6.3**).

Quantitative Spill Risk Assessment

Stochastic hydrocarbon spill modelling for the offloading equipment loss of containment was used to inform the risk assessment for a topsides process loss of containment (refer to credible scenarios detailed above). Stochastic spill modelling of worst-case credible topsides diesel loss of containment scenario was undertaken by RPS APASA, on behalf of Woodside. The simulations were an instantaneous release based on the assumptions in **Section 6.8.1**. Modelling was undertaken over all seasons to address year-round operations. This is considered to provide a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volume for a topsides loss of containment.

Hydrocarbon Characteristics

Hydrocarbon characteristics are provided in described in more detail in **Section 6.8.1**.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance, infrastructure marked on marine charts), the likelihood of a topsides loss of containment has been taken as 1 (highly unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon were considered during the impact assessment for a topsides loss of containment. These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May Be Affected

Surface Hydrocarbons

As described in **Section 6.8.1**, the EMBA depicted in these figures are a summary of all the locations where environmental thresholds could be exceeded for stochastic modelled scenarios.

The stochastic modelled floating hydrocarbon EMBA from the topsides diesel loss of containment scenario is forecast to drift primarily to the south-west, reflecting the competing influence of both surface currents and winds across the wide area in which a slick could travel. Modelling did not indicate contact with any sensitive receptors; therefore, no tabular summary of contact with sensitive receptors is provided for the topsides loss of containment scenario.

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Entrained Hydrocarbons

Stochastic modelling results indicated entrained hydrocarbons above impact thresholds are likely to drift south-west from the release location, covering a smaller area than the surface EMBA. Stochastic modelling did not indicate contact with any sensitive receptors; therefore, no tabular summary of contact with sensitive receptors is provided for the topsides diesel loss of containment scenario.

Dissolved Hydrocarbons

The stochastic hydrocarbon spill modelling results did not indicate dissolved hydrocarbon concentrations above impact thresholds at sensitive receptors would occur.

Accumulated Hydrocarbons

Stochastic modelling results indicated no accumulation above impact thresholds from the topsides diesel loss of containment scenario was predicted to occur along any shorelines.

Consequence Assessment Summary

The credible worst-case hydrocarbon spill scenario that may arise from MEE-03 may impact upon environmental receptors; refer to MEE-04 (**Section 6.8.5**) for an assessment of a surface release of crude oil (consistent with a topsides process release). The credible crude oil volume from a topsides loss of containment (MEE-03) is smaller than the scenario presented in MEE-04; as such the potential to impact upon sensitive receptors may be lower. Receptors potentially impacted by crude oil from MEE-03 are expected to be a subset of those identified in MEE-04. The nature of the hydrocarbon is considered to be the same, as is the potential nature of contact (e.g. weathering, time to contact, contact concentration).

A topsides non-process release of marine diesel is expected to result in the potential for surface and entrained hydrocarbons above impact thresholds. Floating and entrained hydrocarbons may extend into the multiple use zone of the Gascoyne Commonwealth Marine Park. The EMBA for the diesel loss of containment overlaps the Continental Slope Demersal Fish Communities and Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KFEs. Given the nature of the release and the water depth overlapping these KFEs, no impacts to the environmental values of the KFEs are expected to occur. There is the potential for impacts to socio-economic receptors, such as oil and gas facilities (e.g. decreased water quality affecting water intakes such as cooling) and fisheries (displacement of fishing effort). These potential impacts are considered to be isolated and of no lasting effect. Marine fauna within the EMBA may be impacted, particularly fauna associated with surface waters such as seabirds. Given the non-persistent nature of diesel and the relatively small EMBA, no population-scale impacts are expected.

On this basis, the consequence ratings for topsides process and non-process loss of containment to the atmosphere and marine environment are considered to be C (**Table 6-2**).

MEE-03 Topsides Loss of Containment – Risk Analysis

Bowtie risk analysis was undertaken to assess MEE-03; refer to **Figure 6-12** to **Figure 6-13** for bowtie diagrams.

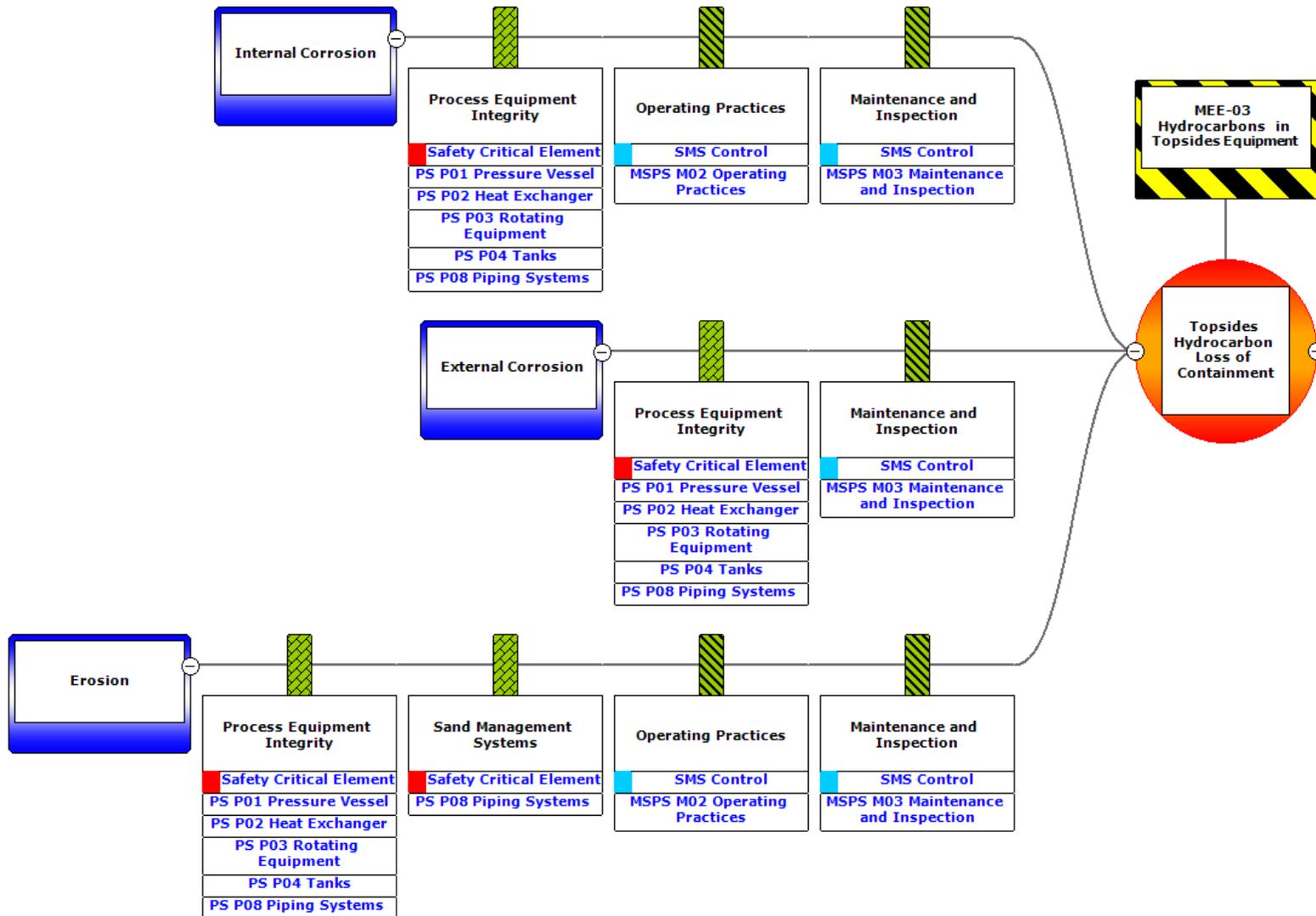


Figure 6-12: MEE-03 topsides loss of containment (Causes 1 to 3)

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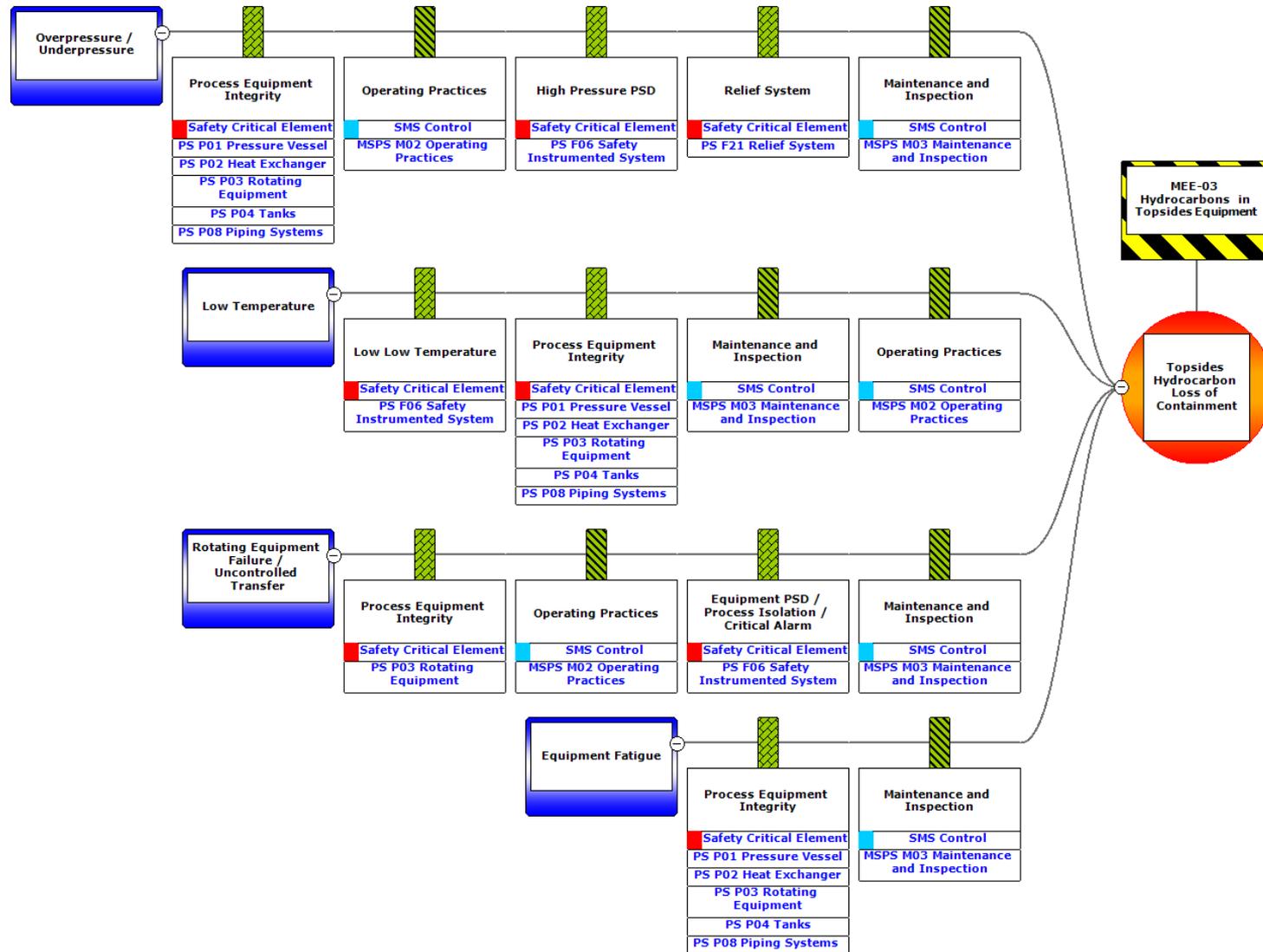


Figure 6-13: MEE-03 topsides loss of containment (Causes 4 to 7)

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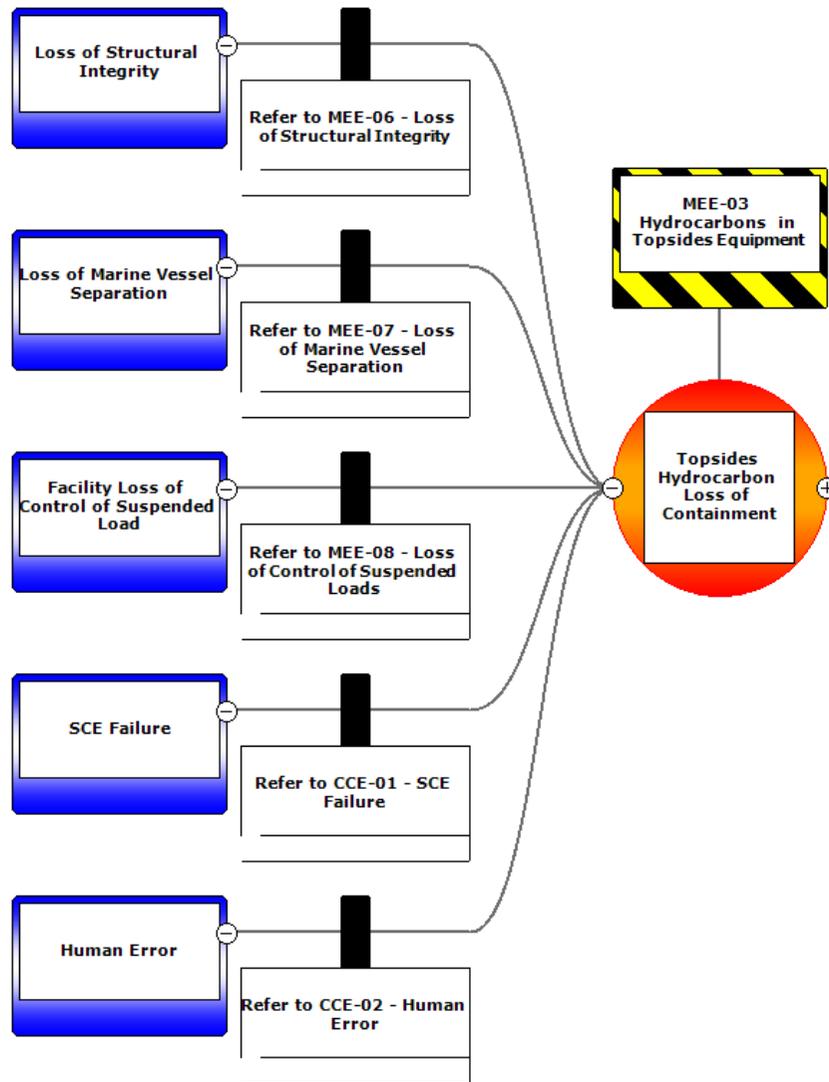


Figure 6-14: MEE-03 topsides loss of containment (Causes 8 to 12)

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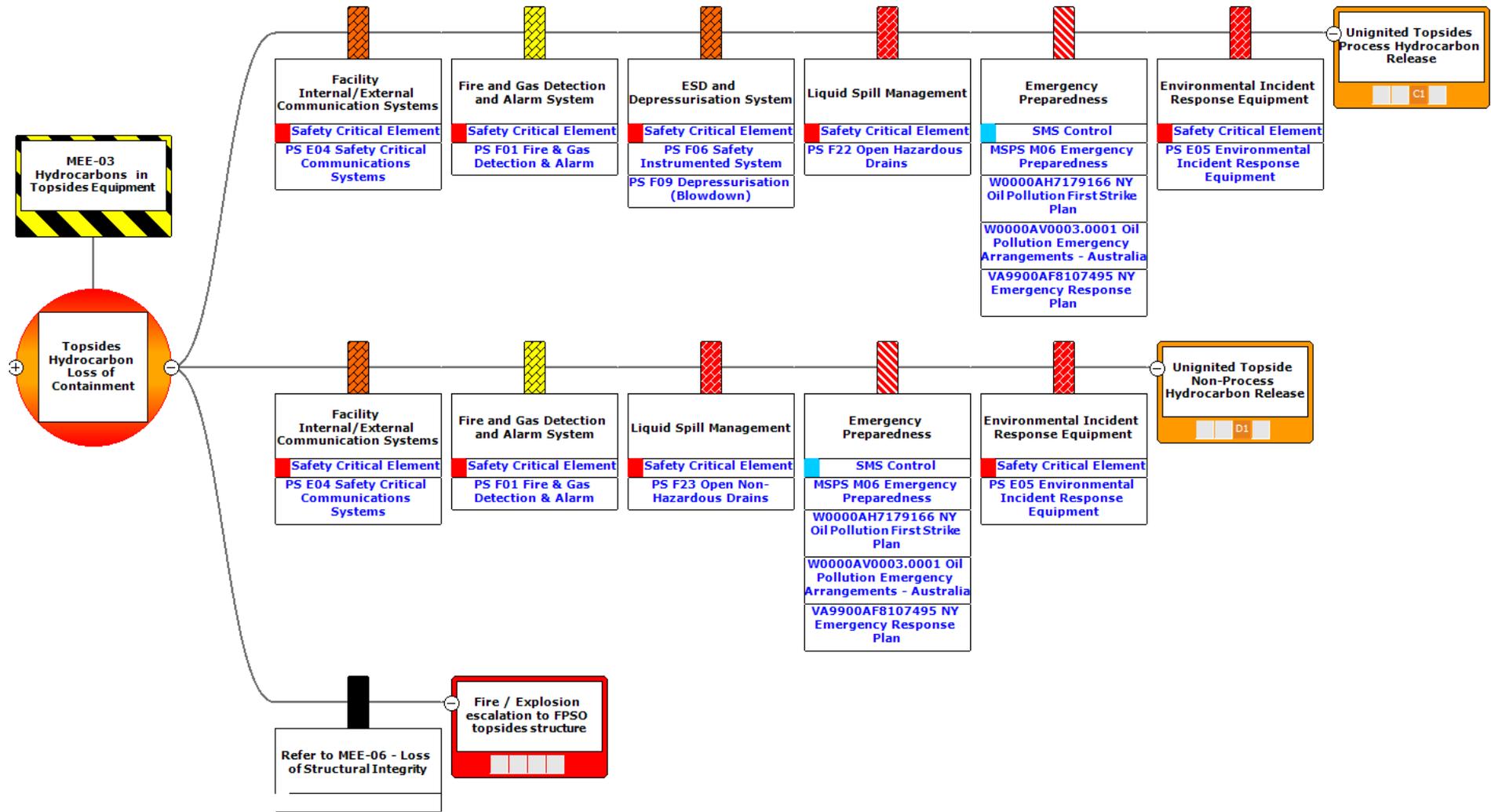


Figure 6-15: MEE-03 topsides loss of containment (Outcomes)

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MEE-03 Topsides Loss of Containment – Demonstration of ALARP ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i>	<i>Control Adopted</i>
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain topsides hydrocarbon-containing infrastructure integrity, Safety Instrumented Systems and relief system in order to prevent an MEE.	P01 – Pressure Vessel P02 – Heat Exchanger P03 – Rotating Equipment P04 – Tanks P08 – Piping Systems F06 – Safety Instrumented System F21 – Relief System	Prevention (Technical)	Yes C 15.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards.	F01 – Fire and Gas Detection and Alarm Systems	Detection (Technical)	Yes C 14.2
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate prevention and response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes C 13.2
Engineering Controls	Maintain Safety Instrumented Systems and Blowdown system to isolate, remove and control hazardous inventories to mitigate the effects of an MEE/prevent escalation to an MEE.	F06 – Safety Instrumented System F09 – Depressurisation	Reduction/Control (Technical)	Yes C 13.3
Engineering Controls	Maintain hazardous and non-hazardous open drains to remove and control environmentally hazardous liquid discharges to prevent or mitigate an MEE.	F22 – Hazardous Open Drains	Mitigation (Technical)	Yes C 15.2
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Reduction/Control (Technical)	Yes C 13.4

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MEE-03 Topsides Loss of Containment – Demonstration of ALARP ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i>	<i>Control Adopted</i>
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause a MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with a MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention/Mitigation (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> • M02 Operating Practices • M03 Maintenance and Inspections • M04 Safe Work Control • Marine Services Management Procedure • Marine Assurance Overview Procedure • Contracting and Procurement Procedure. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections MSPS-04 Safe Work Control Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure	Prevention (Administration)	Yes See Section 7

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MEE-03 Topsides Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i>	<i>Control Adopted</i>
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, it is considered that MEE risk associated with topsides loss of containment onboard the NY FPSO is managed to ALARP.</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a very low likelihood unplanned hydrocarbon release from topsides loss of containment.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the topsides process and non-process infrastructure and ensuring the infrastructure is operated within the design envelope through operating practices and assurance through maintenance and inspection. If hydrocarbon loss of containment occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural controls, it is considered that MEE risk associated with topsides loss of containment are managed to ALARP.</p>				
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MEE-03 Topsides Loss of Containment – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect	Control Adopted
Demonstration of Acceptability				
<p>Acceptability Statement:</p> <p>Topsides loss of containment has been evaluated as having a ‘moderate’ (C1) risk rating. As per Section 2, Woodside considers ‘moderate’ (C1) risk rating as broadly acceptable if the adopted controls are implemented. Due to the consequence associated with MEE-03, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.</p> <p>Acceptability is demonstrated with regard to the considerations described in Section 6.8.3 (MEE-01) (the considerations include principles of ecologically sustainable development, internal context, external context and other requirements (includes laws, policies, standards and conventions)).</p>				

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 15</p> <p>Topsides loss of containment risks to the environment limited to High⁵⁷ during the Petroleum Activities Program.</p>	<p>C 15.1</p> <p>Maintain topsides hydrocarbon-containing infrastructure integrity.</p>	<p>PS 15.1</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • P01 – Pressure Vessel • P02 – Heat Exchanger • P03 – Rotating Equipment • P04 – Tanks • P08 – Piping Systems; to together: <ul style="list-style-type: none"> - provide minimum required mechanical integrity for identified SCE systems (piping, heat exchangers, rotating equipment, and pressure vessel) for operation within defined integrity limits so as to prevent a loss of containment that may result in an MEE <ul style="list-style-type: none"> • F06 – Safety Instrumented System; to: - detect and respond to pre-defined initiating conditions to protect mechanical integrity <ul style="list-style-type: none"> • F21 – Relief System; to: - protect pressurised equipment, equipment exposed to high pressures and piping from a loss of containment to prevent escalation to an MEE. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>

⁵⁷ As defined in **Section 2.6.3.**

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	Refer to C 14.2 Section 6.8.4.	Refer to PS 14.2 Section 6.8.4.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.2 Section 6.8.3.	Refer to PS 13.2 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	C 15.2 Maintain Safety Instrumented Systems, Blowdown and Open Hazardous Drains system to isolate, remove and control hazardous inventories so as to mitigate the effects of a MEE/ prevent escalation to a MEE.	PS 15.2 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F06 – Safety Instrumented System, to: <ul style="list-style-type: none"> - detect and respond to pre-defined initiating conditions, and initiate responses that function to put the process plant, equipment, and the wells in a safe condition through appropriate isolation of hazardous inventories so as to prevent or mitigate the effects of an MEE • F09 – Depressurisation, to: <ul style="list-style-type: none"> - safely depressurise the installation in order to avoid or minimise the escalation of an uncontrolled loss of containment. 	Refer to MC 1.5.1 Section 6.6.1.
	C 15.3 Maintain hazardous and non-hazardous open drains to remove and control environmentally hazardous liquid discharges to prevent or mitigate an MEE.	PS 15.3 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F22 – Hazardous Open Drains, to: <ul style="list-style-type: none"> - prevent escalation of an incident following loss of containment, fire and/or explosion by removing or containing flammable liquid from hazardous areas - support appropriate containment and disposal of environmentally hazardous liquids to avoid damage to the environment. 	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	Refer to C 13.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 15.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.8.3.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.6 Unplanned Hydrocarbon Release: Offloading Equipment Loss of Containment (MEE-04)

Context														
Facility Operations – Section 3.6.13 Support Vessel Operations – Section 3.7				Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10						Consultation – Section 5				
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Hydrocarbon release from NY FPSO offloading equipment to the marine environment and atmosphere.		✓	✓	✓	✓	✓	✓	B	B	1	M	LCS RBA CV SV	Broadly Acceptable	EPO 16
Description of Source of Impact														
<p>Background</p> <p>Crude oil is routinely transferred from the NY FPSO to offtake tankers. The offloading of crude product takes place using steam-driven pumps via cargo piping leading to a 200 m long, 400 mm diameter floating hose located at the stern of the NY FPSO.</p> <p>The offtake tanker is moored to the stern of the NY FPSO in a tandem configuration via a stern mounted mooring hawser. A tug is used to provide a static tow to the offtake tanker during the offloading operation. The maximum pumping rate during normal offloading operations is 5,500m³ per hour and the volume of the offloading hose/system is approximately 51 m³ (hose inventory 25.9 m³, piping system from cargo tanks inventory 25 m³).</p> <p>The following hazards could lead to loss of containment from the FPSO offloading system:</p> <ul style="list-style-type: none"> • internal corrosion • external corrosion • overpressure • equipment fatigue/failure • loss of control of offtake vessel • mooring failure (during offtake operations). <p>Escalation from other MEEs can cause Flowline and Riser Loss of Containment:</p> <ul style="list-style-type: none"> • loss of structural integrity (MEE-06) (Section 6.8.8) • loss of marine vessel separation (MEE-07) (Section 6.8.9) • loss of control of suspended load from facility lifting operations (MEE-08) (Section 6.8.10). <p>A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in Section 6.8.11.</p>														

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Offloading Equipment Loss of Containment – Credible Scenarios

The worst case credible scenario for an offloading loss of containment modelled is considered to be approximately 1425 m³ of NY blend crude oil, which includes the loss of the entire inventory of the offtake hose and the release associated with continued pumping at the maximum rate of 5,500 m³/hour for 15 minutes. This scenario assumes the 24-hour watch would not immediately identify the incident, and instead assumes a worst-case credible time of 15 minutes for detection and then activation/actuation of shutdown systems. The characteristics of the offloading equipment loss of containment scenario are summarised in Table 6-20.

Table 6-20: Summary of the worst-case offloading equipment loss of containment release scenario

Scenario	Hydrocarbon	Duration (minutes)	Depth (m)	Latitude (D°M'S'')	Longitude (D°M'S'')	Total Hydrocarbon Release Volume (m ³)
Offloading equipment loss of containment	NY topsides blend crude	15 minutes	Surface	21° 26' 02.661" S	114° 04' 01.325" E	1450

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company's 60-year history, it has not experienced any offloading loss of containment events that have resulted in significant environmental impacts.

Decision Type

A decision type 'B' has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill trajectory modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

The release of hydrocarbons from an offloading equipment loss of containment is considered an MEE (MEE-04). The hazard associated with this MEE is hydrocarbons contained within the offloading equipment.

Quantitative Spill Risk Assessment

Stochastic spill modelling of worst-case credible offloading equipment loss of containment scenario was previously undertaken by RPS APASA, on behalf of Woodside. The simulation was 15 minutes release based on the assumptions in **Section 6.8.1**. Modelling was undertaken over all seasons to address year-round operations. This is considered to provide a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volume for an offloading equipment loss of containment.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance), the likelihood has been taken as 1 (highly unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon was considered during the impact assessment for an offloading equipment loss of containment. These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May Be Affected

Surface Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for surface hydrocarbons from the offloading equipment loss of containment scenario. As described in **Section 6.8.1**, the EMBA depicted in these figures are a summary of all the locations where environmental thresholds could be exceeded for modelled scenarios.

Stochastic modelling indicated floating hydrocarbons from the offloading equipment loss of containment scenario are forecast to drift in all directions, reflecting the competing influence of both surface currents and winds across the wide area in which a slick could travel. At the surface threshold of 10 g/m², floating oil is forecast to potentially occur up to approximately 910 km from the release site. Contact above impact thresholds was forecast along the Ningaloo Coast.

Entrained Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for entrained hydrocarbons for the offloading equipment loss of containment scenario. Entrained hydrocarbons above impact thresholds are likely to drift in all directions from the release location, which is consistent with entrainment of a surface release being influenced by surface currents.

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Stochastic modelling results indicated entrained hydrocarbon concentrations above impact thresholds may occur up to 250 km from the release location. No entrained hydrocarbon contact above impact thresholds with sensitive receptors was predicted.

Dissolved Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for dissolved hydrocarbons for the offloading equipment loss of containment scenario. In the event of an offloading equipment loss of containment scenario occurring, a plume of dissolved hydrocarbons would potentially extend in all direction, primarily along a north-east – south-west axis. Stochastic modelling results indicated dissolved hydrocarbon concentrations above impact thresholds may occur up to 60 km from the release location. No dissolved hydrocarbon contact above impact thresholds with sensitive receptors was predicted.

Accumulated Hydrocarbons

The stochastic hydrocarbon spill modelling indicated the potential for shoreline accumulation above impact thresholds. There is a potential for accumulation of oil on shorelines, with a maximum accumulated volume of 330 m³ forecast at Ningaloo Coast Middle WHA and a maximum local accumulated concentration on shorelines of 6.1 kg/m² forecast at Ningaloo Coast Middle WHA.

Consequence Assessment Summary

The credible worst-case hydrocarbon spill scenario that may arise from MEE-4 are impacts upon the Ningaloo Coast, Muiron Islands and Montebello Islands. Potential impacts of a hydrocarbon spill to these receptors are considered in MEE-01; refer to **Section 6.8.3** for a description of potential impacts.

The credible worst-case hydrocarbon volumes that can credibly be released by MEE-04 are significantly smaller than the credible worst-case loss of well containment volumes considered in MEE-01 (**Section 6.8.3**). Additionally, the credible release durations are significantly shorter. These considerations are reflected in the significantly smaller EMBA.

MEE-04 Offloading Equipment Loss of Containment - Risk Analysis

Bowtie analysis was undertaken to assess MEE-04; refer to **Figure 6-16** to **Figure 6-19**.

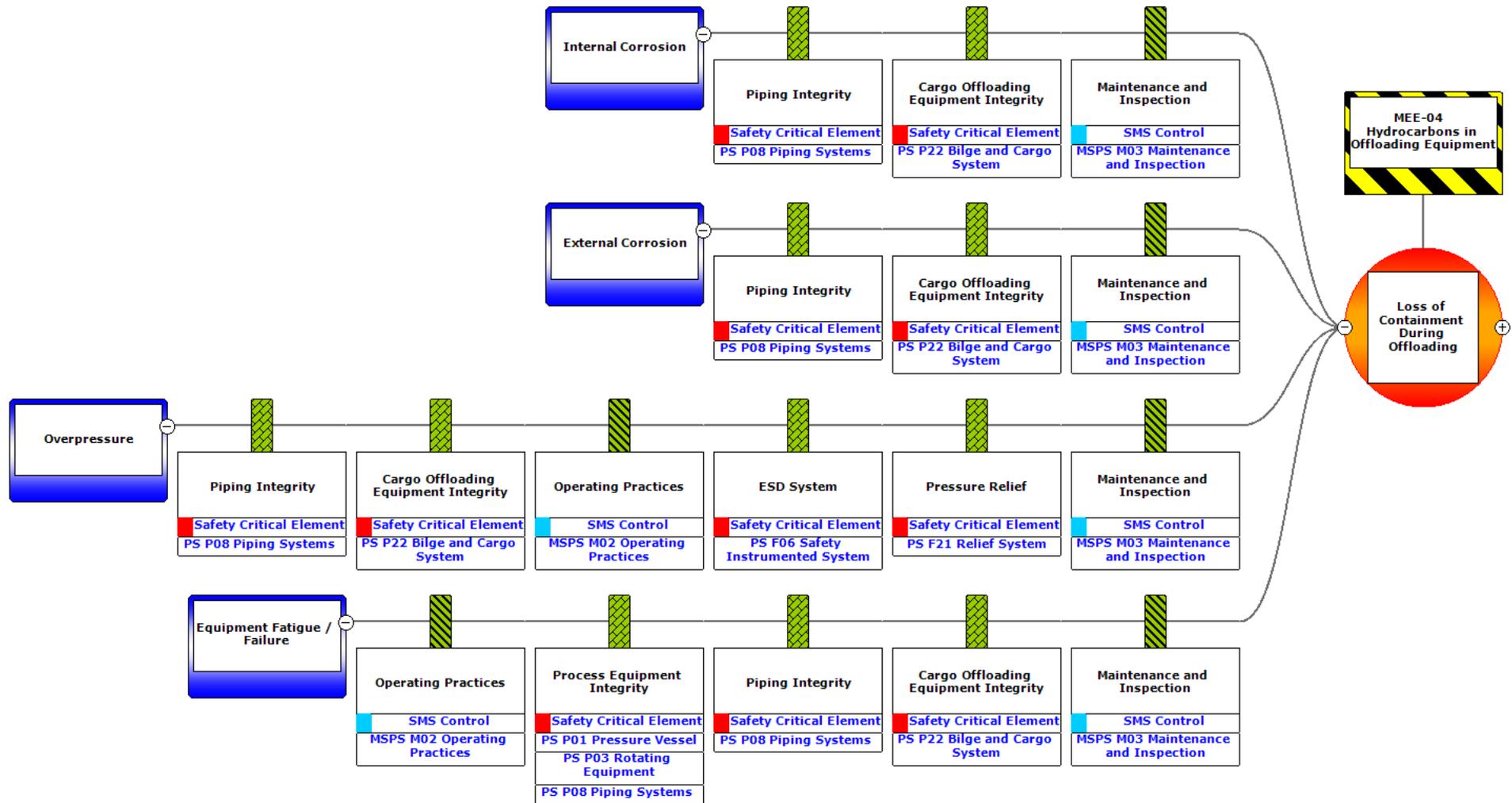


Figure 6-16: MEE-04 floating production, storage and offloading facility offloading loss of containment (Causes 1 to 4)

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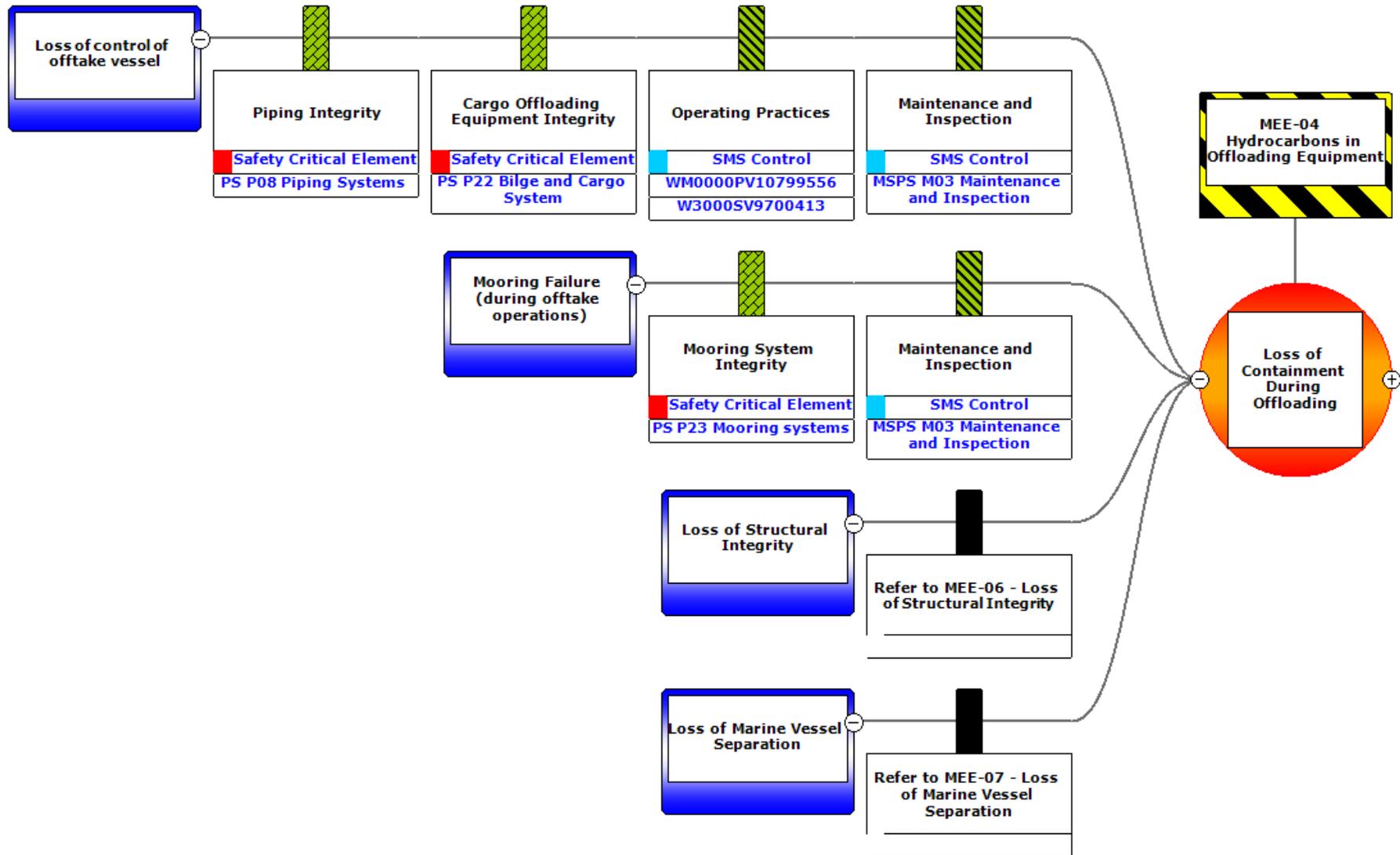


Figure 6-17: MEE-04 floating production, storage and offloading facility offloading loss of containment (Causes 5 to 8)

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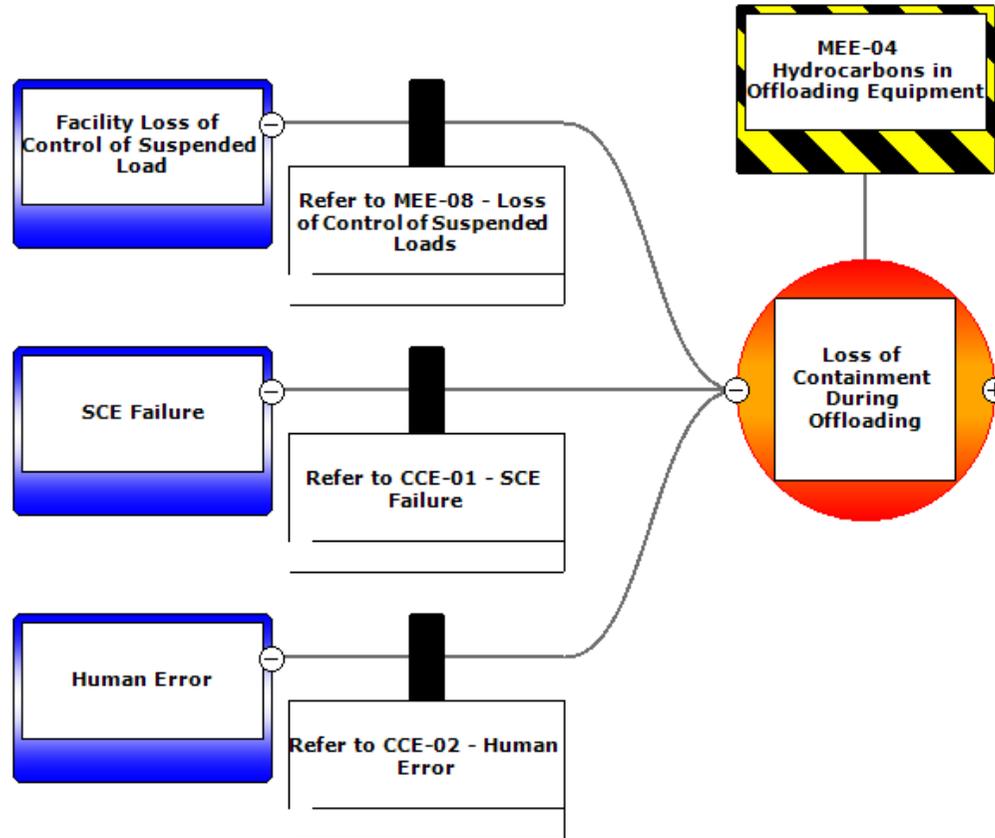


Figure 6-18: MEE-04 floating production, storage and offloading facility offloading loss of containment (Causes 9 to 11)

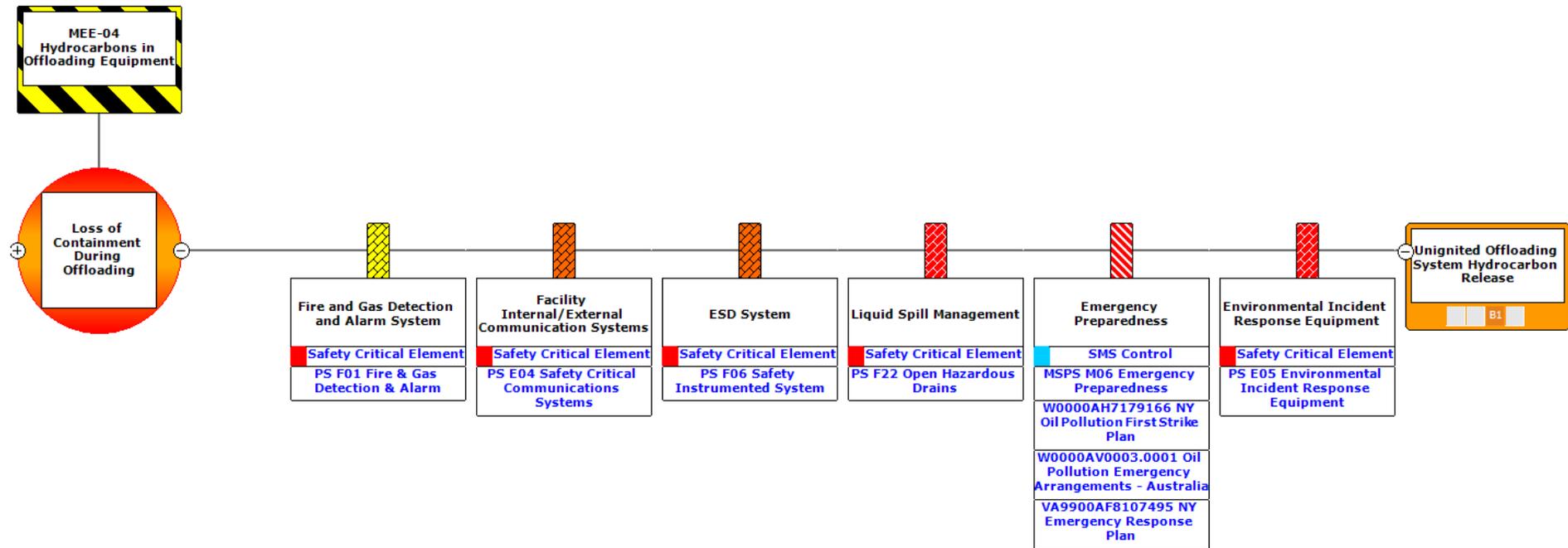


Figure 6-19: MEE-04 offloading equipment loss of containment (Outcome)

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MEE-04 Offloading Equipment Loss of Containment – Demonstration of ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect (Refer to Table 6-16)</i>	<i>Control Adopted</i>
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain offloading equipment hydrocarbon containing infrastructure integrity.	P08 – Piping Systems P22 – Bilge, Ballast and Cargo System P23 – Mooring Systems F06 – Safety Instrumented System F21 – Relief System	Prevention (Technical)	Yes C 16.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes C 13.2
Engineering Controls	Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards.	F01 – Fire and Gas Detection and Alarm Systems	Detection (Technical)	Yes C 16.2
Engineering Controls	Maintain Safety Instrumented System (Safety Instrumented Functions and ESD actions) to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant and equipment in a safe condition (e.g. through appropriate isolation of hazardous inventories) so as to prevent or mitigate the effects of an MEE.	F06 – Safety Instrumented System	Reduction/Control (Technical)	Yes C 13.3
Engineering Controls	Maintain stability and reduce hull stresses during offloading to prevent or mitigate an MEE.	P22 – Bilge, Ballast and Cargo System	Mitigation (Technical)	Yes C 16.3
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 15.4

MEE-04 Offloading Equipment Loss of Containment – Demonstration of ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect (Refer to Table 6-16)</i>	<i>Control Adopted</i>
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to; <ul style="list-style-type: none"> • identify hazards that have the potential to cause a MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with a MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> • M02 – Operating Practices • M03 – Maintenance and Inspections. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections	Prevention (Administration)	Yes See Section 7
Procedures and Administration	Implement offloading procedures: <ul style="list-style-type: none"> • Offtake Tanker FPSO Compatibility Procedure • Tanker Assurance Procedure. 	Offtake Tanker FPSO Compatibility Procedure Tanker Assurance Procedure	Prevention (Administration)	Yes See Section 7

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MEE-04 Offloading Equipment Loss of Containment – Demonstration of ALARP				
Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
ALARP Statement:				
<p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a low likelihood unplanned hydrocarbon release from an offloading equipment loss of containment.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the offloading system and ensuring the equipment is operated within the design envelope through operating practices and assurance through maintenance and inspection. If hydrocarbon loss of containment occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural controls, it is considered that MEE risk associated with offloading equipment loss of containment is managed to ALARP.</p>				

Demonstration of Acceptability

Acceptability Statement:

Offloading equipment loss of containment has been evaluated as having a 'moderate' (B1) risk rating. As per **Section 2**, Woodside considers 'moderate' (B1) risk ratings as broadly acceptable if the adopted controls are implemented. Due to the consequence associated with MEE-04, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.

Acceptability is demonstrated with regard to the considerations described in **Section 6.8.3** (MEE-01) (the considerations include principles of ecologically sustainable development, internal context, external context and other requirements (includes laws, policies, standards and conventions)).

EPOs, EPSs and MC

Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 16 Offloading loss of containment risks to the environment limited to High ⁵⁸ during the Petroleum Activities Program.	C 16.1 Maintain offloading equipment hydrocarbon-containing infrastructure integrity.	PS 16.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P08 – Piping Systems, to: <ul style="list-style-type: none"> - provide minimum required mechanical integrity for identified Safety and Environment Critical Piping so as to prevent a loss of containment that may result in an MEE (for operation within defined integrity limits) • P22 – Bilge, Ballast and Cargo System, to: <ul style="list-style-type: none"> - maintain hull stress and vessel stability within integrity limits • P23 – Mooring Systems, to: <ul style="list-style-type: none"> - provide station keeping within allowable excursion envelope - provide ability to disconnect facility from mooring on demand - provide ability to disconnect offtake tanker from facility on demand 	Refer to MC 1.5.1 Section 6.6.1.

⁵⁸ As defined in **Section 2.6.3**.

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
		<ul style="list-style-type: none"> • F06 – Safety Instrumented System, to: <ul style="list-style-type: none"> - detect and respond to pre-defined initiating conditions to protect mechanical integrity • F21 – Relief System, to: <ul style="list-style-type: none"> - protect pressurised equipment, equipment exposed to high pressures and piping from a loss of containment to prevent escalation to an MEE. 	
	Refer to C 13.2 Section 6.8.3.	Refer to PS 13.2 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 14.2 Section 6.8.4.	PS 14.2 Section 6.8.4.	Refer to MC 1.5.1 Section 6.6.1.
	C 16.3 Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards	PS 16.2 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F06 – Safety Instrumented System, to: <ul style="list-style-type: none"> - detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant and equipment in a safe condition to prevent or mitigate the effects of an MEE. 	Refer to MC 1.5.1 Section 6.6.1.
	C 16.3 Maintain stability and reduce hull stresses during offloading to prevent or mitigate an MEE.	PS 16.3 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P22 – Bilge, Ballast and Cargo System. to: <ul style="list-style-type: none"> - maintain hull stress and vessel stability within integrity limits. 	Refer to MC 1.5.1 Section 6.6.1.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 13.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4.1 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.6.1.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.7 Unplanned Hydrocarbon Release: Floating Production, Storage and Offloading Facility Cargo Tank Loss of Containment (MEE-05)

Context		
Facility Operations – Section 3.6.13 Facility Operations – Section 3.6.13 Support Vessel Operations – Section 3.7	Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10	Consultation – Section 5

Impacts and Risks Evaluation Summary

Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Hydrocarbon release caused by a cargo tank loss of containment.		✓	✓	✓	✓	✓	✓	B	A	1	H	LCS RBA SV	Acceptable if ALARP	EPO 17

Description of Source of Impact

Background

The NY FPSO maintains a total useable cargo tank storage volume of at least 1,200,000 barrels (excluding slops tank space), which is distributed among 14 cargo tanks. A loss of containment from a cargo tank may result in a significant volume of hydrocarbons (NY topsides blend crude) being released to the marine environment. Due to the potential consequences, a cargo tank loss of containment is considered an MEE (MEE-05). The potential hazard sources that could instigate a cargo tank loss of containment are:

- corrosion
- overpressure or under pressure
- tank leakage/over filling
- equipment fatigue
- loss of containment between cargo tanks
- loss of cargo tank atmosphere control
- cargo tank vacuum.

Escalation from other MEEs can cause NY FPSO cargo tank loss of containment includes:

- loss of structural integrity (MEE-06) (**Section 6.8.8**)
- loss of marine vessel separation (MEE-07) (**Section 6.8.9**)
- loss of control of suspended load from facility lifting operations (MEE-08) (**Section 6.8.10**).

A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in **Section 6.8.11**.

FPSO Cargo Tank Loss of Containment – Credible Scenarios

A cargo tank loss of containment could result in a release of between 14,679 m³ and 31,462 m³ of stabilised NY topsides blend crude if a single cargo tank lost its entire inventory when full. However, Woodside has determined there is a credible loss of containment scenario caused by bulkhead damage resulting in the loss of two adjacent cargo tanks during off-take operations. As such, the worst-case credible loss of containment scenario from a cargo tank spill on NY is taken as 40,828 m³ of NY topsides blend crude. This volume is based on the complete release of the maximum volumes of the two largest port or starboard wing tanks. The cargo tank loss of containment scenario assumes the initial release of half of the maximum credible spill volume within 20 minutes, with the remaining hydrocarbons released over the following 16 hours. A loss of containment of diesel fuel stored within the vessel hull

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due to vessel collision is also a credible event. The single largest inventory of diesel within the hull is the Port Inner Diesel Oil Bunker Tank (1683.3 m³). The cargo tank loss of containment event has been selected to inform the risk assessment due to the larger potential release volume. Release characteristics for cargo tank loss of containment scenario are summarised in (Table 6-21).

Table 6-21: Summary of worst-case cargo tank loss of containment scenario

Scenario	Hydrocarbon	Duration (hours)	Depth (m)	Latitude (D°M'S'")	Longitude (D°M'S'")	Total Hydrocarbon Release Volume (m ³)
FPSO cargo tank loss of containment	NY topsides blend crude	20,414 m ³ in first 20 minutes, remainder in next 16 hours	Surface	21°26'02.661"S	114° 04' 01.325"E	40,828

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company's 60-year history, it has not experienced any cargo tank integrity events that have resulted in significant releases or significant environmental impacts. The NY facility has never experienced a worst-case cargo tank loss of containment in its operational history.

Decision Type

A decision type 'B' has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in Section 2.6.3) and hydrocarbon spill trajectory modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

The release of hydrocarbons from an NY FPSO cargo tank loss of containment is considered an MEE (MEE-05). The hazard associated with this MEE is hydrocarbons within the NY FPSO cargo tanks.

Quantitative Spill Risk Assessment

Stochastic spill modelling of the maximum credible spill for NY FPSO cargo tank loss of containment scenario was undertaken by RPS APASA, on behalf of Woodside. The simulation was a phased release (20,414 m³ over 20 minutes, with 20,414 m³ released over the following 16 hours) based on the assumptions in Section 6.8.1. Modelling was undertaken over all seasons to address year-round operations. This is considered to provide a conservative estimate of the EMBA and the potential impacts from the identified worst-case credible release volume for an NY FPSO cargo tank loss of containment.

Hydrocarbon Characteristics

The NY topsides crude is considered to be representative of the hydrocarbons that may credibly be stored within the NY FPSO cargo tanks. Refer to Section 6.8.1.1 for the characteristics of NY topsides blend crude.

Weathering Characteristics

The mass balance forecast for the constant-wind case (Figure 6-20) for NY Topsides Blend shows that approximately 18.1% of the oil is predicted to evaporate within 24 hours. Under these calm conditions, most of the remaining oil will remain on the water surface and will weather at a slower rate due to being comprised of the longer-chain compounds with higher boiling points. Evaporation of the residual compounds will slow significantly, and they will then be subject to more gradual decay through biological and photochemical processes.

Under the variable-wind case (Figure 6-21), where the winds are of greater strength, levels of entrainment into the water column are forecasted to become significant, with a resultant decrease in the mass of oil floating on the surface and subject to atmospheric weathering. Approximately 24 hours after the spill, around 69.7% of the oil mass is forecast to have entrained and a further 11.2% is forecast to have evaporated, leaving around 5.8% of the oil floating on the water surface.

The increased level of entrainment in the variable-wind case will result in a higher percentage of biological and photochemical degradation, where the decay of the floating slicks and oil droplets in the water column occurs at an approximate rate of 3.2% per day with an accumulated total of ~23.5% after 7 days, in comparison to a rate of ~1.1% per day and an accumulated total of 7.2% after 7 days in the constant-wind case. Given the large proportion of entrained oil and the tendency for it to remain mixed in the water column, the remaining hydrocarbons will decay and/or evaporate over time scales of several weeks to a few months. This long weathering duration will extend the area of potential effect, requiring the break-up and dispersion of the slicks and droplets to reduce concentrations below the thresholds considered in this study.

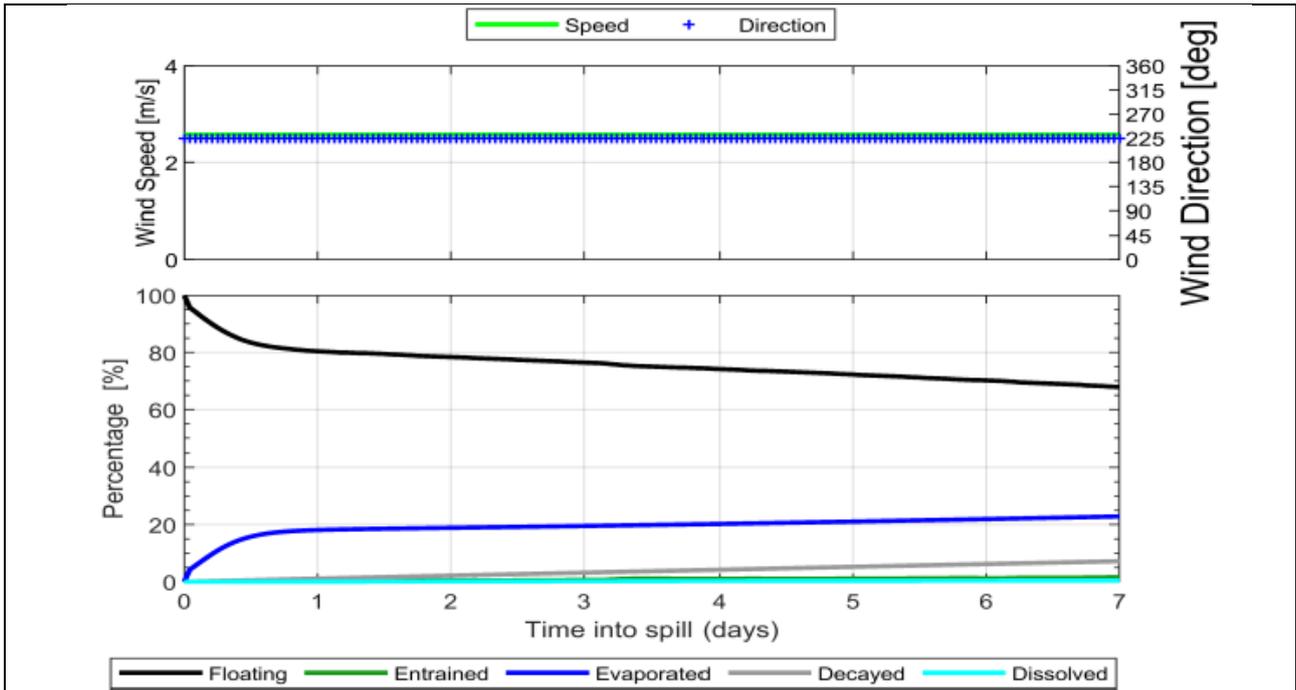


Figure 6-20: Proportional mass balance plot representing the weathering of Ngujima-Yin Toppides Blend spilled onto the water surface as a one-off release (50 m³) and subject to a constant 5 kn (2.6 m/s) wind at 27°C water temperature and 25°C air temperature

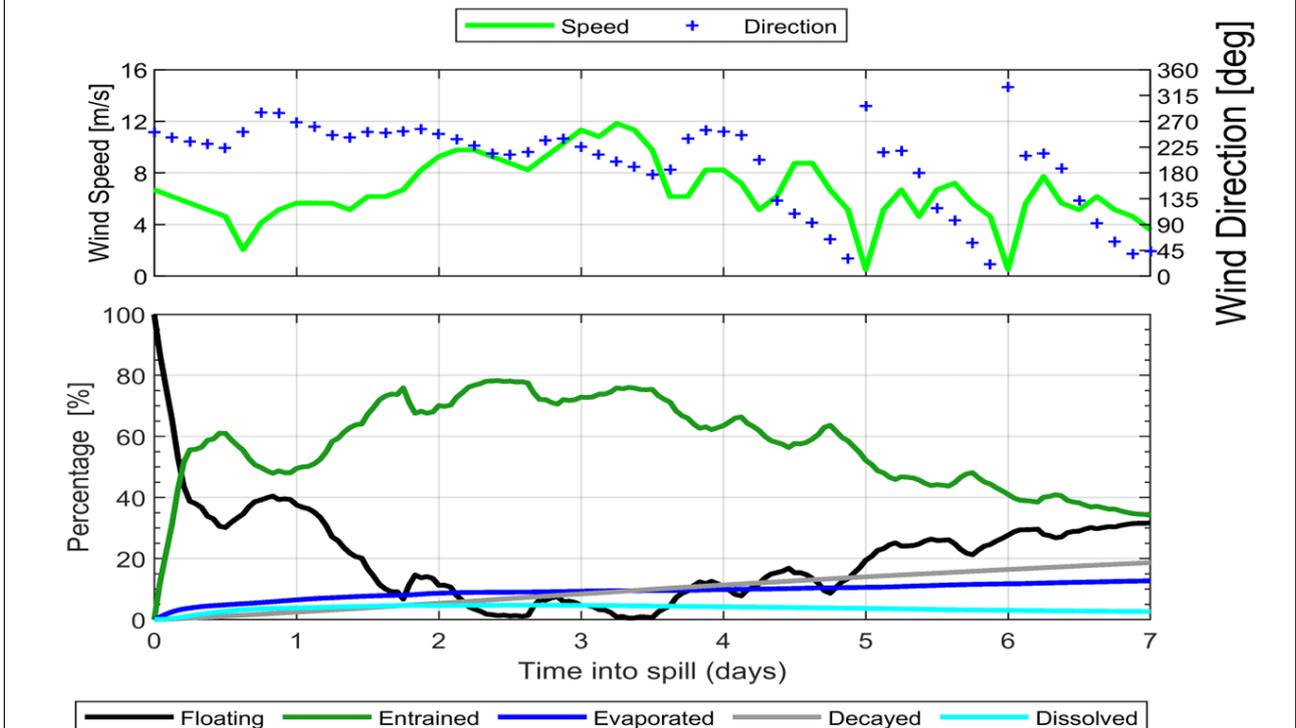


Figure 6-21: Proportional mass balance plot representing the weathering of Ngujima-Yin Toppides Blend spilled onto the water surface as a one-off release (50 m³) and subject to variable wind at 27°C water temperature and 25°C air temperature

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance), the likelihood has been taken as 1 (highly unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon were considered during the impact assessment for a maximum credible spill scenario from NY FPSO cargo tank loss of containment (presented in the following section). These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May Be Affected

Surface Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for surface hydrocarbons from the NY FPSO cargo tank loss of containment scenario.

As described in **Section 6.8.1**, the EMBA depicted in these figures are a summary of all the locations where environmental thresholds could be exceeded for modelled scenarios.

The stochastic modelling results indicated floating hydrocarbons from the NY FPSO cargo tank loss of containment scenario are forecast to drift in all directions, reflecting the competing influence of both surface currents and winds across the wide area in which a slick could travel. At the surface threshold of 10 g/m², floating oil is forecast to potentially occur up to approximately 980 km from the release site. Potential contact above impact thresholds was forecast at a range of receptors.

Entrained Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for entrained hydrocarbons for the NY FPSO cargo tank loss of containment scenario. Entrained hydrocarbons above impact thresholds are likely to drift in all directions from the release location, with an entrained plume extending a considerable distance to the south. Stochastic modelling results indicated entrained hydrocarbon concentrations above impact thresholds may occur up to 1000 km from the release location. Potential contact above impact thresholds was forecast at a range of receptors.

Dissolved Hydrocarbons

The stochastic hydrocarbon spill modelling EMBA for dissolved hydrocarbons for the NY FPSO cargo tank loss of containment scenario. In the event of an offloading equipment loss of containment scenario occurring, a plume of dissolved hydrocarbons would potentially extend in all directions, with a plume most likely to extend south from the release location. Dissolved hydrocarbon concentrations above impact thresholds may occur up to 715 km from the release location. Potential contact above impact thresholds was forecast at a range of receptors.

Accumulated Hydrocarbons

The stochastic hydrocarbon spill modelling results indicated the potential for shoreline accumulation above impact thresholds was high. Modelling indicated a maximum local accumulation of 16 kg/m² (15,999 g/m²) at Cape Range, Exmouth, Ningaloo Coast WH and MP (State) Ningaloo Coast. Shoreline accumulation was also forecast for a range of other receptors above impact thresholds at lower accumulation levels.

Consequence Assessment Summary

The credible worst-case hydrocarbon spill scenario that may arise from MEE-05 may impact upon a number of environmental receptors. Potential impacts of a hydrocarbon spill to these receptors are considered in MEE-01; refer to **Section 6.8.3** for a description of potential impacts.

The credible worst-case hydrocarbon volumes that can credibly be released by MEE-05 are considerably smaller than the credible worst-case loss of well containment volumes considered in MEE-01 (**Section 6.8.3**). Additionally, the credible release durations are significantly shorter. These considerations are reflected in the significantly smaller EMBA.

MEE-05 FPSO Cargo Tanks Loss of Containment – Risk Analysis

Bowtie analysis was undertaken to assess MEE-05; refer to **Figure 6-22, Figure 6-23, Figure 6-24 and Figure 6-25.**

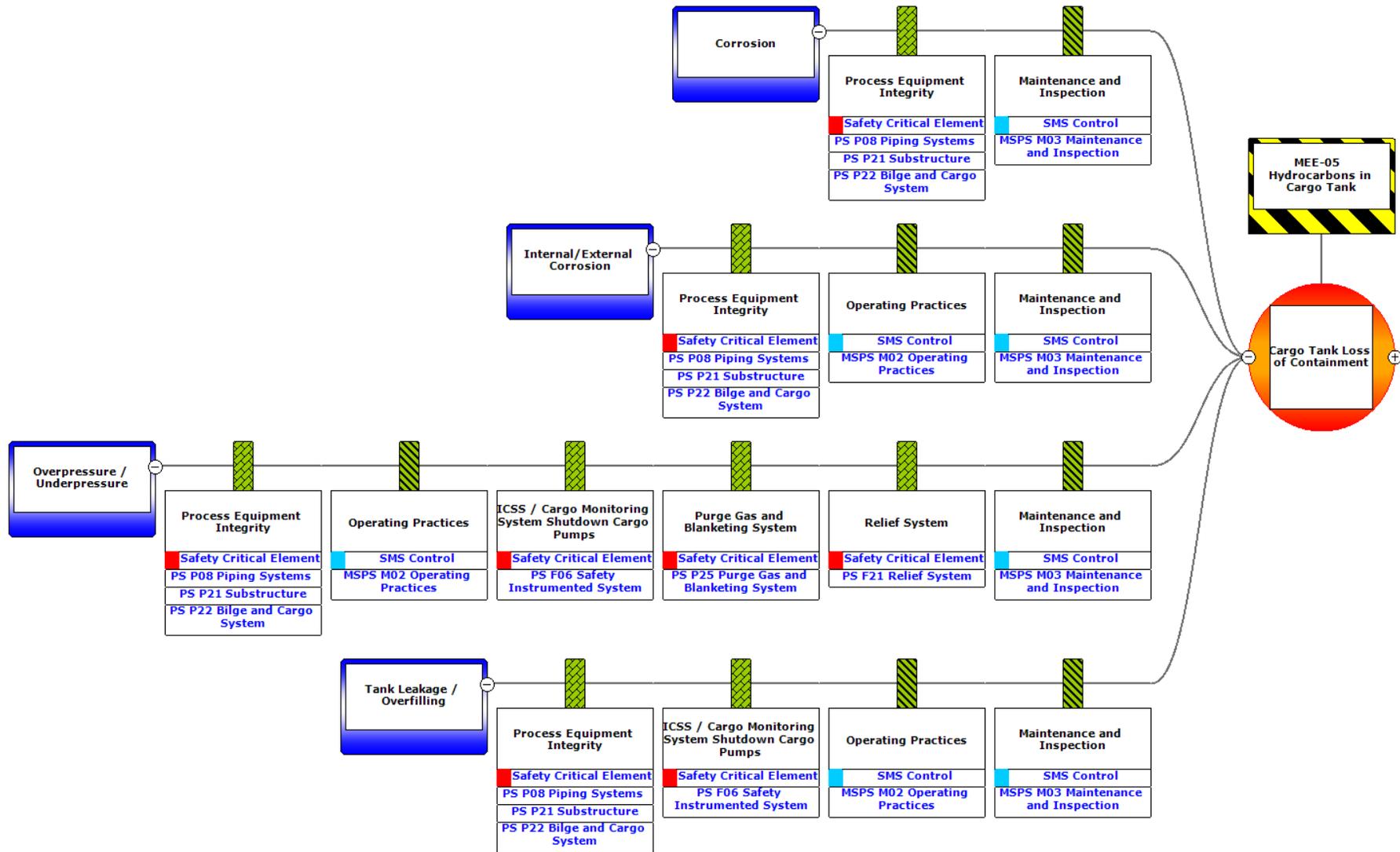


Figure 6-22: MEE-05 cargo tank loss of containment (Causes 1 to 4)

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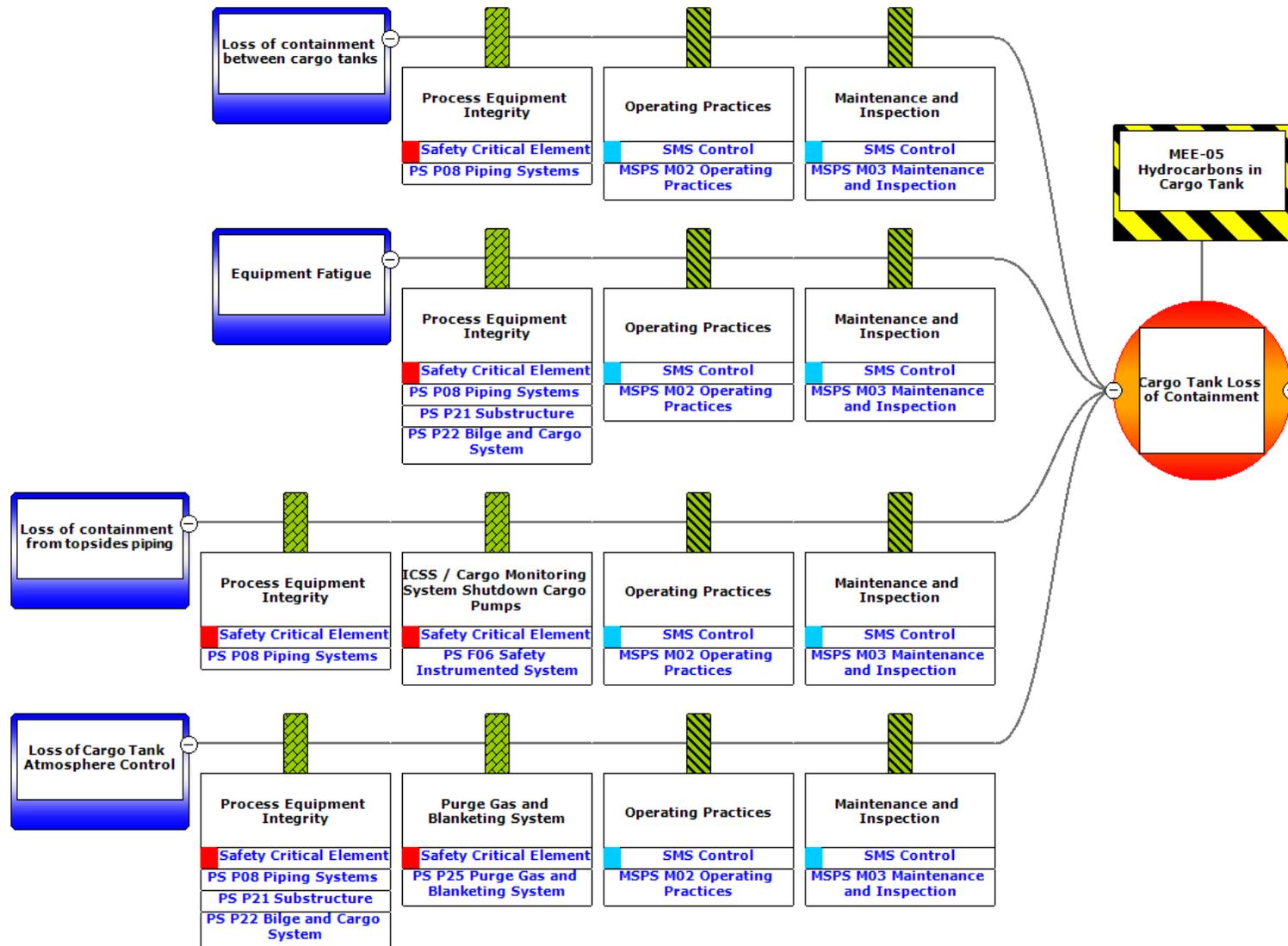


Figure 6-23: MEE-05 cargo tank loss of containment (Causes 5 to 8)

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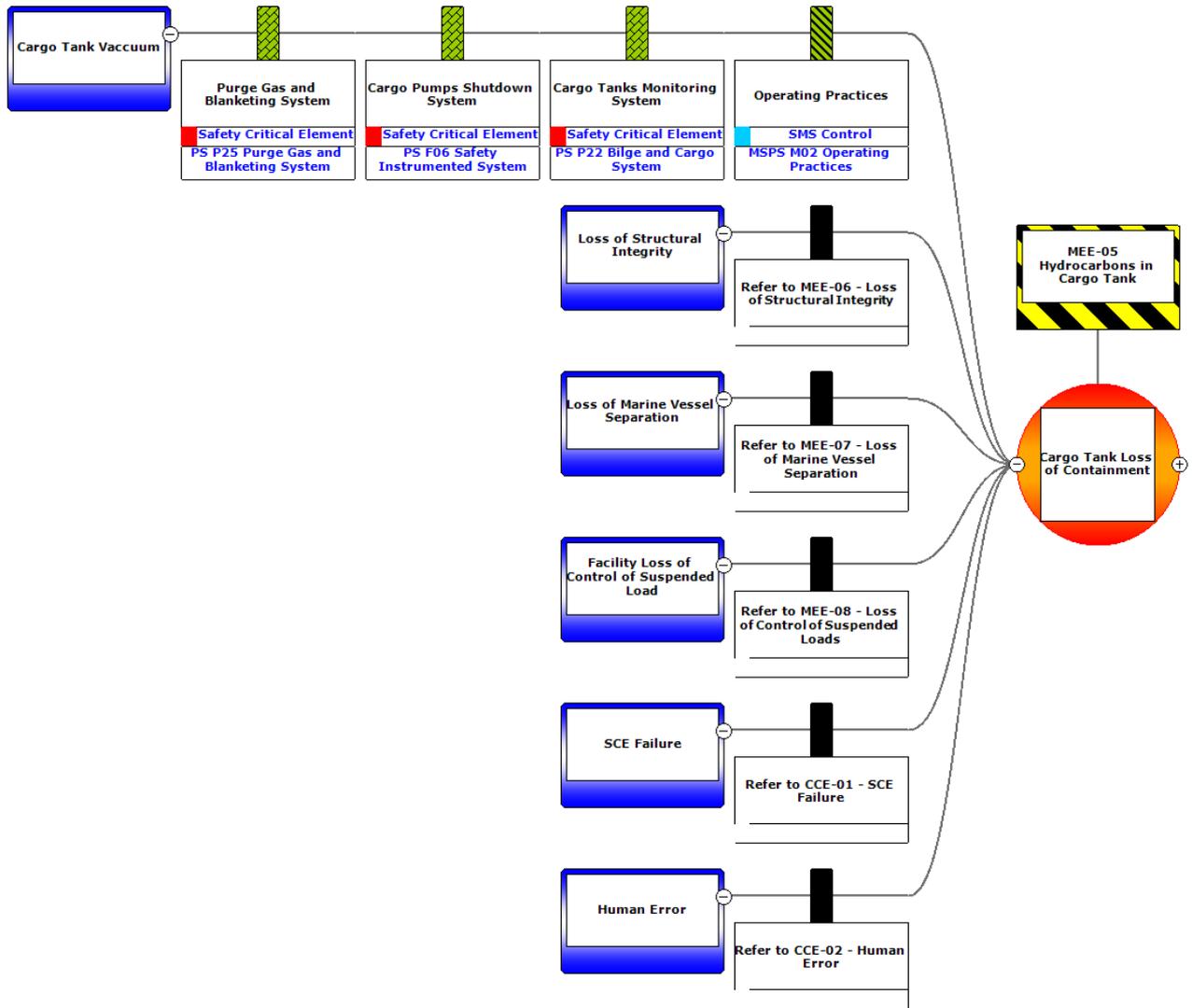


Figure 6-24: MEE-05 cargo tank loss of containment (Causes 9 to 14)

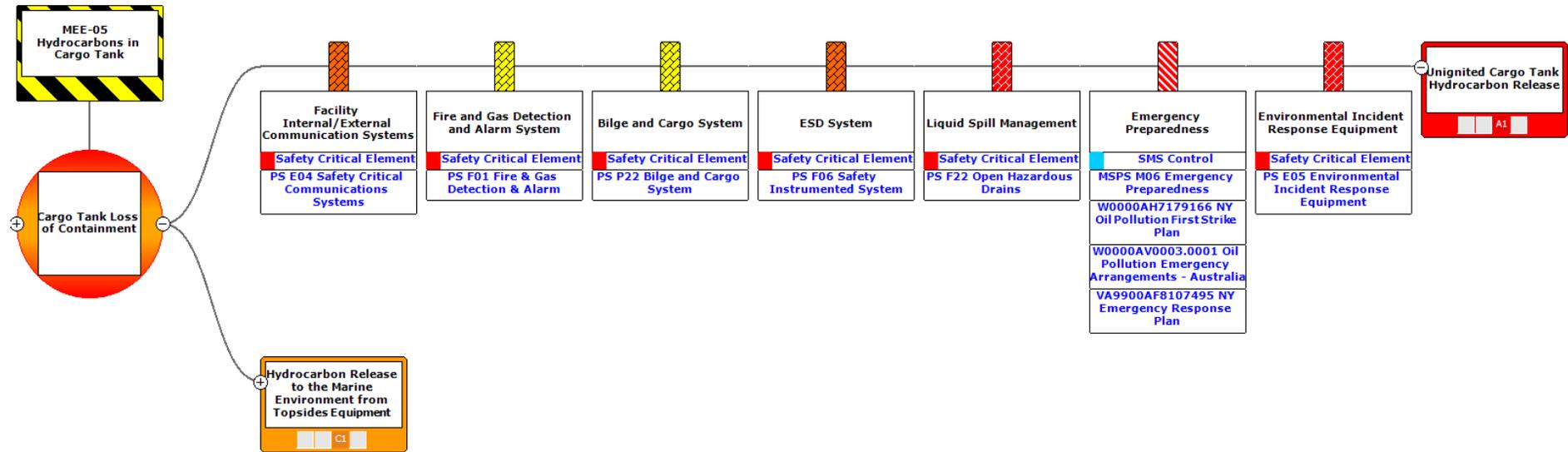


Figure 6-25: MEE-05 cargo tank loss of containment (Outcomes)

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MEE-05 FPSO Cargo Tanks Loss of Containment – Demonstration of ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain cargo system hydrocarbon-containing infrastructure integrity.	P08 – Piping Systems P21 – Substructure P22 – Bilge, Ballast and Cargo System P25 – Purge Gas and Blanketing System F06 – Safety Instrumented System F21 – Relief System	Prevention (Technical)	Yes C 17.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes C 13.2
Engineering Controls	Maintain Fire and Gas Detection and Alarm Systems to facilitate prevention and response to fire or gas hazards.	F01 – Fire and Gas Detection and Alarm Systems	Detection (Technical)	Yes C 14.2
Engineering Controls	Maintain bilge detection and alarm systems to mitigate an MEE.	P22 – Bilge, Ballast and Cargo System	Detection (Control)	Yes C 17.2
Engineering Controls	Maintain Safety Instrumented System (Safety Instrumented Functions and ESD actions) to detect and respond to pre-defined initiating conditions and/or initiate responses that put the process plant and equipment in a safe condition (e.g. through appropriate isolation of hazardous inventories) so as to prevent or mitigate the effects of an MEE.	F06 – Safety Instrumented System	Reduction/Control (Technical)	Yes C 13.3
Engineering Controls	Maintain hazardous open drains to remove and control environmentally hazardous liquid discharges to prevent or mitigate an MEE.	F22 – Open Hazardous Drains	Mitigation (Technical)	Yes C 17.3

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MEE-05 FPSO Cargo Tanks Loss of Containment – Demonstration of ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect (Refer to Table 6-16))	Control Adopted
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 13.4
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause an MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential environmental.	Vincent NY FPSO Safety Case	Prevention (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> • M02 – Operating Practices • M03 – Maintenance and Inspections. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections	Prevention (Administration)	Yes See Section 7

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MEE-05 FPSO Cargo Tanks Loss of Containment – Demonstration of ALARP				
Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
ALARP Statement:				
<p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a low likelihood unplanned hydrocarbon release from an NY FPSO cargo tank loss of containment.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the NY FPSO and ensuring the equipment is operated within the design envelope through operating practices and assurance through maintenance and inspection. If hydrocarbon loss of containment occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural controls, it is considered that MEE risk associated with NY FPSO cargo tank loss of containment is managed to ALARP.</p>				

MEE-05 FPSO Cargo Tanks Loss of Containment – Demonstration of ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect (Refer to Table 6-16))	Control Adopted
Demonstration of Acceptability				
<p>A cargo tank loss of containment has been evaluated as having a ‘high’ (A1) risk rating (via the consideration of applicable MEEs). As per Section 2, Woodside considers ‘high’ (A1) risk ratings as acceptable if managed to ALARP. Due to the consequence associated with MEE-05, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.</p> <p>Acceptability is demonstrated with regard to the considerations described in Section 6.8.3 (MEE-01) (the considerations include principles of ESD, internal context, external context and other requirements (includes laws, policies, standards and conventions)).</p>				

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 17</p> <p>Cargo loss of containment risks to the environment limited to High⁵⁹ during the Petroleum Activities Program.</p>	<p>C 17.1</p> <p>Maintain cargo system hydrocarbon-containing infrastructure integrity.</p>	<p>PS 17.1</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • P08 – Piping Systems, to: <ul style="list-style-type: none"> – provide minimum required mechanical integrity for identified Safety and Environment Critical Piping so as to prevent a loss of containment that may result in an MEE (for operation within defined integrity limits) • P21 – Substructure, to: <ul style="list-style-type: none"> • provide and maintain structural integrity to support SCE systems under all design conditions through service life • prevent structural failure from contributing to the escalation of 	<p>Refer to MC 1.5.1</p> <p>Section 6.6.1.</p>

⁵⁹ As defined in **Section 2.6.3.**

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
		an MEE by providing support/ protection of SCE systems during an emergency event, and/or support containment of environmentally hazardous material <ul style="list-style-type: none"> • P22 – Bilge, Ballast and Cargo System, to: <ul style="list-style-type: none"> - maintain hull stress and vessel stability within integrity limits • P25 – Purge Gas and Blanketing System, to: <ul style="list-style-type: none"> - safely prevent the creation of an explosive atmosphere by either preventing oxygen ingress or dilution of hydrocarbon stream • F06 – Safety Instrumented System, to: <ul style="list-style-type: none"> - detect and respond to pre-defined initiating conditions to protect mechanical integrity • F21 – Relief System, to: <ul style="list-style-type: none"> - protect pressurised equipment, equipment exposed to high pressures and piping from a loss of containment to prevent escalation to an MEE. 	
	Refer to C 13.2 Section 6.8.3.	Refer to PS 13.2 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 14.2 Section 6.8.4.	Refer to PS 14.2 Section 6.8.4.	Refer to MC 1.5.1 Section 6.6.1.
C 17.2 Maintain bilge detection and alarm systems to mitigate an MEE.		Refer to PS 17.2 Section 6.8.6.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.3 Section 6.8.3.	Refer to PS 13.3 Section 6.8.6.	Refer to MC 1.5.1 Section 6.6.1.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 17.3 Maintain hazardous open drains to remove and control environmentally hazardous liquid discharges to prevent or mitigate an MEE.	PS 17.3 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related damage to SCEs for: <ul style="list-style-type: none"> • F22 – Open Hazardous Drains; to: <ul style="list-style-type: none"> – prevent escalation of an incident following loss of containment, fire and/or explosion by removing or containing flammable liquid from hazardous areas – support appropriate containment and disposal of environmentally hazardous liquids to avoid damage to the environment. 	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 13.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4.1 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.8.3.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.8 Unplanned Hydrocarbon Release: Loss of Structural Integrity (MEE-06)

Context														
Topsides – Section 3.5.1 Process Description – Section 3.6.3 Hydrocarbon and Chemical Inventories and Selection – Section 3.9				Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted						Evaluation							
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Hydrocarbon release caused by a loss of structural integrity of the FPSO hull, leading to: <ul style="list-style-type: none"> • MEE-02 – Subsea Flowline and Riser Loss of Containment • MEE-03 – Topsides Loss of Containment • MEE-04 – Offloading Equipment Loss of Containment • MEE-05 – FPSO Cargo Tank Loss of Containment. 		✓	✓	✓	✓	✓	✓	B	A	1	H	LCS RBA CV SV	Acceptable if ALARP	EPO 18
Description of Source of Risk														
<p>Background</p> <p>The NY FPSO contains hydrocarbons in a range of infrastructure, including cargo tanks, process inventory, non-process inventory, flowlines and risers.</p> <p>Woodside has identified the potential for hydrocarbon release due to the extreme environmental conditions or other causes which result in an exceedance of the design criteria and a catastrophic failure of the facility and individual</p>														

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equipment (e.g. cranes, flare, etc) which could cause damage to adjacent equipment, leading to hydrocarbon releases to the environment.

Extreme environmental conditions (cyclone) could result in loss of structural integrity of the NY FPSO resulting in significant oil spill to the environment (from risers, cargo tanks and/or topsides equipment).

There is also the possibility of NY FPSO capsize or foundering caused by strong winds and extreme waves. This may induce pipework fatigue and loose/dislodged objects/projectiles causing impact to equipment/pipework resulting in loss of containment. Structural failures could be localised, or could, in more extreme situations, result in loss of containment from multiple storage locations on the NY FPSO.

Extreme environmental conditions may also result in movement of the vessel and result in releases from flowlines/risers (MEE-02) or topsides equipment or storage (MEE-03 to MEE-05). The worst-case environmental consequence ranking is a 'A' for these events related to Loss of Structural Integrity.

The release of hydrocarbons as a result of loss of structural integrity is considered a Major Environment Event (MEE-06). The hazard associated with this MEE is hydrocarbons in the NY facility.

The following hazards could lead to loss of containment from the NY FPSO topsides:

- internal and external corrosion
- extreme weather
- mooring system failure
- vessel stresses through loading and stability
- fire or explosion escalation to structure (including events captured in MEE-02 to MEE-05).

A number of common failure causes due to human error and SCE failures are presented in the generic Human Error and SCE bowties in **Section 6.8.11**.

Loss of Structural Integrity – Credible Scenarios

A loss of structural integrity could result in a significant release of hydrocarbons. A loss of structural integrity may result in credible spill scenarios consistent with a subsea flowline and riser loss of containment (MEE-02, **Section 6.8.4**), topsides loss of containment (MEE-03, **Section 6.8.5**), offloading equipment loss of containment (MEE-04, **Section 6.8.6**) and NY FPSO cargo tank loss of containment (MEE-05, **Section 6.8.7**). The worst-case credible spill scenarios associated with these MEEs are discussed in the relevant sections above; refer to these sections for further information.

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company's 60-year history, it has not experienced any loss of structural integrity events that have resulted in significant releases or significant environmental impacts. The NY facility has never experienced a worst-case loss of containment in its operational history.

Decision Type

A decision type 'B' has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill trajectory modelling. Company and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

The release of hydrocarbons from a loss of structural integrity is considered an MEE (MEE-06). The hazard associated with this MEE is hydrocarbons contained within the NY FPSO and associated infrastructure.

Quantitative Spill Risk Assessment

Credible worst case stochastic spill modelling for the scenarios associated with MEE-01 (**Section 6.8.3**), MEE-02 (**Section 6.8.4**), MEE-03 (**Section 6.8.4**) and MEE-05 (**Section 6.8.7**) has been undertaken. Results of these modelling studies have been used to inform the consequence assessment for these MEEs; these assessments are applicable to the consequence assessment for a loss of structural integrity event.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance), the likelihood has been taken as 1 (highly unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon were considered during the impact assessment for a loss of structural integrity. These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

MEE-06 Loss of Structural Integrity – Risk Analysis

Bowtie analysis was undertaken to assess MEE-06; refer to **Figure 6-26** to **Figure 6-29**.

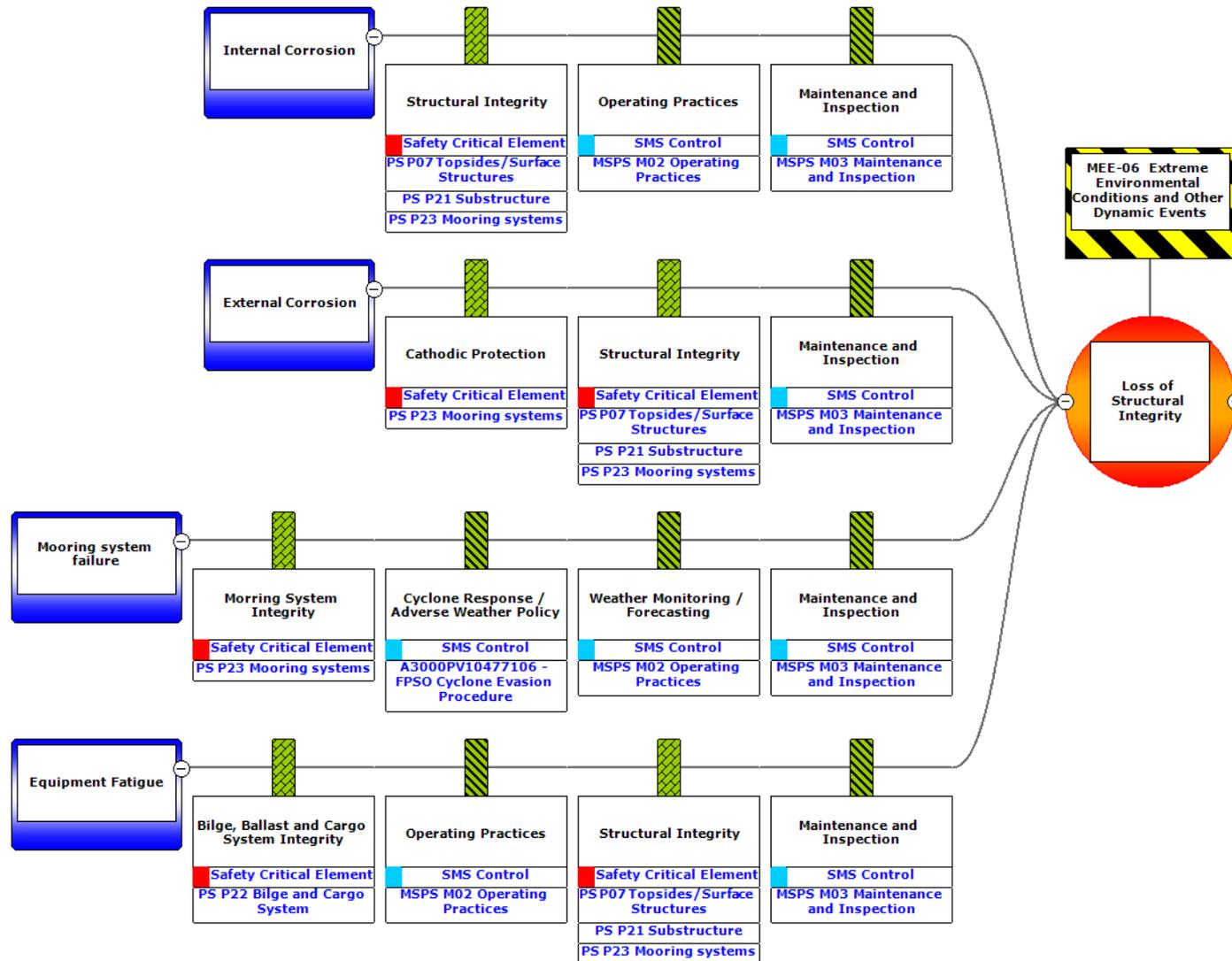


Figure 6-26: MEE-06 loss of structural integrity (Causes 1 to 4)

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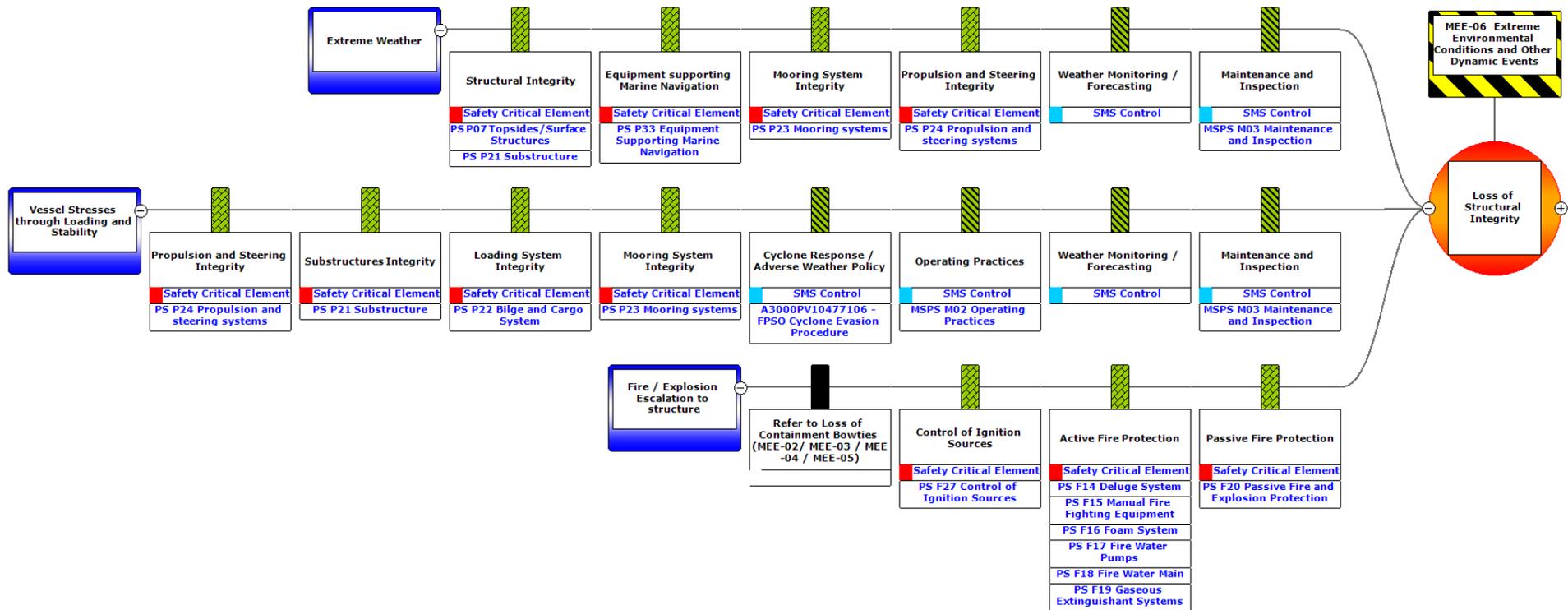


Figure 6-27: MEE-06 loss of structural integrity (Causes 5 to 7)

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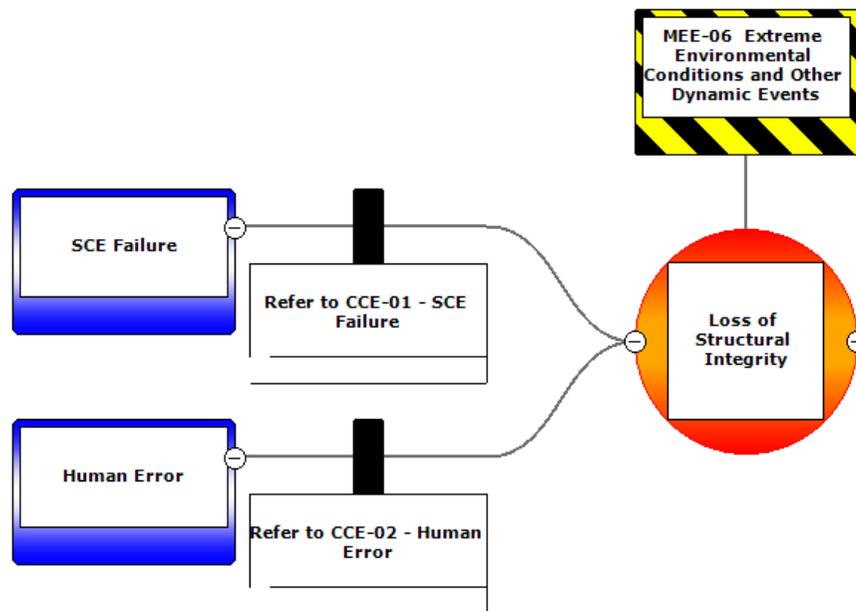


Figure 6-28: MEE-06 loss of structural integrity (Causes 8 and 9)

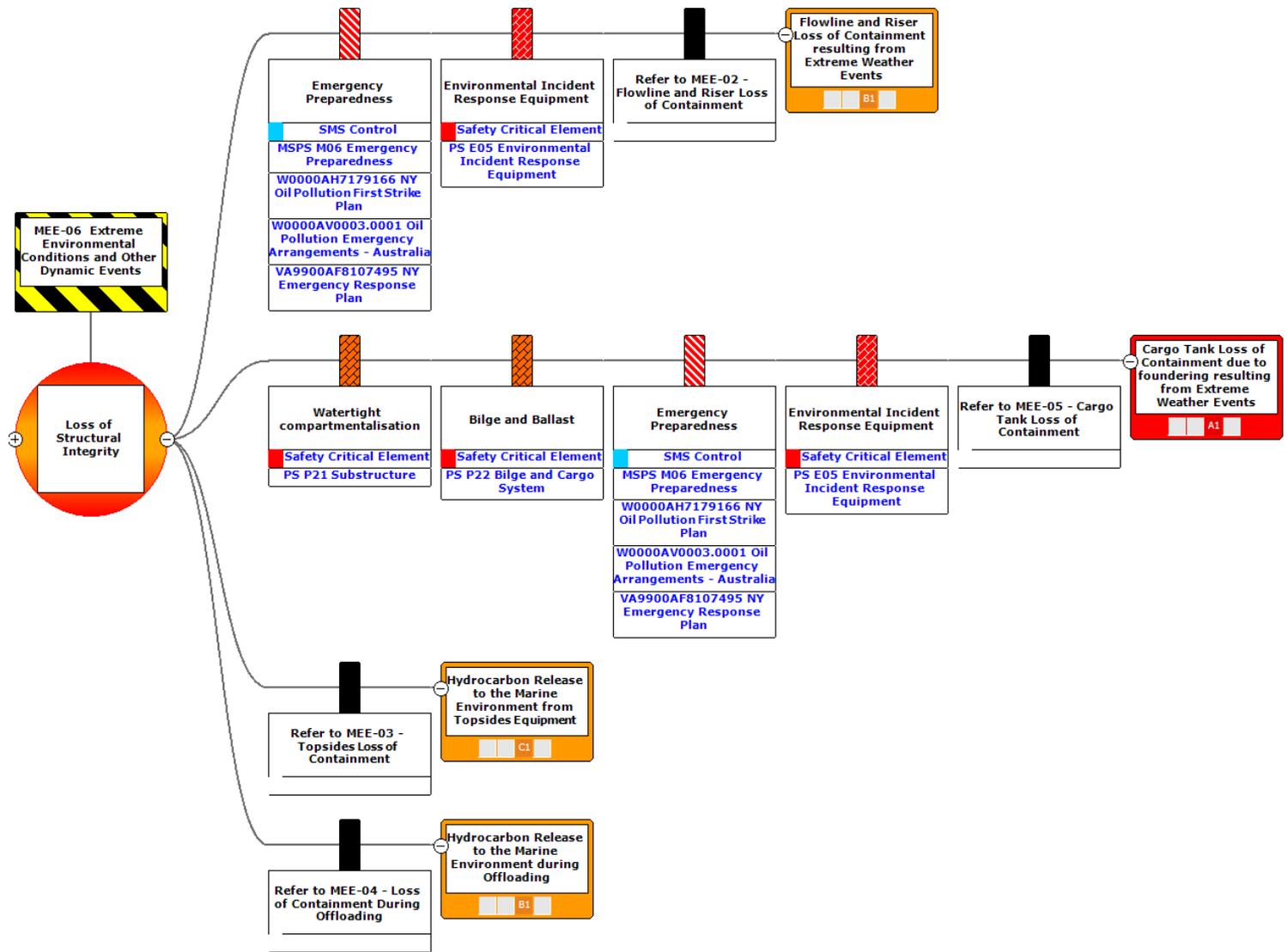


Figure 6-29: MEE-06 loss of structural integrity (Outcomes)

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MEE-06 Loss of Structural Integrity – Demonstration of ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain structural integrity to ensure availability of critical systems during a major accident or environment event, and prevent structural failures from contributing to escalation of a MEE.	P07 – Topsides/ Surface Structures P21 – Substructures P22 – Bilge, Ballast and Cargo System Integrity P23 – Mooring Systems P24 – Propulsion and Steering Systems P33 – Equipment Supporting Marine Navigation	Prevention (Technical)	Yes C 18.1
Engineering Controls	Maintain control of ignition sources and fire protection to prevent loss of structural integrity.	F14 – Deluge System F15 – Manual Fire Fighting Equipment F16 – Foam System F17 – Fire Water Pump F18 – Fire Water Main F19 – Gaseous Extinguishant Systems F20 – Passive Fire Protection F27 – Control of Ignition Sources	Prevention (Technical)	Yes C 18.2
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain availability of critical external and internal communication systems to facilitate response to accidents and emergencies.	E04 – Safety Critical Communication Systems	Mitigation (Technical)	Yes C 13.2
Engineering Controls	Maintain vessel stability and structural integrity to prevent structural failures from contributing to escalation of an MEE.	P21 – Substructure P22 – Bilge, Ballast and Cargo System	Mitigation (Technical)	Yes C 18.3
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 13.4

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MEE-06 Loss of Structural Integrity – Demonstration of ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause an MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> • M02 – Operating Practices • M03 – Maintenance and Inspections. 	MSPS-02 Operating Practices MSPS-03 Maintenance and Inspections	Prevention (Administration)	Yes See Section 7

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MEE-06 Loss of Structural Integrity – Demonstration of ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> • M06 – Emergency Preparedness • NY Emergency Response Plan • NY Oil Pollution First Strike Plan • Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> • ongoing hazard identification, risk assessment and the identification of control measures • ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a very low likelihood of a loss of structural integrity.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the NY FPSO and ensuring the equipment is operated within the design envelope through operating practices and assurance through maintenance and inspection. If a loss of structural integrity occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural control of NY FPSO operations, it is considered that MEE risk associated a loss of structural integrity is managed to ALARP.</p>				

Demonstration of Acceptability

Acceptability Statement:

A loss of structural integrity has been evaluated as having a 'high' (A1) risk rating (via the consideration of applicable MEEs). As per **Section 2**, Woodside considers 'high' (A1) risk ratings as acceptable if managed to ALARP. Due to the consequence associated with MEE-06, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.

Acceptability is demonstrated with regard to the considerations described in **Section 6.8.3** (MEE-01) (the considerations include principles of ESD, internal context, external context and other requirements (includes laws, policies, standards and conventions)).

EPOs, EPSs and MC			
<i>Environmental Performance Outcomes</i>	<i>Controls</i>	<i>Environmental Performance Standards</i>	<i>Measurement Criteria</i>

<p>EPO 18 Structural integrity loss of containment risks to the environment limited to High during the Petroleum Activities Program.</p>	<p>C 18.1 Maintain structural integrity to ensure availability of critical systems during a major accident or environment event, and prevent structural failures from causing or contributing to escalation of an MEE.</p>	<p>PS 18.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • P07 – Topsides/Surface Structures • P21 – Substructures, to together: <ul style="list-style-type: none"> - provide and maintain structural integrity to support SCE systems under all design conditions through service life - prevent structural failure from contributing to the escalation of an MEE by providing support/protection of SCE systems during an emergency event, and/or support containment of environmentally hazardous material • P22 – Bilge, Ballast and Cargo System Integrity, to: <ul style="list-style-type: none"> - maintain hull stress and vessel stability within integrity limits • P23 – Mooring Systems, to: <ul style="list-style-type: none"> - provide station, keeping within allowable excursion envelope - provide ability to disconnect facility from mooring on demand - provide ability to disconnect offtake tanker from facility on demand • P24 – Propulsion and Steering Systems • P33 – Equipment Supporting Marine Navigation, to together (within Operational Area): <ul style="list-style-type: none"> - manoeuvre the facility under self-propulsion away from hazardous conditions - provide critical information to enable safe navigation of the FPSO - to allow the FPSO to disconnect and avoid adverse environmental conditions exceeding structural integrity limits. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>
	<p>C 18.2</p>	<p>PS 18.2</p>	<p>Refer to MC 1.5.1</p>

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EPOs, EPs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	Maintain control of ignition sources and fire protection to prevent loss of structural integrity.	Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • F14 – Deluge System • F15 – Manual Fire Fighting Equipment • F16 – Foam System • F17 – Fire Water Pump • F18 – Fire Water Main • F19 – Gaseous Extinguishant Systems, to together: <ul style="list-style-type: none"> - provide reliable and secure delivery of firefighting medium (e.g. firewater, gaseous suppressant, foam) at the required flows, pressures, coverage and discharge rates to reduce the likelihood of escalation - where safe to do so, enable facility emergency response personnel to apply fire-fighting medium to support fire control and limit escalation <ul style="list-style-type: none"> • F20 – Passive Fire Protection, to: - mitigate the effects of a fire or explosion by maintaining the integrity of critical structure and equipment and limiting the potential for escalation <ul style="list-style-type: none"> • F27 – Control of Ignition Sources, to: - prevent ignition of flammable or explosive atmospheres within identified Hazardous Areas. 	Section 6.6.1.
	C 13.2 Section 6.8.3.	PS 13.2 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 18.3 Maintain vessel stability and structural integrity to prevent structural failures from contributing to escalation of an MEE.	PS 18.3 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P21 – Substructure, to: <ul style="list-style-type: none"> - prevent structural failure from contributing to the escalation of an MEE by providing support/protection of SCE systems during an emergency event, and/or support containment of environmentally hazardous material • P22 – Bilge, Ballast and Cargo System, to: <ul style="list-style-type: none"> - maintain hull stress and vessel stability within integrity limits. 	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 15.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 13.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.8.3.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.9 Unplanned Hydrocarbon Release: Loss of Marine Vessel Separation (MEE-07)

Context														
Facility Layout and Description – Section 6.7.1. Hydrocarbon Inventories – Section 3.9 Support Vessel Operations – Section 3.7				Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10				Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Hydrocarbon release from flowline and riser to the marine environment and atmosphere		✓	✓	✓	✓	✓	✓	B	A	1	M	LCS RBA CV SV	Acceptable if ALARP	EPO 19
Hydrocarbon release from topsides equipment, offloading equipment or cargo tanks to the marine environment and atmosphere.		✓	✓	✓	✓	✓	✓	B	A	1	H			
Description of Source of Impact														
<p>A loss of marine vessel separation between a vessel and the NY FPSO may result in a loss of hydrocarbon containment from the facility and/or the release of fuel from the vessel. A vessel collision with the NY FPSO has been identified as a potential MEE (MEE-07). Vessel collisions can arise from:</p> <ul style="list-style-type: none"> visiting vessel collisions associated with support vessels and offloading tankers – ships which are visiting can accidentally collide with the NY FPSO during approach to, or while manoeuvring or stationed alongside, the FPSO errant passing vessel collision – ships which are not visiting the NY FPSO (i.e. passing vessels) can, for one reason or another, move off-course and collide with the FPSO. <p>The different collision hazards involve significantly different sized vessels and collision speeds, hence, differing impact energies and consequences, and have been assessed.</p> <p>Visiting Vessels</p> <p>Visiting vessels are defined as those which are routinely used to service, or offtake cargo from, the NY FPSO. Operating procedures will dictate how vessels are operated, loaded and unloaded, but it will generally occur so that the prevailing winds move the vessel away from the facility. The primary causes of visiting vessel collisions are failure to follow safe procedures and communication errors between the marine vessels and facility operations. These errors could be worsened by station keeping failures or operations in adverse weather conditions.</p> <p>The following design features and procedures are in place to reduce the likelihood of a major collision or mitigate the consequences from a visiting vessel impact:</p> <ul style="list-style-type: none"> facility marine operating procedures 														

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- marine assurance activities
- supply or standby vessel contractor selection and management
- third party maintenance and inspection
- third party position keeping equipment
- weather monitoring.

Errant Passing Vessels

Errant passing vessels are defined as third party vessels that enter the facility 500m Petroleum Safety Zone, but do not call at installations (i.e. not supply or standby vessels). The collision can be powered or drifting. Either has the potential to cause significant damage to the NY FPSO. The causes of errant passing vessel collisions include: failure of propulsion or steering systems; adverse weather conditions resulting in poor visibility or rough seas or human error.

Woodside implements the following controls to help prevent passing vessels entering the NY FPSO 500 m Petroleum Safety Zone:

- facility marked on Marine Charts
- collision warning system
- visual navigation aids (NAVAIDS) as well as flares and lighting to make the facility highly visible to approaching vessels
- marine radio package (critical communications)
- facility marine procedures.

A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in **Section 6.8.11**.

Loss of Marine Vessel Separation – Credible Scenarios

A loss of marine vessel separation could result in a significant release of hydrocarbons. Hydrocarbon releases will result in a spill to the marine environment as described in **Section 6.8.4** (MEE-02 – subsea flowline and riser loss of containment), **Section 6.8.5** (MEE-03 – Topsides loss of containment), **Section 6.8.5** (MEE-04 – offloading equipment loss of containment) and **Section 6.8.7** (MEE-05 – FPSO cargo tank loss of containment). Worst case hydrocarbon release scenarios that could result from loss of marine vessel separation are discussed in the relevant sections referenced above. Relevant trajectory modelling, as applicable to these scenarios, is also discussed in the relevant sections. In addition, vessel cargo, including marine diesel inventory, could be spilled if the cause of the loss of facility integrity was a collision from a support vessel.

A loss of vessel separation may lead to the accidental release of marine diesel from the fuel tanks on the vessel(s) involved. For a vessel collision to result in the worst-case scenario of a hydrocarbon spill potentially impacting an environmental receptor, several factors must align as follows:

- the identified causes of vessel interaction must result in a collision
- the collision must have enough force to penetrate the vessel hull
- the collision must be in the exact location of the fuel tank
- the fuel tank must be full, or at least of volume which is higher than the point of penetration.

The probability of the chain of events described above aligning, to result in a breach of fuel tanks resulting in a spill that could potentially affect the marine environment is considered remote. Given the offshore location of the Operational Area, vessel grounding in relation to the Petroleum Activities Program is not considered a credible risk.

A collision between the NY FPSO or subsea support vessel with a third-party vessel (i.e. commercial shipping, other petroleum related vessels and commercial fishing vessels) was considered the only credible event that could release a significant quantity of marine diesel to the environment. This was assessed as being credible but highly unlikely given:

- the facility support vessels typically operate close to the NY FPSO (an area avoided by commercial shipping and fishing)
- the presence of subsea vessels in the Operational Area is typically temporary (e.g. while undertaking IMMR activities)
- vessels undertaking the Petroleum Activities Program typically operate of low speeds or are stationary
- the standard vessel operations and equipment in place to prevent collision at sea, and the construction and placement of storage tanks.

The largest tank of a facility support or subsea support vessel is unlikely to exceed 105 m³. As such, the worst-case credible spill of marine diesel from a vessel is considered to be an instantaneous loss of the contents of a 105 m³ tank.

The marine diesel component of the topsides loss of containment MEE described in **Section 6.8.5** is considered a suitable surrogate for the risk assessment of a 105 m³ release of marine diesel from a vessel for the following reasons:

- the volume is considerably larger, making the assessment inherently conservative
- the release location (the NY FPSO) is the area where vessels undertaking the Petroleum Activities Program most commonly occur
- the hydrocarbon type (marine diesel) is consistent with fuel used by vessels undertaking the Petroleum Activities Program.

Refer to **Section 6.8.9** for a description of the surrogate marine diesel release scenario and environmental risk assessment.

Decision Type, Risk Analysis and ALARP Tools

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company's 60-year history, it has not experienced any loss of vessel separation events that have resulted in significant releases or significant environmental impacts. The NY facility has never experienced a worst-case hydrocarbon release from a loss of vessel separation in its operational history.

Decision Type

A decision type 'B' has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill trajectory modelling. Company values and societal values were also considered in the demonstration of ALARP and acceptability through peer review, benchmarking and consultation.

A loss of marine vessel separation is considered an MEE (MEE-07). The hazard associated with this MEE is the hydrocarbon inventory of the NY FPSO, subsea flowlines and riser, and fuel onboard vessels.

Quantitative Spill Risk Assessment

Credible worst-case hydrocarbon scenarios for MEE-02, MEE-03, MEE-04 and MEE-05 are considered to apply to a loss of marine vessel separation, as they may credibly arise from damage to the NY facility and loss of vessel fuel. Refer to **Sections 6.8.4, 6.8.5 and 6.8.7** for additional information on quantitative spill risk assessments for these scenarios.

Hydrocarbon Characteristics

Hydrocarbon characteristics are provided in described in more detail in **Section 6.8.1**.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance, infrastructure marked on marine charts), the likelihood has been taken as 1 (Highly Unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbon were considered during the impact assessment for a loss of vessel separation. These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

MEE-07 Loss of Marine Vessel Separation – Risk Analysis

Bowtie risk analysis was undertaken to assess MEE-07, refer to **Figure 6-30** and **Figure 6-31** for bowtie diagrams.

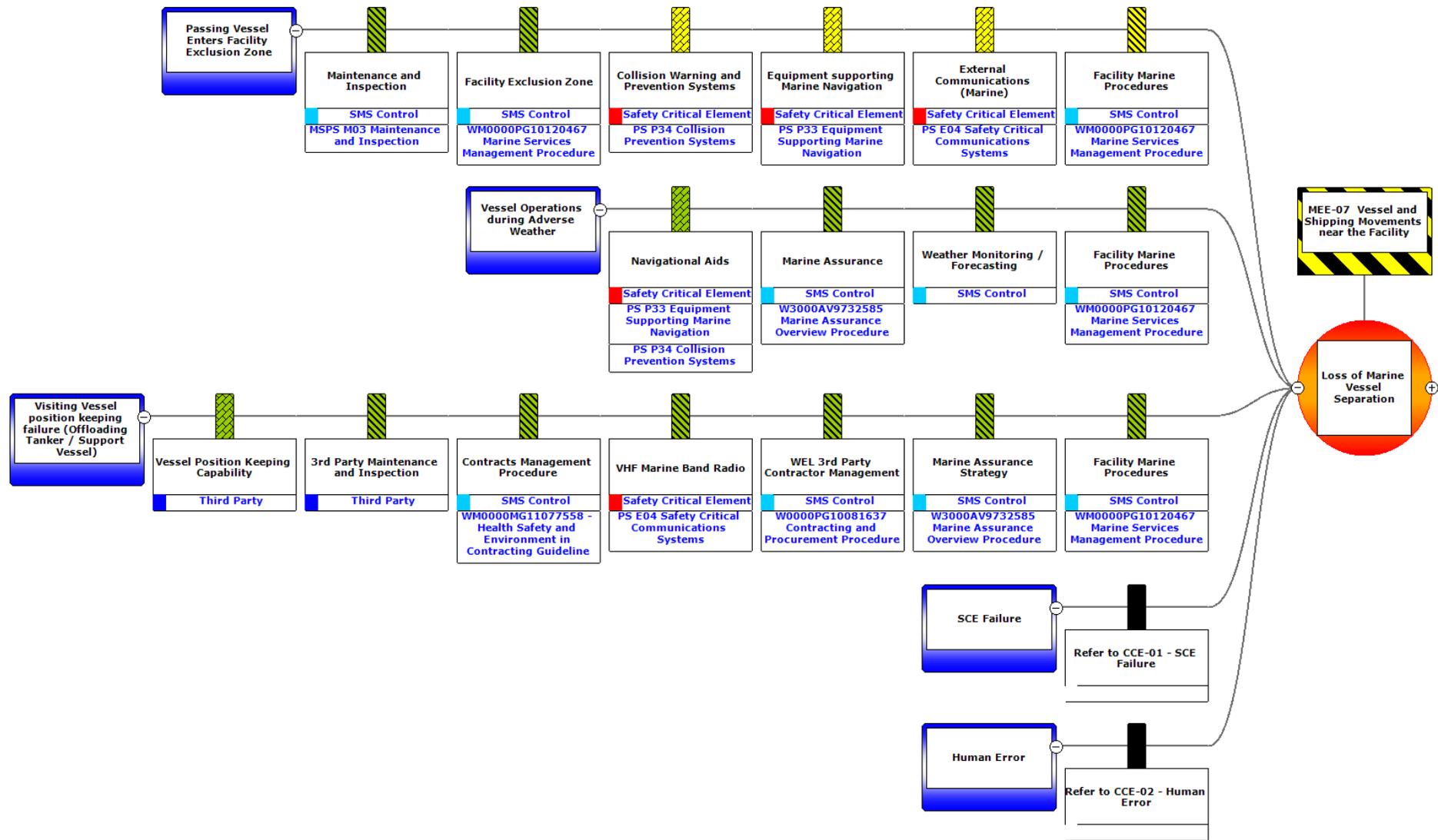


Figure 6-30: MEE-07 loss of marine vessel separation (Causes)

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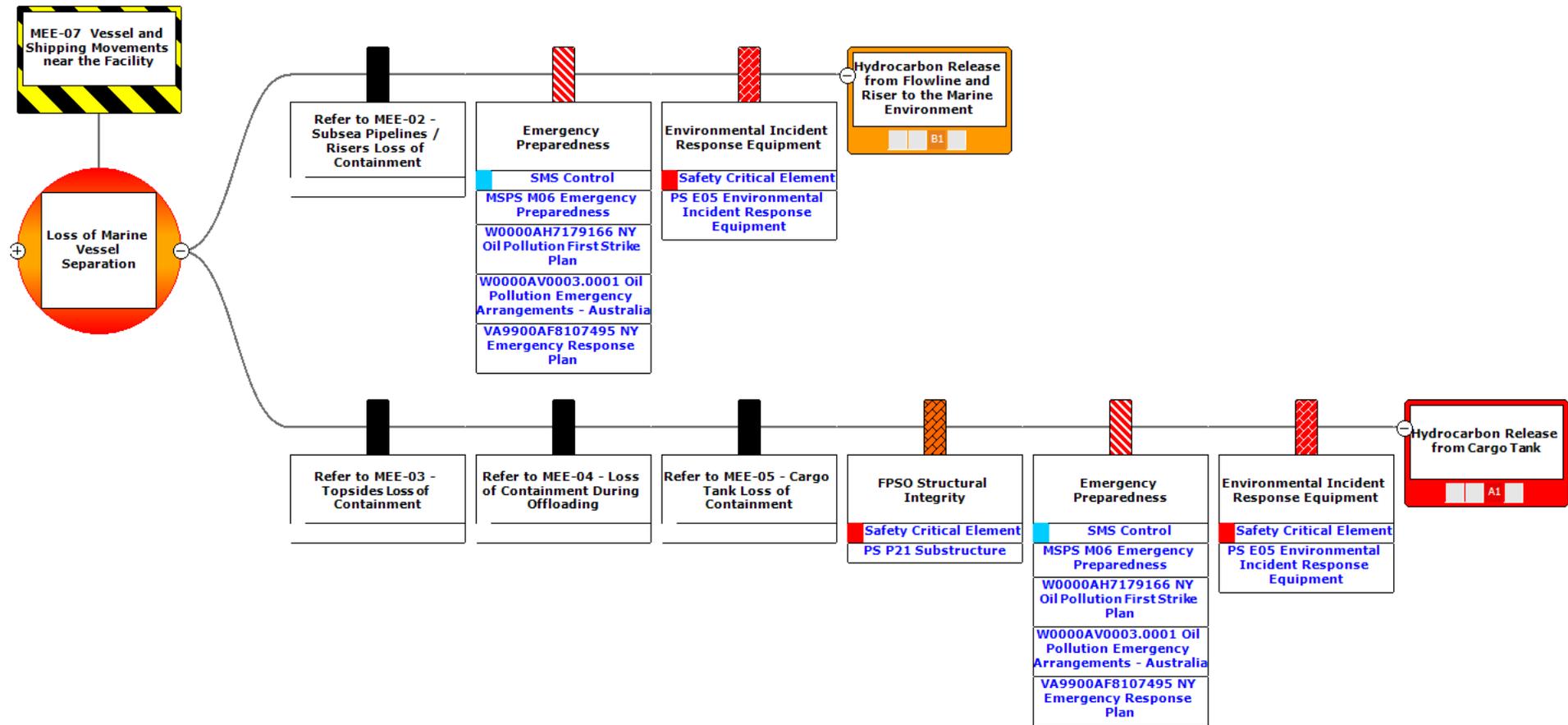


Figure 6-31: MEE-07 loss of marine vessel separation (Outcomes)

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MEE-07 Loss of Marine Vessel Separation – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain collision warning systems and navigational aids to alert facility of a potential collision with marine vessels, and to alert marine vessels of facility location so that they may take timely action to avoid the facility and hence reduce likelihood of collision.	P34 – Collision Prevention Systems P33 – Equipment Supporting Marine Navigation E04 – Safety Critical Communications Systems	Detection (Technical)	Yes C 19.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain hull structural integrity to prevent structural failures as a result of ship collision from contributing to escalation of an MEE.	P21 – Substructure	Reduction (Technical)	Yes C 19.2
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 13.4
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause an MAE • detail assessment of MAE risks • describe the physical barriers' SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6

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MEE-07 Loss of Marine Vessel Separation – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure. 	Marine Services Management Procedure Marine Assurance Overview Procedure Contracting and Procurement Procedure	Prevention (Administration)	Yes See Section 7
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> M06 – Emergency Preparedness NY Emergency Response Plan NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 See Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.6.3) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> ongoing hazard identification, risk assessment and the identification of control measures ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				

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**MEE-07 Loss of Marine Vessel Separation – Demonstration of ALARP
ALARP Control Measures**

<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
<p>ALARP Statement:</p> <p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a very low likelihood of a loss of marine vessel separation.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the NY FPSO and ensuring the equipment is operated within the design envelope through operating practices and assurance through maintenance and inspection. If a loss of marine vessel separation occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural control of NY FPSO operations, it is considered that MEE risk associated a loss of marine vessel separation is managed to ALARP.</p>				

Demonstration of Acceptability

<p>Acceptability Statement:</p> <p>A loss of marine vessel separation has been evaluated as having 'moderate' (B1) and 'high' (A1) risk ratings (via the consideration of applicable MEEs). As per Section 2, Woodside considers 'moderate' (B1) and 'high' (A1) risk ratings as acceptable if managed to ALARP. Due to the consequence associated with MEE-07, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.</p> <p>Acceptability is demonstrated with regard to the considerations described in Section 6.8.3 (MEE-01) (the considerations include principles of ESD, internal context, external context and other requirements (includes laws, policies, standards and conventions)).</p>

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
<p>EPO 19 Loss of marine vessel separation risks to the environment limited to High⁶⁰ during the Petroleum Activities Program.</p>	<p>C 19.1 Maintain collision warning systems, navigational aids and critical communications systems to alert facility of a potential collision with marine vessels, and to alert marine vessels of facility location, so that either party may take timely action to avoid the other and hence reduce likelihood of collision.</p>	<p>PS 19.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • P34 – Collision Prevention Systems, to: <ul style="list-style-type: none"> - alert marine vessels of facility location so that they may take timely action to avoid the facility and hence reduce likelihood of collision - alert facility of a potential collision with marine vessels <ul style="list-style-type: none"> • P33 – Equipment Supporting Marine Navigation, to: <ul style="list-style-type: none"> - provide critical information to enable safe navigation of the NY FPSO in disconnected mode to avoid an MEE <ul style="list-style-type: none"> • E04 – Safety Critical Communication Systems, to: <ul style="list-style-type: none"> - allow effective ER communications in emergencies, including: <ul style="list-style-type: none"> ○ internal communications such as audible and visual warning systems, and voice communications during emergency events ○ external communications such as voice communications to adjacent facilities, aircraft and vessels, and external incident control centres during emergency events. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>

⁶⁰ As defined in **Section 2.6.3.**

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EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 19.2 Maintain hull structural integrity to prevent structural failures as a result of ship collision from contributing to escalation of an MEE.	PS 19.2 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P21 – Substructure, to: <ul style="list-style-type: none"> - provide and maintain structural integrity to support SCE systems under all design conditions through service life - prevent structural failure from contributing to the escalation of an MEE by providing support/protection of SCE systems during an emergency event, and/or support containment of environmentally hazardous material. 	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 15.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 13.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.8.3.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.10 Unplanned Hydrocarbon Release: Loss of Control of Suspended Load (MEE-08)

Context														
Facility Operations – Section 3.6.13			Physical Environment – Section 4.4 Biological Environment – Section 4.5 Protected Places – Section 4.8 Socio-cultural – Section 4.10					Consultation – Section 5						
Impacts and Risks Evaluation Summary														
Source of Risk	Environmental Value Potentially Impacted							Evaluation						
	Soil and Groundwater	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/Habitat	Species	Socio-economic	Decision Type	Consequence/Impact	Likelihood	Risk Rating	ALARP Tool	Acceptability	Outcome
Dropped object causing damage to the flowlines and riser that results in a hydrocarbon release to the marine environment and atmosphere.		✓	✓	✓	✓	✓	✓	B	B	1	M	LCS RBA CV SV	Broadly Acceptable	EPO 20
Dropped object causing damage to the topsides equipment that results in a hydrocarbon release to the marine environment and atmosphere.		✓	✓	✓	✓	✓	✓	B	B	1	M		Broadly Acceptable	
Description of Source of Risk														
<p>Lifting activities on the NY FPSO can take place from several cranes located on the FPSO. Lifts may occur between supply vessels and laydown areas, or between laydown areas. Lifting operations performed using the NY FPSO or visiting vessel cranes could potentially lead to dropped objects impacting assets (topside equipment, subsea infrastructure) inside the NY FPSO 500 m Petroleum Safety Zone. This may lead to a hydrocarbon loss of containment from topsides or subsea infrastructure. Loss of suspended load has been identified as an MEE (MEE-08). A loss of suspended load may arise from:</p> <ul style="list-style-type: none"> lifting equipment failure facility lifting operations. <p>A number of common failure causes due to human error and SCC failures are presented in the generic Human Error and SCE failure bowties in Section 6.8.11</p> <p>Loss of Control of Suspended Load – Credible Scenarios</p> <p>The potential outcome of a loss of control of a suspended load is a topsides and/or subsea flowlines and risers' loss of containment. Refer to Section 6.8.4 and Section 6.8.4 for a description of subsea and topsides loss of containments scenarios, respectively.</p>														

Decision Type, Risk Analysis and ALARP

Woodside has a good history of implementing industry standard practice in FPSO design, construction and operation. In the company’s 60-year history, it has not experienced any loss of control of suspended load events that have resulted in significant releases or significant environmental impacts.

Decision Type

A decision type ‘B’ has been applied to this risk under the Guidance on Risk Related Decision Making (Oil and Gas UK, 2014). This reflects the complexity of the risk, the higher potential consequence and stakeholder implications, should the event be realised. To align with this decision type, a further level of analysis has been applied using risk-based tools including the bowtie methodology (described in **Section 2.7**) and hydrocarbon spill trajectory modelling. Company values were also considered hydrocarbon inventory of subsea flowlines and risers, or topsides process and non-process hydrocarbons.

Quantitative Spill Risk Assessment

Credible worst-case hydrocarbon scenarios for MEE-02 and MEE-03 are considered to apply to a loss of control of suspended load, as they may credibly arise from damage to hydrocarbon containing subsea infrastructure within the 500 m Petroleum Safety Zone and NY FPSO topsides infrastructure. Refer to **Section 6.8.4** and **Section 6.8.4** for additional information on quantitative spill risk assessments for these scenarios.

Likelihood

In accordance with the Woodside Risk Matrix, given prevention and mitigation measures in place (i.e. design, inspection and maintenance), the likelihood has been taken as 1 (highly unlikely).

Consequence

The spatial extent and fate (incl. weathering) of the spilled hydrocarbons were considered during the impact assessment for a loss of vessel separation. These considerations were informed primarily by the outputs from the numerical modelling studies undertaken by RPS APASA, available information on environmental sensitivities that may credibly be impacted in the event of a worst-case spill (**Section 6.8.3**) and relevant literature and studies considering the effects of hydrocarbon exposure.

Consequence Assessment

Environment that May Be Affected

As discussed under Description of Source of Risk, the potential impacts from hydrocarbon release caused by a loss of structural integrity are those which would result from:

- Well Loss of Containment, **Section 6.8.3** (MEE-01)
- Subsea Loss of Containment, **Section 6.8.4** (MEE-02)
- Topsides Loss of Containment, **Section 6.8.4** (MEE-03)
- Loss of Marine Vessel Separation, **Section 6.8.9** (MEE-07).

The potential impacts are therefore discussed in the above mentioned sections.

MEE-08 Loss of Control of Suspended Load – Risk Analysis

Bowtie risk analysis was undertaken to assess MEE-08; refer to **Figure 6-32** and **Figure 6-33** for bowtie diagrams.

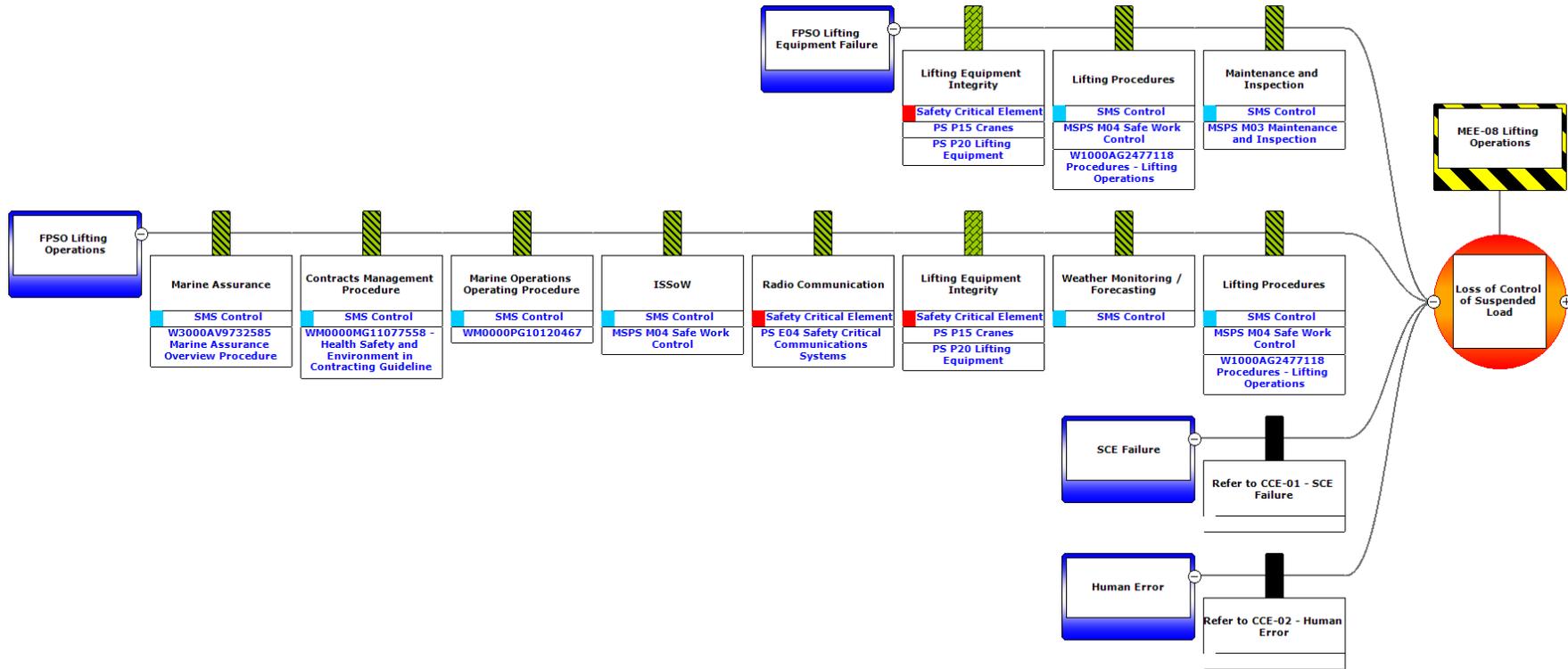


Figure 6-32: MEE-08 loss of control of suspended load from facility lifting operations (Causes)

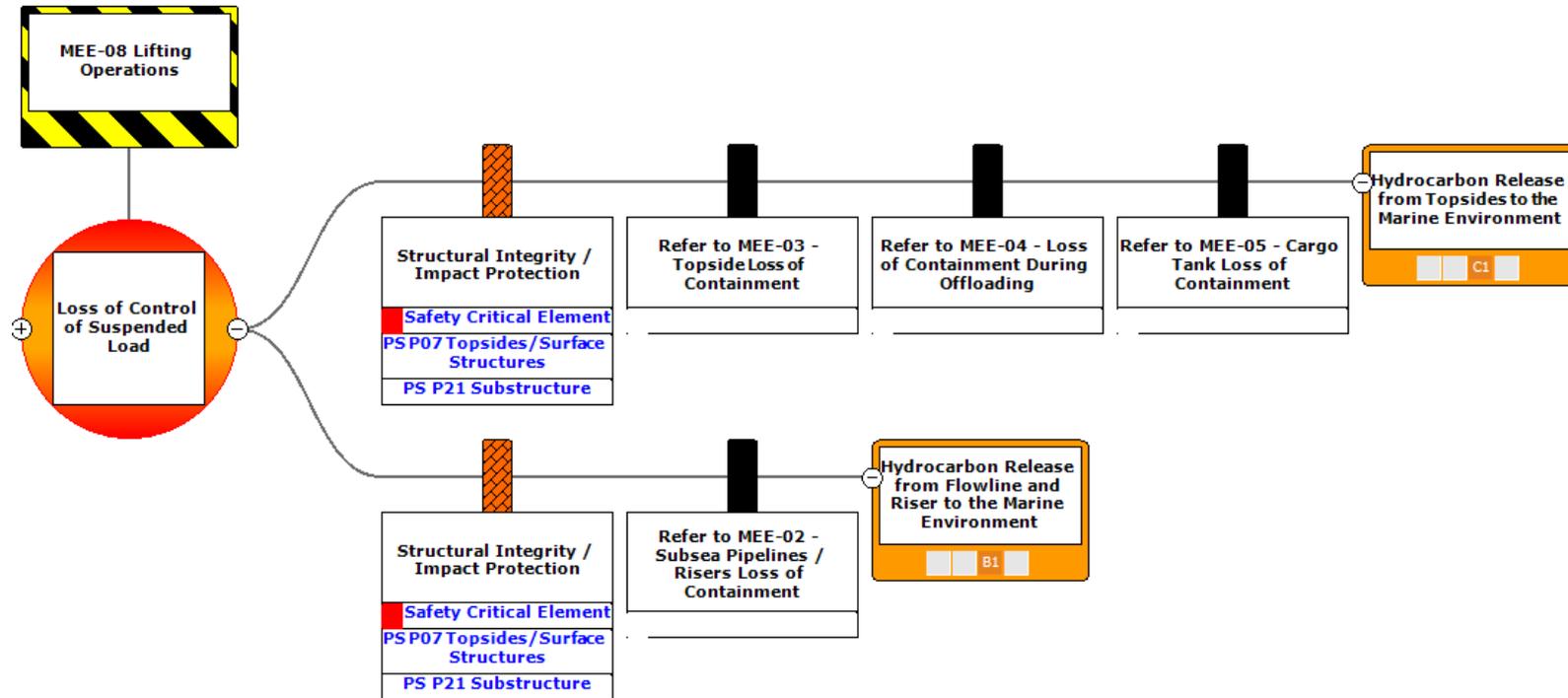


Figure 6-33: MEE-08 loss of control of suspended load from facility lifting operations (Outcomes)

MEE-08 Loss of Control of Suspended Load – Demonstration of ALARP				
ALARP Control Measures				
Hierarchy	Control/Barrier	SCE/Management System Reference	Type of Effect <i>(Refer to Table 6-16)</i>	Control Adopted
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Substitution				
Engineering Controls	Maintain integrity of FPSO lifting equipment to prevent lifting equipment failure or dropped/swinging loads that could result in an MEE.	P20 – Lifting Equipment	Prevention (Technical)	Yes C 20.1
Mitigating Barrier – Safety and Environmental Critical Elements				
Engineering Controls	Maintain structural integrity (impact protection) to ensure availability of critical systems during a major accident or environment event, and prevent structural failures due to dropped objects from contributing to escalation of an MEE.	P21 – Substructures	Reduction (Technical)	Yes C 20.2
Emergency Response	Maintain environmental incident response equipment to enact the NY First Strike Plan.	E05 – Environmental Incident Response Equipment	Mitigation (Technical)	Yes C 13.4
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> • identify hazards that have the potential to cause an MAE • detail assessment of MAE risks • describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential	Vincent NY FPSO Safety Case	Prevention/Mitigation (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6

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MEE-08 Loss of Control of Suspended Load – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
	environmental consequences of MAEs.			
Procedures and Administration	Incident reports are raised for unplanned releases within event reporting system.	Woodside Health, Safety and Environment Event Reporting and Investigation Procedure	Prevention/Mitigation (Administration) Control based on Woodside standard and regulatory requirements	Yes C 9.4
Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> M03 Maintenance and Inspections M04 – Safe Work Control. 	MSPS-03 Maintenance and Inspections M04 – Safe Work Control	Prevention (Administration)	Yes Section 7
Emergency Response and Contingency Planning	Implement management systems to maintain: <ul style="list-style-type: none"> M06 – Emergency Preparedness NY Emergency Response Plan NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia. 	MSPS-06 Emergency Preparedness NY ERP NY Oil Pollution First Strike Plan Oil Pollution Emergency Arrangements – Australia	Mitigation (Administration)	Yes C 13.7 C 13.8 Section 7 for discussion around the ALARP assessment of controls related to hydrocarbon spill response
Risk-Based Analysis				
<p>For risks identified as MEEs, a more detailed risk-based Bowtie Analysis (as outlined in Section 2.7) has been used to identify, analyse and demonstrate that controls in place reduce the risk associated with each MEE to ALARP. Controls have been selected following hierarchy of control principles and considers independence of each barrier and their type of effect in controlling the hazardous event.</p> <p>Application of Woodside’s Risk Management Procedures and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP, which includes:</p> <ul style="list-style-type: none"> ongoing hazard identification, risk assessment and the identification of control measures ongoing integrity management of hardware control measures in accordance with the operational performance standards which define requirements to be suitably maintained, such that they retain effectiveness, functionality, availability and survivability. <p>For each SCE, detailed requirements for equipment functionality, availability, reliability and survivability are incorporated into SCE Performance Standards which also include the relevant assurance tasks (e.g. inspection, maintenance, testing and monitoring requirements) to ensure technical integrity.</p> <p>A quantitative spill risk assessment was undertaken (refer Section 6.8.1 for details of the method used).</p>				
Company Values				
Refer to Company Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				

MEE-08 Loss of Control of Suspended Load – Demonstration of ALARP				
ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect</i> <i>(Refer to Table 6-16)</i>	<i>Control Adopted</i>
Societal Values				
Refer to Societal Values in demonstration of ALARP for MEE-01 (Section 6.8.3).				
ALARP Statement				
<p>On the basis of the environmental risk assessment outcomes and use of the relevant tools appropriate to the decision type, Woodside considers the adopted controls appropriate to manage the impacts and risks of a very low likelihood of a loss of control of suspended load leading to an MEE.</p> <p>The principle of inherent safety and environmental protection is based on the prevention of the MEE through design of the NY FPSO and ensuring the equipment is operated within the design envelope through operating practices and assurance through maintenance and inspection. If a loss of control of suspended load occurs, mitigation measures are in place to minimise the consequence by limiting the inventory which can be released and implementing remediation.</p> <p>The controls in place for prevention and mitigation of MEEs are specified and assured through implementing the NY FPSO Safety Case, SCE management procedures including performance standards for SCEs and MSPSs for Safety Critical Management System Controls.</p> <p>The application of Woodside Risk Management Procedures, and implementation of the NY FPSO Safety Case ensures the continuous identification of hazards, systematic assessment of risks and ongoing assessment of alternative control measures to reduce risk to ALARP.</p> <p>Given the controls in place to prevent and control loss of containment events and mitigate their consequences, alongside procedural control of NY FPSO operations, it is considered that MEE risk associated a loss of control of suspended load is managed to ALARP.</p>				
Demonstration of Acceptability				
Acceptability Statement:				
<p>A loss of control of suspended load has been evaluated as having a 'moderate' (B1) risk rating (via the consideration of applicable MEEs). As per Section 2, Woodside considers 'moderate' (B1) risk ratings as acceptable if managed to ALARP. Due to the consequence associated with MEE-08, Decision Type B has been applied, and ALARP is demonstrated using good industry practice, consideration of company and societal values and risk-based analysis, if legislative requirements are met and societal concerns are accounted for and the alternative control measures are grossly disproportionate to the benefit gained.</p> <p>Acceptability is demonstrated with regard to the considerations described in Section 6.8.3 (MEE-01) (the considerations include principles of ESD, internal context, external context and other requirements (includes laws, policies, standards and conventions)).</p>				

EPOs, EPSs and MC			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
EPO 20 Loss of suspended load from NY FPSO risks to the environment limited to High during the Petroleum Activities Program.	C 20.1 Maintain integrity of FPSO lifting equipment to prevent lifting equipment failure or dropped/swinging loads that could result in an MEE.	PS 20.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • P20 – Lifting Equipment: <ul style="list-style-type: none"> – to prevent lifting equipment failure or dropped/swinging loads that could result in an MEE by maintaining lifting equipment integrity. 	Refer to MC 1.5.1 Section 6.6.1.
	C 20.2 Maintain structural integrity (impact protection) to ensure availability of critical systems during a major accident or environment event, and prevent structural failures due to dropped objects from contributing to escalation of an MEE.	Refer to PS 19.2 Section 6.8.9.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 13.4 Section 6.8.3.	Refer to PS 13.4 Section 6.8.3.	Refer to MC 1.5.1 Section 6.6.1.
	Refer to C 15.6 Section 6.8.3.	Refer to PS 13.6 Section 6.8.3.	Refer to MC 13.6.1 Section 6.8.3.
	Refer to C 9.4 Section 6.7.1.	Refer to PS 9.4 Section 6.7.1.	Refer to MC 9.4 Section 6.7.1.
	Refer to C 13.7 Section 6.8.3.	Refer to PS 13.7 Section 6.8.3.	Refer to MC 13.7.1 Section 6.8.3.
	Refer to C 13.8 Section 6.8.3.	Refer to PS 13.8.1 Section 6.8.3.	Refer to MC 13.8.1 Section 6.8.3.
		Refer to PS 13.8.2 Section 6.8.3.	Refer to MC 13.8.2 Section 6.8.3.

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6.8.11 Major Environmental Event Common Cause Event Failure Mechanisms: Safety and Environmental Critical Equipment Failure CCE-01 and Human Error CCE-02

This section presents common mode failure causes and controls applicable across MEEs which are also observed within the bowties of the MEEs discussed within sections above. Controls, EPSs and MCs presented within this section are also considered relevant to MEE-01 to MEE-08.

Ngujima-Yin: Major Environmental Datasheet	
MEE Number	All
Hazard Description	Generic Safety Critical Equipment failure (CCE-01)
Hazard Description	
<i>Hazard Overview and Scope</i>	
<p>There are a number of causes which contribute to failures of SCEs and other systems which might protect against an MEE. These include:</p> <ul style="list-style-type: none"> • maintenance errors • defects • electrical supply failure • hydraulic supply failure • adverse environmental conditions. <p>The Generic SCE failure bowtie (Figure 6-34) illustrates the causes, outcomes and the controls in place to manage these failure mechanisms.</p>	

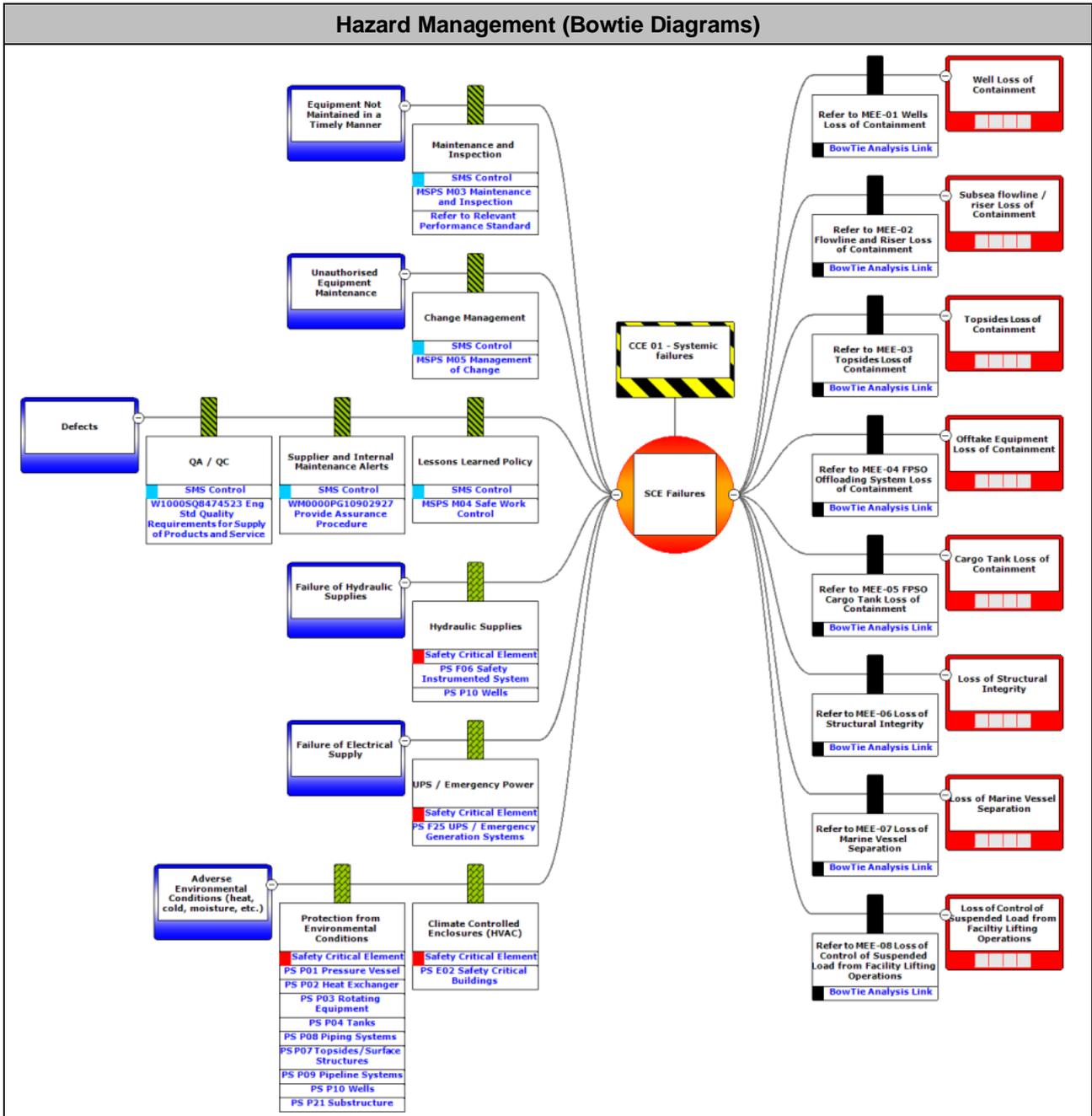


Figure 6-34: Generic bowtie – safety critical equipment failures

MEE Common Cause Event – Demonstration of ALARP ALARP Control Measures				
<i>Hierarchy</i>	<i>Control/Barrier</i>	<i>SCE/Management System Reference</i>	<i>Type of Effect (Refer to Table 6-16))</i>	<i>Control Adopted</i>
Preventative Barriers – Safety and Environmental Critical Elements				
Elimination	Maintain hydraulic supplies (e.g. to support Safety Instrumented Systems and actuation of SCE valves/isolations).	F06 – Safety Instrumented System P10 – Wells	Elimination (Technical)	Yes C 21.1

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	Maintain protection from environmental conditions.	P01 – Pressure Vessels P02 – Heat Exchanger P03 – Rotating Equipment P04 – Tanks P07 – Topsides/Surface Structures P08 – Piping Systems P09 – Pipeline Systems P10 – Wells P21 – Substructures	Elimination (Technical)	Yes C 21.2
Substitution	N/A.	No elimination or substitution controls were identified beyond those incorporated in design.		
Engineering Controls	Maintain UPS/emergency power system to supply Essential safety systems	F25 – UPS/Emergency Power	Prevention (Technical)	Yes C 21.3
	Maintain climate-controlled enclosures to protect essential equipment from adverse environmental conditions.	E02 – Safety Critical Rooms	Prevention (Technical)	Yes C 21.4
Mitigating Barrier – Safety and Environmental Critical Elements				
Mitigation	N/A	No mitigation controls were identified beyond those incorporated in design.		
Legislation, Codes and Standards				
Procedures and Administration	Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case for the NY facility to: <ul style="list-style-type: none"> identify hazards that have the potential to cause an MAE detail assessment of MAE risks describe the physical barriers SCEs and the safety management systems identified as being required to reduce the risk to personnel associated with an MAE to ALARP thus contributing to management of associated potential environmental consequences of MAEs.	Vincent NY FPSO Safety Case	Prevention (Administration) Control based on legislative requirements – must be adopted	Yes C 13.6

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Management System Specific Measures – Key Standards or Procedures				
Procedures and Administration	Implement management systems to maintain: <ul style="list-style-type: none"> MSPS-03 – Maintenance and Inspection MSPS-04 – Safe Work Control MSPS-05 – Management of Change Quality Requirements for Supply of Products and Service Provide Assurance Procedure. 	MSPS-03 Maintenance and Inspection MSPS-04 Safe Work Control MSPS-05 Management of Change Quality Requirements for Supply of Products and Services Provide Assurance Procedure	Prevention (Administration)	Yes Section 7
Risk Evaluation				
Refer to MEEs.				

CCE-01 Safety Critical Element Failure Performance Outcomes, Standards and Measurement Criteria			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
Refer to relevant MEE EPOs: <ul style="list-style-type: none"> EPO 13 EPO 14 EPO 15 EPO 16 EPO 17 EPO 18 EPO 19 EPO 20 	C 21.1 Maintain hydraulic supplies (e.g. to support Safety Instrumented Systems and actuation of SCE valves/isolations).	PS 21.1 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> F06 – Safety Instrumented System P10 – Wells, to together: <ul style="list-style-type: none"> maintain hydraulic supplies (e.g. to support Safety Instrumented Systems and actuation of SCE valves/isolations). 	Refer to MC 1.5.1 Section 6.6.1.

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CCE-01 Safety Critical Element Failure Performance Outcomes, Standards and Measurement Criteria			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	<p>C 21.2</p> <p>Maintain protection from environmental conditions.</p>	<p>PS 21.2</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • P01 – Pressure Vessels • P02 – Heat Exchanger • P03 – Rotating Equipment • P04 – Tanks • P07 – Topsides/Surface Structures • P08 – Piping Systems • P09 – Pipeline Systems • P10 – Wells • P21 – Substructures <p>for each SCE to protect equipment from adverse environmental conditions (e.g. heat, cold, moisture, chemical reaction/incompatibility).</p>	<p>Refer to MC 1.5.1 Section 6.6.1.</p>
	<p>C 21.3</p> <p>Maintain UPS/emergency power system to supply Essential safety systems.</p>	<p>PS 21.3</p> <p>Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for:</p> <ul style="list-style-type: none"> • F25 – UPS/Emergency Power, to <ul style="list-style-type: none"> - provide continuous supply of power (emergency generation and uninterruptable power supply (UPS) to Essential loads following a total (mains) power failure. 	<p>Refer to MC 1.5.1 Section 6.6.1.</p>

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CCE-01 Safety Critical Element Failure Performance Outcomes, Standards and Measurement Criteria			
Environmental Performance Outcomes	Controls	Environmental Performance Standards	Measurement Criteria
	C 21.4 Maintain climate-controlled enclosures to protect essential equipment from adverse environmental conditions.	PS 21.4 Integrity will be managed in accordance with SCE Management Procedure (Section 7.1.18) and SCE technical Performance Standard(s) to prevent environment risk related Damage to SCEs for: <ul style="list-style-type: none"> • E02 – Safety Critical Rooms, to: <ul style="list-style-type: none"> - protect essential equipment from adverse environmental conditions/fire and explosion. 	Refer to MC 1.5.1 Section 6.6.1.
	C 13.6 Section 6.8.3.	PS 13.6 Section 6.8.3.	MC 13.6.1 Section 6.8.3.

Ngujima-Yin: Major Environmental Event Datasheet	
MEE Number	All
Hazard Description	Generic Human Errors – Degradation Factors
Hazard Description	
Hazard Overview and Scope	
<p>There are a number of causes of human errors which contribute to MEEs, or which can result in failure or degradation of the controls in place to protect against MEEs. These are presented in the following bowtie pages and include:</p> <ul style="list-style-type: none"> • task issues, e.g. poor task design; time pressures, task complexity • poor physical interfaces/working environment • provision of inappropriate tools for the task • communication errors, i.e. poor-quality information, lack of clarity in instructions • operator failings, e.g. competence, fitness, impairment or fatigue • organisational issues, e.g. peer pressure, poor safety culture, inadequate supervision, lack of clarity on roles and expectations. <p>The Generic Human Errors bowties illustrate the causes, outcomes and the controls in place for these failure mechanisms (Figure 6-35, Figure 6-36 and Figure 6-37).</p>	
Hazard Management (Bowtie Diagrams)	

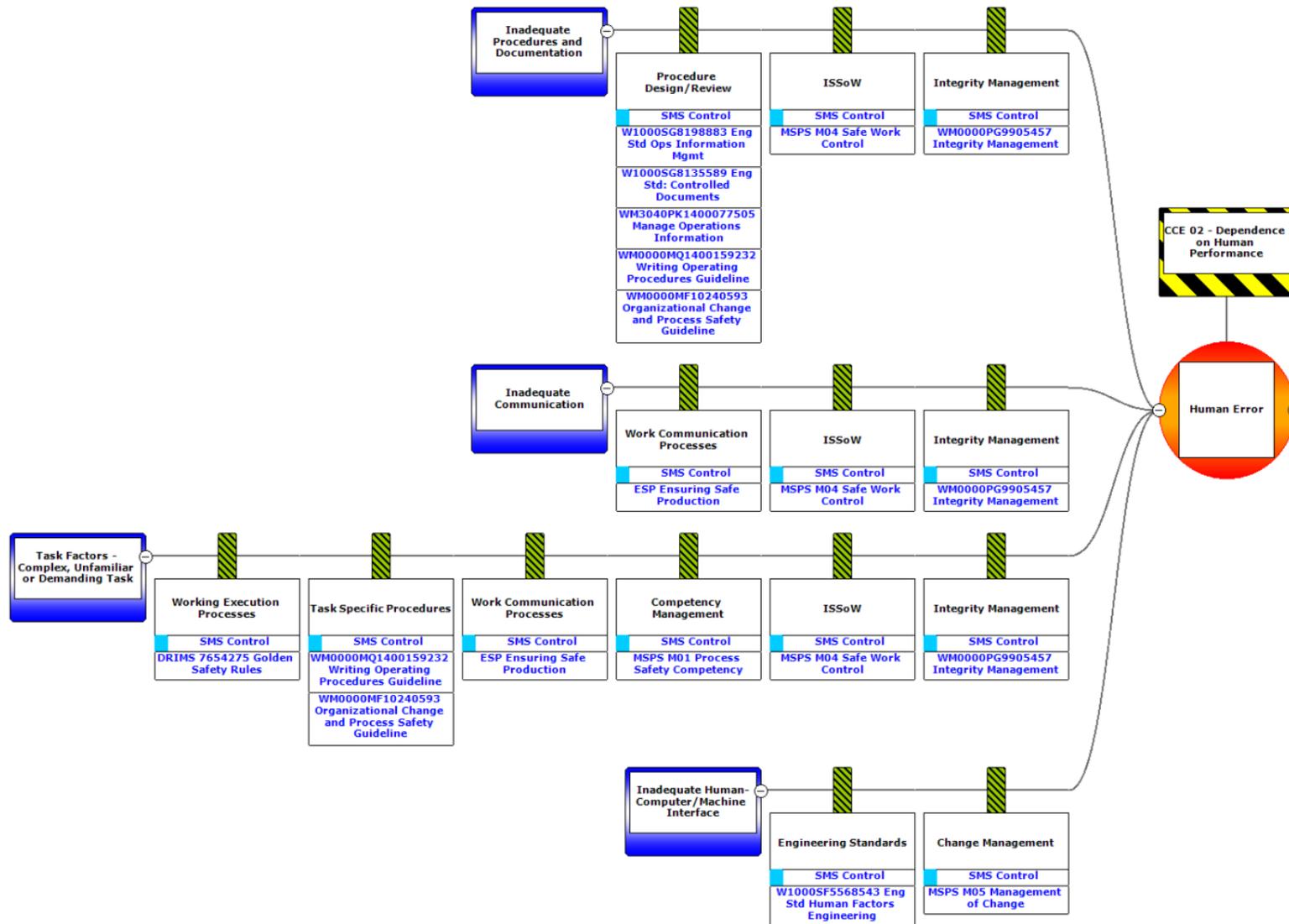


Figure 6-35: Generic bowtie – human error (Causes 1 to 4)

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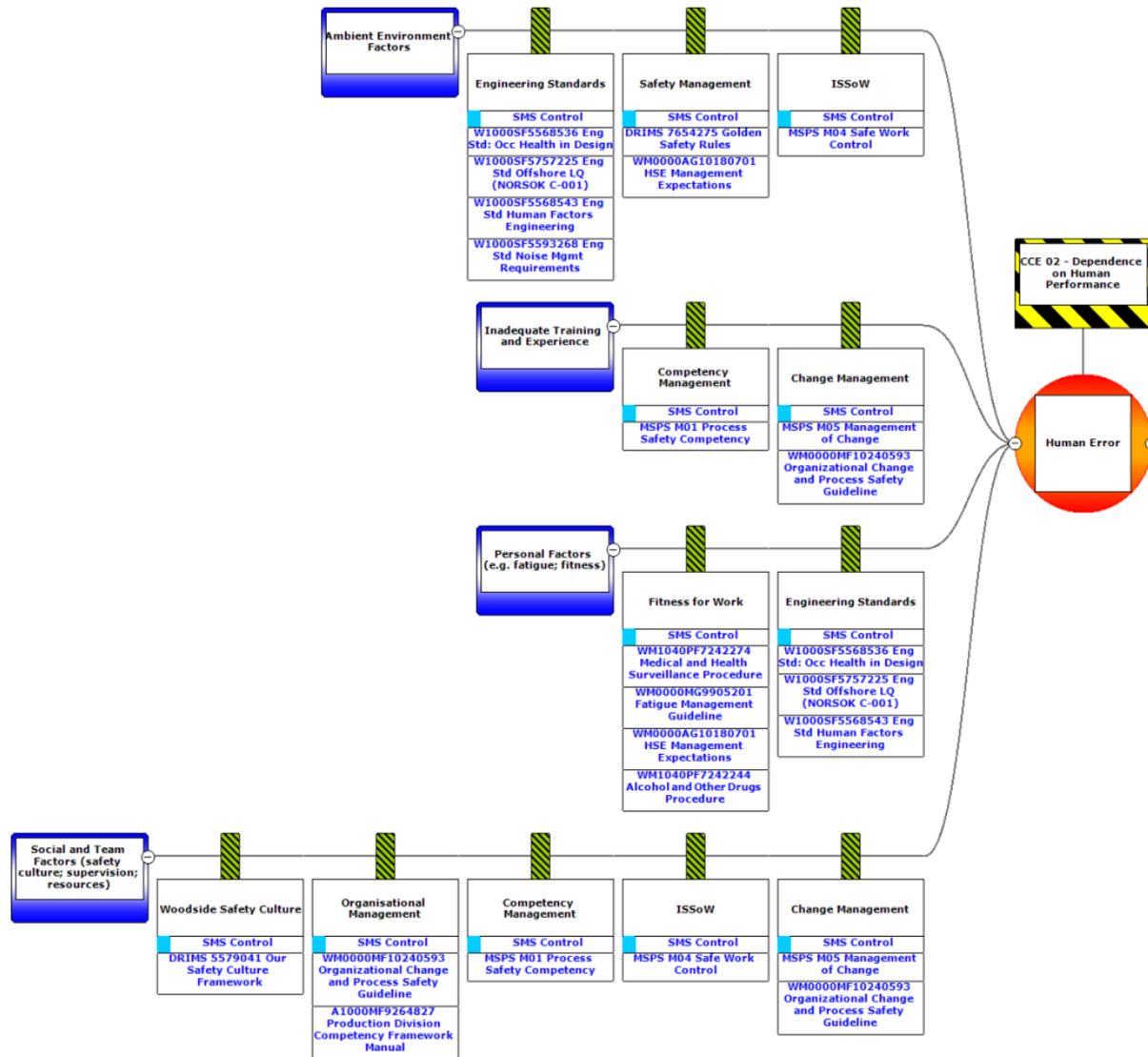


Figure 6-36: Generic bowtie – human error (Causes 5 to 8)

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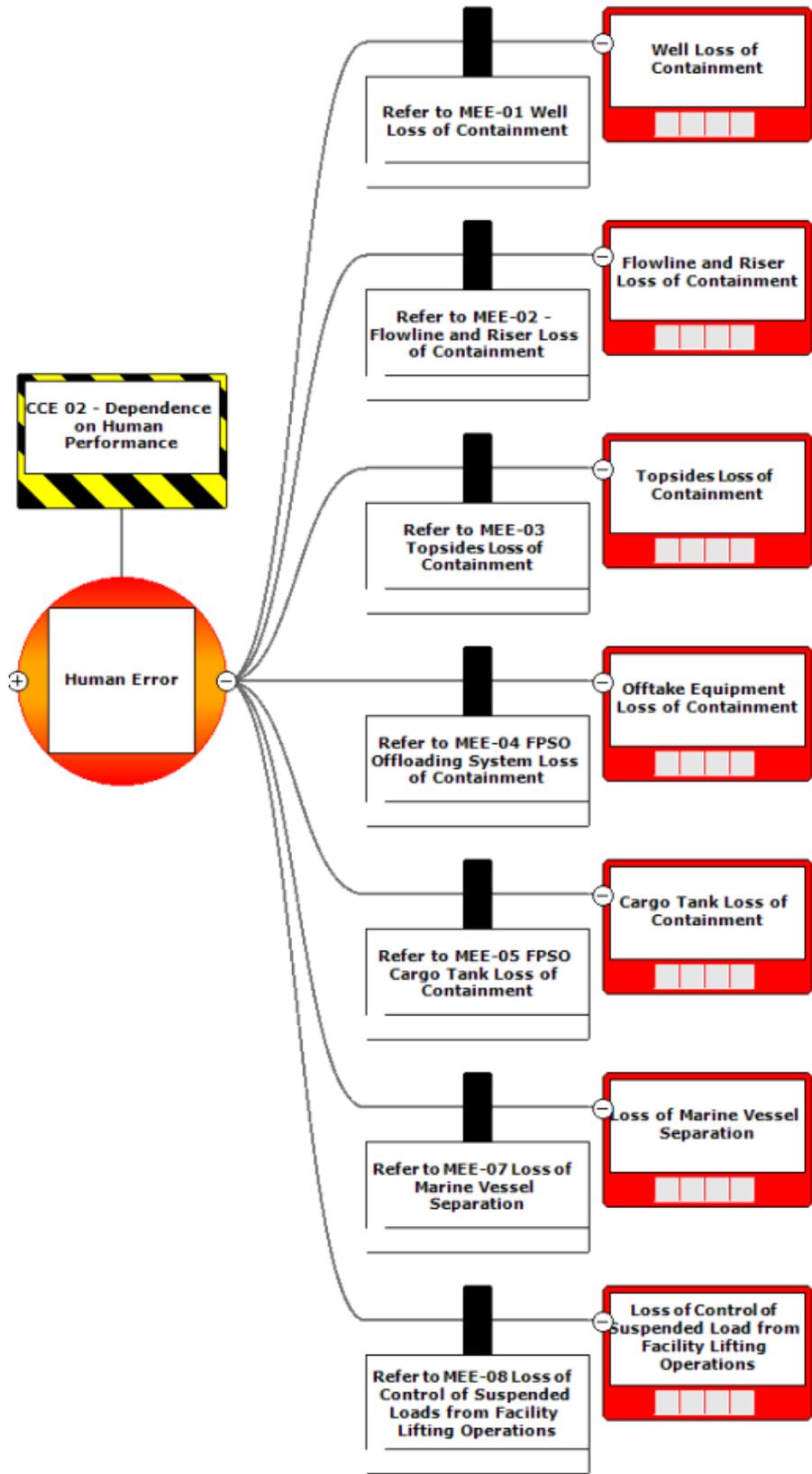


Figure 6-37: Generic bowtie – human error (Outcomes)

6.9 Recovery Plan and Threat Abatement Plan Assessment

This section describes the assessment that Woodside has undertaken to demonstrate that the Petroleum Activities Program is not inconsistent with any relevant recovery plans or threat abatement plans. For the purposes of this assessment, the relevant Part 13 statutory instruments (recovery plans and threat abatement plans) are:

- Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia, 2017)
- Conservation Management Plan for the Blue Whale 2015–2025 (Commonwealth of Australia, 2015a)
- Recovery Plan for the Grey Nurse Shark (*Carcharias taurus*) 2014 (Commonwealth of Australia, 2014b)
- Sawfishes and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)
- Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans 2018 (Commonwealth of Australia, 2018)
- Conservation Management Plan for the Southern Right Whale (Commonwealth of Australia, 2012).

Table 6-22 lists the objectives and (where relevant) the action areas of these plans, and also describes whether these objectives/action areas are applicable to government, the Titleholder, and/or the Petroleum Activities Program. For those objectives/action areas applicable to the Petroleum Activities Program, the relevant actions of each plan have been identified, and an evaluation has been conducted as to whether impacts and risks resulting from the activity are not inconsistent with that action. The results of this assessment against relevant actions are presented in **Table 6-23** to **Table 6-28**.

Table 6-22: Identification of applicability of recovery plan and threat abatement plan objectives and action areas

EPBC Act Part 13 Statutory Instrument	Applicable to:		
	Government	Titleholder	Petroleum Activities Program
Marine Turtle Recovery Plan			
Long-term recovery objective: Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so they can be removed from the EPBC Act threatened species list.	Y	Y	Y
Interim Recovery Objectives			
1. Current levels of legal and management protection for marine turtle species are maintained or improved, both domestically and throughout the migratory range of Australia’s marine turtles.	Y		
2. The management of marine turtles is supported.	Y		
3. Anthropogenic threats are demonstrably minimised.	Y	Y	Y
4. Trends in nesting numbers at index beaches and population demographics at important foraging grounds are described.	Y	Y	
Action Areas			
A. Assessing and addressing threats:			
A1. Maintain and improve efficacy of legal and management protection.	Y		
A2. Adaptively manage turtle stocks to reduce risk and build resilience to climate change and variability.	Y		
A3. Reduce the impacts of marine debris.	Y	Y	Y
A4. Minimise chemical and terrestrial discharge.	Y	Y	Y
A5. Address international take within and outside Australia’s jurisdiction.	Y		
A6. Reduce impacts from terrestrial predation.	Y		
A7. Reduce international and domestic fisheries bycatch.	Y		
A8. Minimise light pollution.	Y	Y	Y
A9. Address the impacts of coastal development/infrastructure and dredging and trawling.	Y	Y	
A10. Maintain and improve sustainable Indigenous management of marine turtles.	Y		
B. Enabling and measuring recovery:			
B1. Determine trends in index beaches.	Y	Y	
B2. Understand population demographics at key foraging grounds.	Y		
B3. Address information gaps to better facilitate the recovery of marine turtle stocks.	Y	Y	Y
Blue Whale Conservation Management Plan			
Long-term recovery objective: Minimise anthropogenic threats to allow for their conservation status to improve so that they can be removed from the EPBC Act threatened species list.	Y	Y	Y

EPBC Act Part 13 Statutory Instrument	Applicable to:		
	Government	Titleholder	Petroleum Activities Program
Interim Recovery Objectives			
1. The conservation status of blue whale populations is assessed using efficient and robust methodology.	Y		
2. The spatial and temporal distribution, identification of BIAs, and population structure of blue whales in Australian waters is described	Y	Y	Y
3. Current levels of legal and management protection for blue whales are maintained or improved and an appropriate adaptive management regime is in place	Y		
4. Anthropogenic threats are demonstrably minimised	Y	Y	Y
Action Areas			
A. Assessing and addressing threats:			
A.1: Maintain and improve existing legal and management protection.	Y		
A.2: Assess and address anthropogenic noise.	Y	Y	Y
A.3: Understand impacts of climate variability and change.	Y		
A.4: Minimise vessel collisions.	Y	Y	Y
B. Enabling and measuring recovery:			
B.1: Measure and monitor population recovery.	Y		
B.2: Investigate population structure.	Y		
B.3: Describe spatial and temporal distribution and define biologically important habitat.	Y	Y	Y
Grey Nurse Shark Recovery Plan			
Overarching Objective			
To assist the recovery of the grey nurse shark in the wild, throughout its range in Australian waters, with a view to: <ul style="list-style-type: none"> • improving the population status, leading to future removal of the grey nurse shark from the threatened species list of the EPBC Act • ensuring that anthropogenic activities do not hinder the recovery of the grey nurse shark in the near future, or impact on the conservation status of the species in the future. 	Y	Y	Y
Specific Objectives			
1. Develop and apply quantitative monitoring of the population status (distribution and abundance) and potential recovery of the grey nurse shark in Australian waters.	Y		
2. Quantify and reduce the impact of commercial fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range.	Y		
3. Quantify and reduce the impact of recreational fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range.	Y		
4. Where practicable, minimise the impact of shark control activities on the grey nurse shark.	Y		
5. Investigate and manage the impact of ecotourism on the grey nurse shark.	Y		
6. Manage the impact of aquarium collection on the grey nurse shark.	Y		

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EPBC Act Part 13 Statutory Instrument	Applicable to:		
	Government	Titleholder	Petroleum Activities Program
7. Improve understanding of the threat of pollution and disease to the grey nurse shark.	Y	Y	Y
8. Continue to identify and protect habitat critical to the survival of the grey nurse shark and reduce the impact of threatening processes within these areas.	Y	Y	
9. Continue to develop and implement research programs to support the conservation of the grey nurse shark.	Y	Y	
10. Promote community education and awareness in relation to grey nurse shark conservation and management.	Y		
Sawfish and River Sharks Recovery Plan			
Primary Objective			
To assist the recovery of sawfish and river sharks in Australian waters with a view to: <ul style="list-style-type: none"> • improving the population status leading to the removal of the sawfish and river shark species from the threatened species list of the EPBC Act • ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future. 	Y	Y	Y
Specific Objectives			
1. Reduce and, where possible, eliminate adverse impacts of commercial fishing on sawfish and river shark species.	Y		
2. Reduce and, where possible, eliminate adverse impacts of recreational fishing on sawfish and river shark species.	Y		
3. Reduce and, where possible, eliminate adverse impacts of Indigenous fishing on sawfish and river shark species.	Y		
4. Reduce and, where possible, eliminate the impact of illegal, unregulated and unreported fishing on sawfish and river shark species.	Y		
5. Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species.	Y	Y	Y
6. Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.	Y	Y	Y
7. Reduce and, where possible, eliminate any adverse impacts of collection for public aquaria on sawfish and river shark species.	Y		
8. Improve the information base to allow the development of a quantitative framework to assess the recovery of, and inform management options for, sawfish and river shark species.	Y		
9. Develop research programs to assist conservation of sawfish and river shark species.	Y	Y	
10. Improve community understanding and awareness in relation to sawfish and river shark conservation and management.	Y		

EPBC Act Part 13 Statutory Instrument	Applicable to:		
	Government	Titleholder	Petroleum Activities Program
Marine Debris Threat Abatement Plan			
Objectives			
1. Contribute to long-term prevention of the incidence of marine debris.	Y	Y	
2. Understand the scale of impacts from marine plastic and microplastic on key species, ecological communities and locations.	Y	Y	Y
3. Remove existing marine debris.	Y		
4. Monitor the quantities, origins, types and hazardous chemical contaminants of marine debris, and assess the effectiveness of management arrangements for reducing marine debris.	Y		
5. Increase public understanding of the causes and impacts of harmful marine debris, including microplastic and hazardous chemical contaminants, to bring about behaviour change.	Y		
Southern Right Whale Conversation Management Plan			
Long-term recovery objective: The long-term recovery objective is to minimise anthropogenic threats to allow the conservation status of the southern right whale to improve so that it can be removed from the threatened species list under the EPBC Act.	Y	Y	Y
Specific Objectives			
1. Demonstrate that the number of southern right whales occurring off south-west Australia (nominally south-west Australian population) is increasing at or near the maximum biological rate	Y		
2. Demonstrate that the number of southern right whales occurring off south-east Australia (nominally south-east Australian population) is showing signs of increase	Y		
3. The nature and degree of difference between the south-eastern and south-western Australian populations of southern right whales is clearly understood.	Y		
4. Current levels of legal and management protection for southern right whales are maintained or improved and an appropriate adaptive management regime is in place	Y		
5. Anthropogenic threats are demonstrably minimised.	Y	Y	Y
Action Areas			
A. Assessing and addressing threats:			
A.1: Maintain and improve existing legal and management protection.	Y		
A.2: Assess and address anthropogenic noise (shipping, industrial and seismic).	Y	Y	Y
A.3: Reduce commercial fishing entanglements.	Y		
A.4: Address impacts of climate variability and change.	Y		
A.5: Address vessel collisions.	Y	Y	Y
A.6: Address infrastructure and coastal development impacts.	Y		
B. Measuring recovery:			
B.1: Measure and monitor population recovery.	Y		
B.2: Investigate the two-population model.	Y		

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EPBC Act Part 13 Statutory Instrument	Applicable to:		
	Government	Titleholder	Petroleum Activities Program
B.3: Understand offshore distribution and migration,	Y	Y	Y
B.4: Characterise behaviour and movements.	Y	Y	Y

Table 6-23: Assessment against relevant actions of the Marine Turtle Recovery Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Marine Turtle Recovery Plan	Action Area A3: Reduce the impacts from marine debris.	Action: Support the implementation of the Marine Debris Threat Abatement Plan (TAP). Priority actions at stock level: <ul style="list-style-type: none"> G-NWS – Understand the threat posed to this stock by marine debris. LH-WA – Determine the extent to which marine debris is impacting loggerhead turtles. F-Pil – No relevant actions. 	Refer Section 6.7.2 . Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to marine turtles. Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the petroleum activities program.	EPO 10 C 10.1 to 10.4, C 9.5 PS 10.1 to 10.3, PS 9.5
	Action Area A4: Minimise chemical and terrestrial discharge.	Action: Ensure spill risk strategies and response programs adequately include management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', e.g. nesting habitat, seagrass meadows or coral reefs. Priority actions at stock level: <ul style="list-style-type: none"> G-NWS – Ensure that spill risk strategies and response programs include management for turtles and their habitats. LH-WA & F-Pil – Ensure that spill risk strategies and response programs include management for turtles and their habitats, particularly in reference to slow to recover habitats, e.g. seagrass meadows or corals. 	Refer Sections 6.6.5, 6.7, and 6.8 . Not inconsistent assessment: The assessment of accidental release of chemicals/ hydrocarbons has considered the potential risks to marine turtles. Spill risk strategies and response program include management measures for turtles and their nesting habitats.	Refer Sections 6.6.5, 6.7, and 6.8 Detailed oil spill preparedness and response EPOs, EPSS and MC for the Petroleum Activities Program are presented.

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Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
	<p>Action Area A8: Minimise light pollution.</p>	<p>Action: Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats.</p> <p>Priority actions at stock level:</p> <ul style="list-style-type: none"> • G-NWS – As above. • LH-WA – No relevant actions. • F-Pil – Manage artificial light from onshore and offshore sources to ensure biologically important behaviours of nesting adults and emerging/dispersing hatchlings can continue. 	<p>Refer Section 6.6.7.</p> <p>Not inconsistent assessment: The assessment of light emissions has considered the potential impacts to marine turtles. Internesting, mating, foraging or migrating turtles are not impacted by light from offshore vessels. Based on the frequency and nature of IMMR activities, the impacts to adult turtles moving through the Operational Area from vessel lighting are expected to be localised and temporary with no lasting effect.</p>	<p>EPO 8 C 8.1 PS 8.1</p>
	<p>Action Area B1: Determine trends at index beaches.</p>	<p>Action: Maintain or establish long-term monitoring programs at index beaches to collect standardised data critical for determining stock trends, including data on hatchling production.</p> <p>Priority actions at stock level:</p> <ul style="list-style-type: none"> • G-NWS – Continue long-term monitoring of index beaches. • LH-WA – Continue long-term monitoring of nesting and foraging populations. • F-Pil – no relevant actions. 	<p>Not inconsistent assessment: Woodside contributes to Action Area B1 via its support of the Ningaloo Turtle Program.</p>	<p>N/A</p>

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Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
	Action Area B3: Address information gaps to better facilitate the recovery of marine turtle stocks.	Action: Understand the impacts of anthropogenic noise on marine turtle behaviour and biology. Priority actions at stock level: <ul style="list-style-type: none"> G-NWS – Given this is a relatively accessible stock that is likely to be exposed to anthropogenic noise, investigate the impacts of anthropogenic noise on turtle behaviour and biology and extrapolate findings from the NWS stock to other stocks. LH-WA – No relevant actions. F-Pil – No relevant actions. 	Refer Section 6.6.3. Not inconsistent assessment: The assessment of acoustic emissions has considered the potential impacts to marine turtles. IMMR related noise is not expected to result in behavioural response, injury or mortality of individuals, or any other lasting effect.	EPO 3 C 3.1 PS 3.1

Assessment Summary:

The Marine Turtle Recovery Plan has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.

Table 6-24: Assessment against relevant actions of the Blue Whale Conservation Management Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Blue Whale Conservation Management Plan	Action Area A.2: Assessing and addressing anthropogenic noise.	Action 2: Assessing the effect of anthropogenic noise on blue whale behaviour. Action 3: Anthropogenic noise in BIAs will be managed such that any blue whale continues to use the area without injury ² , and is not displaced from a foraging area.	Refer Section 6.6.3. Not inconsistent assessment: The assessment of acoustic emissions has considered the potential impacts to pygmy blue whales. Acoustic emissions from project vessels will not cause injury to any pygmy blue whale. There are no known or possible foraging areas for pygmy blue whales within or adjacent to the Operational Area. If the Petroleum Activities Program within the Operational Area overlaps with an individual northbound or southbound migration, they may deviate slightly from the migratory route, but will continue on their migration.	EPO 3 C 3.1 PS 3.1

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
	Action Area A.4: Minimising vessel collisions.	Action 3: Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented.	Refer Section 6.7.3. Not inconsistent assessment: The assessment of vessel collision with marine fauna has considered the potential risks to pygmy blue whales. If the Petroleum Activities Program within the Operational Area overlaps with an individual northbound or southbound migration, they may deviate slightly from the migratory route, but will continue on their migration. Vessel collisions with pygmy blue whales are highly unlikely to occur, given the low operating speed of support vessels.	EPO 11 C 11.1 PS 11.1
	Action Area B.3: Describing spatial and temporal distribution and defining biologically important habitat.	Action 2: Identify migratory pathways between breeding and feeding grounds. Action 3: Assess timing and residency within BIAs.	Not inconsistent assessment: Woodside contributes to Action Area B3 via its support of targeted research initiatives (e.g. satellite tracking of pygmy blue whale migratory movements ³).	N/A
Assessment Summary: The Blue Whale Conservation Management Plan has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.				

Table 6-25: Assessment against relevant actions of the Grey Nurse Shark Recovery Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Grey Nurse Shark Recovery Plan	Objective 7: Improve understanding of the threat of pollution and disease to the grey nurse shark.	Action 7.1: Review and assess the potential threat of introduced species, pathogens and pollutants.	Refer Section 6.7.2. Not inconsistent assessment: This EP includes an assessment of the impacts from accidental release of solid wastes as well as planned discharges of drilling waste on marine species.	N/A

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
			Refer Sections 6.6.5, 6.7, and 6.8. Not inconsistent assessment: The assessment of accidental release of chemicals/hydrocarbons has considered the potential risks to grey nurse sharks. Spill risk strategies and response program include management measures, as identified and required.	Refer Sections 6.6.5, 6.7, and 6.8 Detailed oil spill preparedness and response EPOs, EPSs and MC for the Petroleum Activities Program are presented.
Assessment Summary: The Grey Nurse Shark Recovery Plan has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.				

Table 6-26: Assessment against relevant actions of the Sawfish and River Shark Recovery Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Sawfish and River Shark Recovery Plan	Objective 5: Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species.	Action 5c: Identify risks to important sawfish and river shark habitat and measures needed to reduce those risks.	Refer Sections 6.6.5, 6.7, and 6.8. Not inconsistent assessment: The assessment of accidental release of chemicals/hydrocarbons has considered the potential risks to sawfish and river shark. Spill risk strategies and response program include management measures, as identified and required.	Refer Sections 6.6.5, 6.7, and 6.8 Detailed oil spill preparedness and response EPOs, EPSs and MC for the Petroleum Activities Program are presented.
	Objective 6: Reduce and, where possible, eliminate any adverse impacts of marine debris on sawfish and river shark species noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.	Action 6a: Assess the impacts of marine debris including ghost nets, fishing gear and plastics on sawfish and river shark species.	Refer Section 6.7.2. Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to sawfish. Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the petroleum activities program.	N/A

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Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
<p>Assessment Summary: The Sawfish and River Shark Recovery Plan has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.</p>				

Table 6-27: Assessment against relevant actions of the Marine Debris Threat Abatement Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Marine Debris TAP	Objective 2: Understand the scale of marine plastic and microplastic impact on key species, ecological communities and locations.	Action 2.04: Build understanding related to plastic and microplastic pollution.	Refer Section 6.7.2. Not inconsistent assessment: The assessment of the accidental release of solid hazardous and non-hazardous wastes has considered the potential risks to the marine environment. Controls have been implemented to reduce the likelihood of accidental release of solid wastes for the duration of the petroleum activities program.	N/A
<p>Assessment Summary: The Marine Debris TAP has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.</p>				

Table 6-28 Assessment against relevant actions of the Southern Right Whale Conservation Management Plan

Part 13 Statutory Instrument	Relevant Action Areas/Objectives	Relevant Actions	Evaluation	EPO, Controls and PS
Southern Right Whale Conservation Management Plan	Action Area A.2: Assess and address anthropogenic noise (shipping, industrial and seismic).	Refer to Relevant Actions 2, 3 for pygmy blue whales in Table 6-24.	Refer Section 6.6.3. Not inconsistent assessment: Refer to evaluation for pygmy blue whales in Table 6-24.	EPO 3 C 3.1 PS 3.1
	Action Area A.5: Address vessel collisions.	Refer to Relevant Action 3 for pygmy blue whales in Table 6-24.	Refer Section 6.7.3. Not inconsistent assessment: Refer to evaluation for pygmy blue whales in Table 6-24.	EPO 11 C 11.1 PS 11.1
	Action Area B.3: Understand offshore distribution and migration.	Refer to Relevant Actions, Action Area B3 for pygmy blue whales in Table 6-24.	Not inconsistent assessment: Refer to evaluation for pygmy blue whales in Table 6-24.	N/A
	Action Area B.4: Characterise behaviour and movements.	Refer to Relevant Actions, Action Area B3 for pygmy blue whales in Table 6-24.	Not inconsistent assessment: Refer to evaluation for pygmy blue whales in Table 6-24.	N/A
<p>Assessment Summary: The Southern Right Whale Management Plan has been considered during the assessment of impacts and risks, and the Petroleum Activities Program is not considered to be inconsistent with the relevant actions of this plan.</p>				

6.10 Cultural Features and Heritage Values Assessment

As described in **Section 4**, the identification of cultural values associated with cultural heritage as well as the social, economic and cultural features important to First Nation’s people is integral to understanding the environment and any potential impacts and risks to the environment.

In line with its First Nations Communities Policy (Woodside, 2022), Woodside seeks to avoid damage or disturbance to cultural heritage (including intangible heritage) and, if avoidance is not possible, minimise and mitigate the impacts, in consultation with First Nation communities and Traditional Custodians. Mitigation can include any measure or control aimed at ensuring the viability of the intangible cultural heritage and its intergenerational transmission. This can include reducing impacts and risks to environmental features that are associated with intangible cultural heritage (UNESCO, 2003; ICOMOS, 2013).

It is important to note that not all topics raised by First Nations groups/individuals through consultation are considered values for the purpose of the cultural features and heritage values impact assessment below. A number of topics were raised as a general interest in environmental management and ecosystem health, where the group/individual was seeking further information about potential impacts and risks from the Petroleum Activities Program on the receptor. As these interests relate to the maintenance of the natural environment, these are adequately addressed through impact and risk assessments described in **Sections 6.6, 6.7 and 6.8** respectively and not further assessed below.

Aspect	Cultural Features and Heritage Values			
Description of Source Impact/ Risk	<p>The physical presence of the FPSO and vessels and associated movements in the Operational Area, as well as physical presence of subsea infrastructure, have the potential to impact or be a risk to cultural features and heritage values.</p> <p>The NY FPSO and subsea infrastructure has been in operation since 2008 and has been marked on nautical charts since that time. Inspection, monitoring, maintenance and repair activities may also be conducted on any of the wells within in Production Licence Areas WA-28-L and WA-59-L.</p> <p>The Petroleum Activities Program includes production from a series of subsea wells. The worst-case credible hydrocarbon spill scenario involves a long-term (77-day) uncontrolled subsea release of 258,549 m3 of Vincent Crude from the Vincent Infill Well (VNBH4-ST2) and forms the basis of the EMBA.</p>			
Receptor sensitivity	<p>Cultural features and heritage values: High value</p> <p>Marine mammals: High value species</p> <p>Marine reptiles: High value species</p> <p>Fish: High value species</p>			
Planned Activities	The potential environmental impact to species that have a cultural feature or heritage value have been summarised below to provide the context of a potential impact significance level to those species to understand any cumulative impact on the cultural feature or heritage value.			
	Aspect	Impact Significance Level		
	<i>Environmental impact assessment to marine species</i>	<i>Marine mammals</i>	<i>Marine reptiles</i>	<i>Fish</i>
	6.6.7 Routine Light Emissions: External Lighting on FPSO and Project Vessels	N/A	Slight (E)	N/A
	6.6.3 Routine Acoustic Emissions – Generation of Noise from FPSO, Project Vessels and Positioning Equipment	No Lasting (F)	No Lasting (F)	No Lasting (F)
6.6.5 Routine and Non-Routine Discharges: (Utility Systems)	No Lasting (F)	No Lasting (F)	No Lasting (F)	
Unplanned Activities	The potential environmental risk to species that have a cultural feature or heritage value have been summarised below to provide the context of a potential impact significance level to those species to understand any cumulative impact on the cultural feature or heritage value			
	Aspect	Risk Rating		

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Aspect	Cultural Features and Heritage Values			
	<i>Environmental risk assessment to marine species</i>	<i>Marine mammals</i>	<i>Marine reptiles</i>	<i>Fish</i>
	6.7.1 Unplanned Discharge: Release of Hydrocarbons or Chemicals during transfer, storage, and use	Moderate	Moderate	Moderate
	6.7.2 Unplanned Discharge: Hazardous and Non-hazardous Waste Management	Moderate	Moderate	Moderate
	6.7.3 Physical Presence: Interaction with Marine Fauna	Low	Low	Low
	6.8.3 Unplanned Hydrocarbon Release: Loss of well containment	Moderate	Moderate	Moderate
	6.8.4 Unplanned Hydrocarbon Release: Subsea flowline and Riser Loss of Containment	High	High	High
	6.8.5 Unplanned Hydrocarbon Release: Topsides Loss of Containment	High	High	High
	6.8.6 Unplanned Hydrocarbon Release: Offloading Equipment Loss of Containment	Moderate	Moderate	Moderate
	6.8.7 Unplanned Hydrocarbon Release: Cargo Tank Loss of Containment	Moderate	Moderate	Moderate
	6.8.8 Unplanned Hydrocarbon Release: Loss of Structural Integrity	High	High	High
	6.8.9 Unplanned Hydrocarbon Release: Loss of Marine Vessel Separation	High	High	High
	6.8.10 Unplanned Discharge: Loss of suspended Load	Moderate	Moderate	Moderate
Impact and Risk Assessment	<p>The Petroleum Activities Program has the potential to impact cultural features and heritage values through the following ways:</p> <p><u>Intangible Cultural Heritage</u></p> <ul style="list-style-type: none"> • Songlines: Songlines can become lost, fragmented, or broken when there is a loss of Country or forced removal from Country (Neale and Kelly, 2020:30). Physical sites that have been identified as comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. It is noted that oil and gas infrastructure exists in many areas of the North West Shelf, and that songlines are still acknowledged and recognised. It is inferred that if there were to be any impacts to surviving songlines these would be significantly more likely to be described as qualitative (i.e. “weaken” a songline) rather than binary or absolute (i.e. destroy a songline). • Creation/dreaming sites; sacred sites; ancestral beings: Activities that physically alter landscape features may be assumed to potentially impact values of creation/dreaming sites, sacred sites or ancestral beings. • Cultural obligations to care for Country: Environmental impacts may be assumed to impact rights and obligations to care for Sea Country. Exclusion of Traditional Custodians from Sea Country (e.g. by restricting access) or decision-making processes (e.g. by not conducting ongoing consultation) are other potential sources of impact. • Knowledge of Country/customary law and transfer of knowledge: Direct impact to communities practicing these skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in population. Therefore, the transmission of these skills is expected to be impacted where there are impacts at the species/population level. Limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge. 			

Aspect	Cultural Features and Heritage Values
	<ul style="list-style-type: none"> • Connection to Country: Where people are displaced or disrupted (e.g. during colonisation) or where there is a loss of technical skills or environmental knowledge this may damage connection to Country (McDonald and Phillips, 2021). • Access to Country: Impacts to access to Country may be classified as temporary (e.g. where exclusion zones exist around activities for safety reasons) or permanent (e.g. where infrastructure obstructs access or navigation). Impacts to access to Country can only occur in areas that were traditionally accessed by Traditional Custodians. As described in Section 4.9.3 this is anticipated to be focussed on areas adjacent to the coast. • Restrictions on Access to Country: Access to the operational area has not been identified as a cultural issue, however some areas within the EMBA may not be culturally appropriate to access. Impacts to this value may occur where spill response access areas that are not appropriate, or in ways that are not consistent with traditional law. • Kinship systems and totemic species: It is assumed that marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that “skin group” from hunting or eating that same species (Juluwarlu, 2004). It is therefore inferred that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. • Resource collection: Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, marine species (as resources) will be impacted where there is an impact at the species/population level. <p><u>Marine Ecosystems and Species:</u></p> <ul style="list-style-type: none"> • Marine ecosystems may hold both cultural and environmental value (see Section 4.9), with cultural and environmental values intrinsically linked (DCCEEW, 2023; MAC, 2021 as cited in Woodside, 2023a). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within Sea Country—the seascape which Traditional Custodians view, interact with or hold knowledge of. <p><u>Coastal landforms</u></p> <ul style="list-style-type: none"> • Coastal landforms may have cultural values either through association with intangible values described above (e.g. as features of a songline, physical manifestations of ancestor beings etc.) or as archaeologically prospective locations (e.g. water sources with increased habitation/use, dunes used for burials etc.) <p>Intangible Values</p> <p><u>Songlines</u></p> <p>Management of intangible cultural heritage can include reducing impacts and risks to tangible features that are associated with intangible cultural heritage (UNESCO, 2003; ICOMOS, 2013). Impacts to marine plants, animals and other cultural features associated with songlines might impact the intergenerational transmission of knowledge of songlines when individuals can no longer witness or interact with the cultural features tied to songlines on Country. Therefore, managing songlines may require environmental controls to minimise potential impact to marine fauna at a population level, including migratory routes. Refer to species specific assessment below for further information, in addition to the impact and risk assessment in Section 6.6, 6.7 and 6.8 respectively.</p> <p>Physical features comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. Songlines can become lost, fragmented, or broken when there is a loss of Country or impact to culturally important physical features (Neale and Kelly, 2020:30). No specific details of songlines within the EMBA have been provided by relevant persons during consultation for this Activity, and no landforms typical of songlines (e.g. rocks, mountains, rivers, caves and hills (Higgins 2021:724)) are anticipated to be impacted by the Activity.</p> <p><u>Creation/Dreaming Sites; Sacred Sites; Ancestral Beings</u></p> <p>Woodside has undertaken all reasonable steps to identify creation and dreaming sites, sacred sites, and places associated with ancestral beings within the EMBA. No such sites have been identified. A review of relevant literature has been undertaken which has identified creation, dreaming and ancestral narratives related to the sea more broadly without confirming where (if</p>

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Aspect	Cultural Features and Heritage Values
	<p>anywhere) these overlap the EMBA. These references are of a general nature, and do not identify any features or values requiring specific protection or management from the proposed activities.</p> <p>In the literature reviewed, sea serpents or water serpents are common in Aboriginal creation narratives, and several references were identified. The majority of these refer to serpents residing within inland rivers or pools outside of the EMBA (Barber and Jackson, 2011, Hayes v Western Australia [2008] FCA 1487, Juluwarlu, 2004; Water Corporation, 2019). In some versions, the serpent originates from the sea or coast and creates the rivers as it heads inland. Areas of the current coastline and past coastlines at various points along the Ancient Landscape—where the Serpent would have emerged onto the land—are within the EMBA. Areas of the broader ocean where the serpent may have originally lived are not specified. Barber and Jackson (2011) also recount a story where a freshwater serpent pushes a sea serpent back into the ocean where it presumably continues to reside. This does not provide the specificity required to determine the location of sea serpents within the sea, and it is possible that the ocean as a whole (out to and beyond other continents) should be viewed generally as housing the sea serpent(s). Consultation with Traditional Custodians and ethnographic surveys have not identified impacts on sea serpents from the Petroleum Activities Program. However, by analogy to other water serpent narratives across Australia, possible impact pathways may include interruption of its path by blocking or reducing flows of water, damaging sacred sites such as thalu or rock art sites or depleting water sources.</p> <p>No impacts to water flows (either tidal movement or ocean currents) or depletion of water sources are anticipated from this Petroleum Activities Program.</p> <p><u>Cultural Obligations to Care for Country</u></p> <p>Caring for Country collectively refers to the cultural obligations of individuals and groups, as well as rituals and ceremonies required for the physical and spiritual health of the environment. Lack of access to coastally located cultural sites that carry songlines or remain ceremonially important can impact First Nations people’s livelihoods and impact their ability to carry out cultural obligations on Country.</p> <p><u>Knowledge of Country/Customary Law and Transfer of Knowledge</u></p> <p>Cultural knowledge about Sea Country/customary law and the intergenerational transmission of knowledge are important values identified through consultation, assessments and the literature review. Transfer of knowledge includes continuing traditional practices to pass on practical skills.</p> <p>Direct impact to communities practicing these skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in population—for example traditional fishing methods require the survival of traditional fish resources. Therefore, ensuring the transmission of cultural knowledge may require environmental controls protecting species and migratory pathways at a population level. Refer to species specific assessment below for further information, in addition to the impact and risk assessment in Section 6.6, 6.7 and 6.8 respectively.</p> <p><u>Connection to Country</u></p> <p>Connection to Country describes the multi-faceted relationship between First Nations people and the landscape, which is envisioned as having personhood and spirit. No impacts to connection to country are anticipated as a result of exclusion or displacement of Aboriginal communities. Access to Country is discussed below.</p> <p><u>Access to Country</u></p> <p>Access to Country, including Sea Country, is necessary for the continuation of other values including caring for Country and the transfer of traditional knowledge. Access is also a value in its own right, as a continuation of traditional Sea Country access and use.</p> <p>Access to areas within the Operational Area may be limited where exclusion zones are established around vessels for safety purposes. Further the exclusion zones around drilling activities are temporary and presence of subsea infrastructure are not anticipated to affect navigation, particularly given the water depth. Access to Country within the EMBA is also not expected to be affected in the highly unlikely event of an unplanned hydrocarbon release. However relevant cultural authorities will be engaged in the event of a spill that may affect them.</p> <p><u>Restrictions on Access to Country</u></p> <p>No information was received which suggested any part of the Operational Area cannot be accessed in a culturally appropriate way. However, some areas of the EMBA may be subject to cultural restrictions on access, or may be culturally dangerous to access in any respect. Access to these areas would only be required in response to an unplanned impact.</p>

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Kinship Systems and Totemic Species

Individuals may have kinship to specific species (Smyth, 2008; Juluwarlu, 2004) and/or a responsibility to care for species (Muller, 2008). These relationships are understood to impose obligations on Traditional Custodians. It is understood that these obligations do not impose restrictions on other people generally, but it is considered that impacts to species at a population level may inhibit Traditional Custodians with kinship relationships' ability to perform their obligations where this results in reduced or displaced populations. It is therefore considered that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. As such, impacts to individual marine fauna is not expected to impact on the totemic or kinship cultural connection. Refer to species specific assessment below for further information, in addition to the impact and risk assessment in **Section 6.6, 6.7 and 6.8** respectively.

Resource Collection

A number of marine species are identified through consultation and literature as important resources, particularly as food sources. In addition to their immediate value as sustenance, the gathering and preparation of these resources are informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these communities may be impacted where there is an impact at the species/population level. Refer to species specific assessment below for further information, in addition to the impact assessment in **Section 6.6**.

Relevant cultural authorities will be engaged in the event of a spill that may affect them.

Marine Species

Marine Mammals

There are increase ceremonies/rituals for species of animals and plants, important to First Nations, to enhance or maintain populations. Thalu are places where these increase ceremonies are performed. All mentions of active ceremonial sites were confined to onshore locations, though the values may extend offshore where, for example, the thalu relates to marine species populations. As thalu ceremonies are performed to maintain and increase populations of marine species, it is considered that management applies at the species/population level and not to individuals—for example the thalu site on Murujuga which “brings in whales to beach” will continue to serve its purpose so long as whales continue to migrate through Mermaid Sound.

Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn, 2021). First Nations groups have expressed interest about whale migratory routes and studies (**Table 4-20**). Inter-generational transmission of cultural knowledge (including songlines) relating to marine mammals may be impacted where changes to population or behaviour at a population level results in reduced sightings (e.g. through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).

As described in the relevant environmental impact and risk assessment **Section 6.6, 6.7 and 6.8** respectively, potential impacts to whales are limited to behavioural disturbance to transient individuals, which are not considered to be ecologically significant at a population level, and hence not expected to impact the value of marine mammals, including the transmission of cultural knowledge. The Operational Area does overlap the BIAs for Migration for the Pygmy Blue Whale and Humpback Whale. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Marine Reptiles

Turtles and their eggs have been identified through consultation and existing literature as an important resource, particularly as food sources (**Table 4-19; Table 4-20**). Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) will be impacted where there is an impact at the species/population level.

Intangible cultural heritage may also include the transmission of cultural knowledge about marine reptiles, such as nesting areas, hunting areas and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn, 2021). First Nations groups have expressed an interest regarding turtle monitoring programs and migration patterns (**Table 4-20**). Activities that impact turtle populations and their marine environment may have an indirect impact on some Aboriginal

Aspect	Cultural Features and Heritage Values
	<p>communities as this can limit access to cultural sites or deplete hunting areas that would threaten local food security (Delisle et al., 2018:251). Inter-generational transmission of cultural knowledge (including Songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g. through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).</p> <p>As described in the relevant environmental impact and risk Section 6.6, 6.7 and 6.8 respectively, potential impacts to marine reptiles are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts will not occur to significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. Further, the Operational Area and EMBA do overlap marine turtle BIAs. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.</p> <p><u>Fish</u></p> <p>Fish have been identified through consultation and existing literature as an important resource, particularly as food sources. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced or suffers a reduction in population. Therefore, these species (as resources) will be impacted where there is an impact at the species/population level.</p> <p>During consultation, fish were identified as important agents in the management of the broader ecosystem in Mermaid Sound, which is outside of the EMBA, but is assumed to also apply general to marine environments Inter-generational transmission of cultural knowledge relating to fish may be impacted where changes to population/behaviour results in reduced sightings (e.g. through population decline). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003). Intangible cultural heritage associated with fish, including inter-generational knowledge regarding fishing techniques and migratory patterns, can be managed by reducing impacts to fish in nearshore marine environments to which this cultural knowledge is intrinsically connected.</p> <p>As described in the relevant environmental impact and risk Section 6.6, 6.7 and 6.8 respectively, it is expected that fish, sharks and rays may demonstrate avoidance or attraction behaviour however, potential impacts are not considered to be ecologically significant at a population level. The Operational Area and EMBA do not overlap any whale shark BIAs. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.</p> <p><u>Benthic habitats (coral, seagrass)</u></p> <p>Through consultation, First Nations groups identified benthic habitats as valuable for their ecological values, including corals attracting fish and seagrass providing shelters for fauna, as well as an important habitat for dugongs. Additionally, coral is valued by MAC for its aesthetic values.</p> <p>As described in the relevant environmental impact assessments in Section 6.6, the potential impacts from the Petroleum Activities Program on benthic habitats is assessed to be no lasting effect. Potential environmental impacts to benthic communities have been assessed in Section 6.6.</p> <p>In terms of risk, as described in Sections 6.7.1 and 6.8, a change in habitat may occur due to a change in water or sediment quality following an unplanned hydrocarbon release. Given hydrocarbon characteristics, rapid weathering, short-term exposure, as well as the response strategies planned to be deployed, an unplanned release is not expected to result in a level of exposure to coral and seagrass that would cause an adverse impact on marine ecosystem functioning or integrity results. As such, cultural values and intangible cultural heritage associated with benthic habitats are expected to be maintained.</p> <p><u>Shoreline Habitats (coastal vegetation, mangroves)</u></p> <p>Through consultation, First Nations groups identified shoreline habitats as valuable for their ecological values, including coastal vegetation such as mangroves which provide shelter to marine invertebrates, which are identified resources, and potential nursery for turtles. Literature also notes that mangroves are also valued for the flora and fauna they are associated with and support (Commonwealth of Australia 2002) and Smyth (2007) reports that mangrove seeds are used as a resource by Ngarda-Ngarli.</p> <p>There is no overlap between the Operational Area and shoreline habitats, and no planned impacts to shoreline habitats from the Petroleum Activities Program. In terms of risk, as described in Sections 6.7.1 and 6.8, a change in habitat may occur due to a change in water or sediment quality following an unplanned hydrocarbon release. Given hydrocarbon characteristics, rapid weathering, as well as the response strategies planned to be deployed, an unplanned release is</p>

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Aspect	Cultural Features and Heritage Values
	<p>not expected to have a substantial adverse impact on marine ecosystem functioning or integrity. As such, cultural values and intangible cultural heritage associated with shoreline habitats are expected to be maintained.</p> <p>Coastal Landforms</p> <p>There is no overlap between the Operational Area and coastal landforms, and no planned impacts to coastal landforms from the Petroleum Activities Program. For coastal landforms beyond the Operational Area, the EMBA is driven by an unplanned hydrocarbon release. There is no anticipated impact pathway from the presence of marine diesel on the physical existence of coastal landforms such as hills, waterways or dune systems. Access to Country within the EMBA is also not expected to be affected in the highly unlikely event of an unplanned hydrocarbon release. However relevant cultural authorities will be engaged in the event of a spill that may affect them.</p> <p>As such, cultural values and intangible cultural heritage associated with shoreline habitats are expected to be maintained.</p> <p>Conclusion</p> <p>The impact and risk assessment has determined that the planned activities are unlikely to result in an impact greater than negligible⁶¹ (F) and unplanned activities are assessed to have a residual risk rating of moderate (or lower).</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.14 of this EP).</p>

Demonstration of ALARP				
Control considered	Feasibility (F) & Cost/Sacrifice (Cs)	Benefit in Impact/Risk Reduction	Proportionality	Adopted
Apply a 'living heritage' ⁶² management approach. Woodside seeks advice and incorporates Traditional Custodian cultural knowledges across our activities. Cultural safety considerations are factored for our workforce and the Traditional Custodian community.	F: Yes. CS: Minimal.	Implementation of the 'living heritage' approach pays acknowledgement and respect to Traditional Custodian communities. It supports the transfer of cultural knowledges and is an effective strategy to manage intangible cultural values.	Benefits outweigh cost/sacrifice.	Yes C 22.1

⁶¹ Noting that as the receptor sensitivity is high, the impact significance level is Slight (E).

⁶² Living heritage supports community and individual identity. Intangible cultural heritage is 'living heritage' that is inherited from ancestors and passed on to their descendants. It is comprised of many influences, including oral traditions, art, social practices, rituals and ceremonies, cultural knowledge and practices. It is transmitted from generation to generation, and evolves in response to the environment. Woodside applies a 'living heritage' approach to its cultural heritage management. This includes ensuring that Traditional Custodians are given voice to identify interests, transmit information and express concerns. Woodside works with Traditional Custodians to support and follow appropriate cultural protocols, including calling to Country, conducting smoking ceremonies (in areas where this custom is appropriate) and undertaking cultural awareness.

Demonstration of ALARP				
Control considered	Feasibility (F) & Cost/Sacrifice (Cs)	Benefit in Impact/Risk Reduction	Proportionality	Adopted
<p>C 3.1 EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures⁶³:</p> <ul style="list-style-type: none"> Project vessels will not travel greater than 6 knots within 300 m of a cetacean (caution zone) and not approach closer than 100 m from a whale. Project vessels will not approach closer than 50 m for a dolphin and/or 100 m for a whale (with the exception of animals bow riding). If the cetacean shows signs of being disturbed, project vessels will immediately withdraw from the caution zone at a constant speed of less than 6 knots. 	<p>F: Yes. CS: Minimal.</p>	<p>Implementation of controls for reduced vessel speed around marine fauna can potentially reduce the underwater noise footprint of a vessel and reduces the likelihood of impact or influence on whale activity. Where this control prevents impacts to whales at a population level, it maintains a culturally significant resource to a level that results in no observable change to coastal communities (migratory pathways maintained).</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes C3.1</p>
<p>Should it be identified, that relevant cultural authorities may be affected in the unlikely event of a spill, Woodside will engage with those parties as appropriate and in alignment with the OSPRMA.</p>	<p>F: Yes. CS: Minimal.</p>	<p>Engaging with relevant cultural authorities that may be impacted by a spill will allow the Traditional Custodians to identify areas of concern. This will also allow Traditional Custodians to confirm areas where access is not culturally appropriate so these can be considered for avoidance, or advice of the necessary requirements to access such areas (such as the gender of respondents or necessary ceremonies).</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes Adopted.</p>
<p>As marine ecosystems may hold both cultural and environmental value (see Section 4.10), with cultural and environmental values intrinsically linked, in addition to the above controls, the controls in Section 6.6, 6.7 and 6.8 will reduce impacts to cultural features and heritage values.</p>				

⁶³ For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability; e.g. anchor handling, loading, back-loading, bunkering, close standby cover for overside working and emergency situations.

Demonstration of ALARP				
Control considered	Feasibility (F) & Cost/Sacrifice (Cs)	Benefit in Impact/Risk Reduction	Proportionality	Adopted
ALARP Statement				
<p>On the basis of the impact and risk assessment outcomes and use of the relevant tools appropriate to the decision type (i.e. Decision Type A). Woodside considers the adopted controls appropriate to manage the potential impacts and risks to cultural features and heritage values. As no reasonable additional/alternative controls were identified that would further reduce the impacts without grossly disproportionate sacrifice, the impacts are considered ALARP.</p>				
Demonstration of Acceptability				
Acceptability Statement:				
<p>The impact and risk assessment has determined that, given the adopted controls, planned activities are unlikely to result in an impact greater than negligible (F)⁶⁴ and unplanned activities are assessed to have a residual risk rating of moderate (or lower).</p> <p>The Petroleum Activities Program and the EMBA do not overlap the Ancient Landscape and they are not anticipated to have a significant impact on MNES (Section 4.7 including marine fauna with a First Nations connection with, or traditional use in nearshore areas as defined in Section 4.9.5). Woodside has engaged with Traditional Custodians adjacent to the EMBA to understand the cultural features and heritage values that may occur and potential impacts from the activity. Further opportunities to reduce the impacts have been investigated above. The potential impacts and risks are considered acceptable if the adopted controls are implemented. Therefore, Woodside considers the adopted controls appropriate to manage the impacts and risks to cultural features and heritage values to a level that is acceptable if ALARP.</p>				

Environmental Performance Outcomes, Standards and Measurement Criteria related to Cultural Features and Heritage Values ⁶⁵			
EPO	Adopted Control(s)	EPS	MC
EPO 22 No Impact to cultural features and heritage values, as state in Table 4-20, great than a consequence level of F from the PAP	C 22.1 Apply a 'living heritage management approach. Woodside seeks advice and incorporates Traditional Custodian cultural knowledge across our activities. Cultural safety considerations are factored for our workforce and the Traditional Custodian community.	PS 22.1.1 Woodside will continue to give voice to Traditional Custodians to identify interests, transmit information and express concern	MC 22.1.1 Records demonstrate Change Management and Management of Knowledge processes have been followed where new controls or management
		PS 22.1.2 Woodside will assess and where deemed practicable will implement appropriate cultural protocols by Traditional Custodians	MC 22.1.2 Records demonstrate Woodside implemented cultural protocols as requested.

⁶⁴ Noting that as the receptor sensitivity is high the impact significance level is Slight (E).

⁶⁵ As marine ecosystems may hold both cultural and environmental value (see Section 4.9.1), with cultural and environmental values intrinsically linked, in addition to the specific controls for cultural features and heritage values, the controls and performance standards in section 6.7 and 6.8 will reduce impacts to cultural features and heritage values.

7 IMPLEMENTATION STRATEGY

Regulation 22 of the Environment Regulations requires an EP to contain an implementation strategy for the activity. The implementation strategy for the Petroleum Activities Program confirms fit-for-purpose systems, practices and procedures are in place to direct, review and manage the activities so that environmental risks and impacts are continually being reduced to ALARP and are acceptable, and that EPOs and EPSs outlined in this EP are achieved.

Woodside, as Operator, is responsible for ensuring that the Petroleum Activities Program is managed in accordance with this implementation strategy and the WMS (see **Section 1.8**).

7.1 Systems, Practice and Procedures

All operational activities are planned and performed in accordance with relevant legislation and internal environment standards and procedures identified in this EP (**Section 6**).

Processes are implemented to verify controls to manage environmental impacts and risks to:

- a level that is ALARP and acceptable
- meet EPOs
- comply with EPSs defined in this EP.

The systems, practices and procedures that will be implemented are listed in the EPSs contained in this EP. Document names and reference numbers may be subject to change during the statutory duration of this EP; this is managed through a change register and management of change (MoC) process (**Section 7.1.14**). Further information regarding some of the key systems, practices and procedures relevant to implementation of this EP is provided below.

7.1.1 Woodside Management System Operate Processes

Under the WMS Operate Activity (see **Section 1.8** for an overview of the WMS), there are four overarching processes; those directly relevant to the implementation of this EP and environmental management during the Petroleum Activities Program are described below (Operate Plant Process and the Maintain Assets Process).

7.1.1.1 Operate Plant

The objective of the Operate Plant Process is to ensure production is carried out in a safe, efficient, reliable and economic manner, and that all required process variables are within allowable limits. This ensures the potential for unplanned (accident/incident) events that may impact the environment are minimised.

The Operate Plant Process develops key activities to support ongoing production activities to ensure the facility is operated within the Basis of Design. The process also identifies required production routines, routine execution, recording of data gathered and formulation of remedial activities. The Operate Plant Process includes the Integrated Safe System of Work (ISSoW) system (described below).

In addition, the Operating Practice MSPS (M02) is in place to assure operating practices are in place, such that:

- integrity critical operating procedures are available, accurate, up to date, understood and used
- safe operating and technical integrity limits are defined, understood and the process is managed within these limits.

Integrated Safe System of Work

The ISSoW Procedure outlines the key activities required to achieve effective management of permit-controlled work on the facility. The ISSoW process is a management system for all work and is a key element in ensuring the safety of personnel, protection of the environment and technical integrity of the facility.

Work within the facility 500 m PSZ and operations within the vicinity of the connected flowlines is controlled in accordance with ISSoW.

The ISSoW system takes a risk-based approach to activities, thus tasks with higher levels of risk are subjected to greater scrutiny and control. The ISSoW system also allows for low-risk routine tasks to be carried out with adequate but minimal administration. The prime objective of ISSoW is to ensure work other than normal operations is properly planned, risk assessed, controlled, coordinated and safely executed. It provides a methodical approach to identifying hazards, assessing risks, and creating and supporting permits to work and associated certificates.

In keeping with ALARP principles, this system is critical to ensuring the appropriate level of hazard identification and risk assessment is carried out for activities performed on the facility.

In addition, the Safe Work Control MSPS (M04) is in place to assure effective safe work control, permit to work and task risk management arrangements are in place and followed to control the risks arising from work activities.

7.1.2 Maintain Assets

The Maintain Assets Process aims to improve the reliability and availability of plant and equipment (which includes that required for safe operation) through well managed and planned execution of maintenance that promotes a proactive maintenance culture.

Maintenance, inspection and testing systems and procedures are in place to safeguard the integrity of the facility. The maintenance strategy for the facility is based on optimising safety, minimising environmental impact and maximising production. Maintenance practices used to establish well managed maintenances strategies, planned execution and improvement are described in the Maintenance of Assets Procedure.

A risk-based approach is used as the basis for establishing and prioritising inspection, maintenance and testing requirements at the facility. Equipment is assessed to establish equipment criticality with respect to the consequences and likelihood of equipment failure. This informs determination of appropriate maintenance and inspection activities. Maintenance activities are allocated risk rankings according to the criticality of equipment, to ensure high risk maintenance work orders are completed as a priority.

A computerised maintenance management system (CMMS) provides a database called SAP-PM that contains facility registers, equipment details, spare parts data and associated planned maintenance tasks. This system is used to plan, monitor and record maintenance activities. The system provides a variety of reports that enable monitoring and assessment of maintenance activities.

SCE Technical Performance Standards identify SCEs and associated assurance activities. These activities are identified in the CMMS and given the appropriate priority (Technical Integrity status). Refer to **Sections 2.7.5** and **7.1.18** for more detail on SCE Technical Performance Standards and how they differ from EPSs required by the Environment Regulations. SCE Technical Performance Standards form a key component in the processes and systems implemented by Woodside to maintain safety and environment critical plant and equipment.

In addition, the Maintenance and Inspection MSPS (M03) is in place to assure that the necessary inspection and maintenance requirements are identified and carried out to maintain the integrity of Safety and Environmental Critical Components (SCCs).

7.1.3 Process Safety Management

To ensure that Woodside protects the safety, security and health of its employees, contractors, the environment and assets, Woodside has adopted the Energy Institute’s PSM framework within its PSM Procedure which sets out a disciplined framework for managing the integrity of systems and processes that handle hazardous substances over the production (and exploration) lifecycle. It deals with the prevention and control of events that have potential to release hazardous materials and energy.

PSM consists of four main focus areas. Each focus area contains a number of PSM requirements that define key aspects required to ensure that PSM is integrated through the organisation. There are 20 PSM requirements. The focus areas and requirements are shown in **Figure 7-1**.

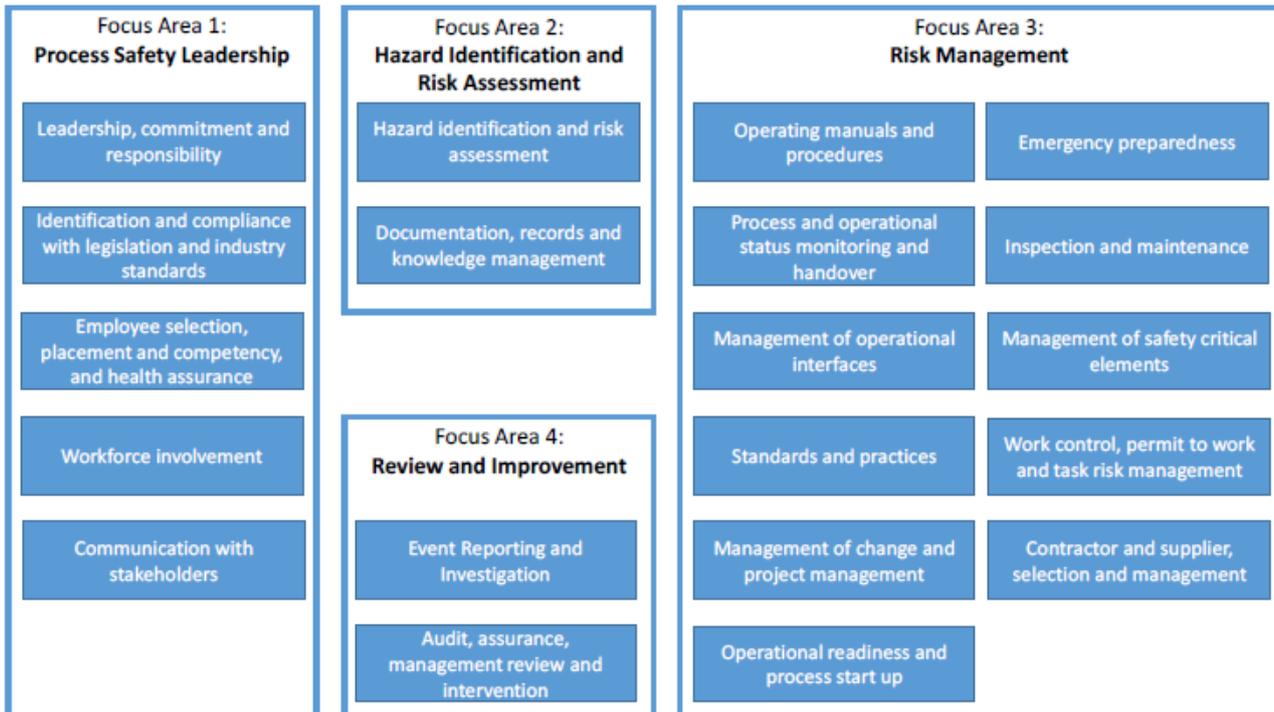


Figure 7-1: Process safety management focus area

7.1.4 Woodside Safety Culture Framework

Woodside’s ‘Our Safety Culture’ framework (shown in **Figure 7-2**) promotes a strong HSE culture and is a key enabler for effective PSM. This framework outlines the expected behaviours for everyone including supervisors and managers/executives, and is openly discussed as part of inductions, training and development.

Theme	Everyone	Supervisors	Managers/Executives
Standards	Follow rules	Ensure compliance	Set high standards
Communication	Speak up	Encourage the team	Communicate openly
Risk management	Be mindful	Promote risk awareness	Confront risk
Involvement	Get involved	Involve the team	Involve the workforce

Figure 7-2: Woodside ‘Our Safety Culture’ framework

7.1.5 Risk Management

Risk management processes and practices are applied on an ongoing basis to design, production and maintenance activities at the NY facility to manage risks to personnel, assets and the environment.

Potential environmental consequences and impacts from the NY facility are risk assessed and controlled in accordance with the Woodside risk management processes described in **Section 2.2** of this EP (Environmental Risk Management Methodology).

The results of the NY facility ENVID are described in **Section 6** and in the facility Environmental Impacts and Risk Register. This register, in conjunction with the EP, provides a demonstration that environmental risks have been identified, and that appropriate controls are in place to manage those risks to a level that is acceptable and ALARP throughout the life of the facility.

A number of other risk management tools and techniques are used by the NY facility to manage environmental and other risks on a routine basis during operational, maintenance and inspection tasks. Examples include:

- the processes outlined in **Section 2**
- risk management tools including: ISSoW tools, e.g. Hazard Identification and Risk Assessments and Level 2 Risk Assessments, Operational Risk Assessments, the technical MoC system (**Section 7.1.14**), and Step back 5 x 5
- integrity review studies, HAZIDs and hazard operability studies.

These tools, risk and integrity management practices are described further in the NY Facility Safety Case, WOMP, and the Control of Operational Risk Procedure.

In addition, other risk sub-processes and practices are also applied within Woodside on an ongoing basis to manage different types of risk. A summary of those relevant to the Petroleum Activities Program is provided below. Woodside’s risk management processes (refer to **Section 2.2.1**), along with the supporting risk sub-processes and practices discussed in this section, ensure the environmental impacts and risks of the activity continue to be identified and reduced to a level that is ALARP.

7.1.6 Management of Risks – Contracting and Procurement

Suppliers and contractors play a significant role in meeting the resource needs of Woodside’s operations, including the facility operations. Effective management of environmental risks in

contracts is achieved by setting clear expectations and managing environmental risks throughout the duration of the contract. Environmental risks in contracts are managed under the Contracting and Procurement Procedure supported by the Health, Safety and Environment in Contracting Guideline. The guideline provides a risk-based approach to contractor selection and management, and is aligned with 'HSE Management – Guidelines for Working Together in a Contract Environment' International Association of Oil and Gas Producers, Report No. 423.

The Engineering Standard Quality Requirements for Supply of Products and Services defines specific quality requirements for engineering contracts and purchase orders. The specified quality control requirements in the Standard are required to be complied with as applicable to the scope of supply.

7.1.7 Management of Risks – Subsea Activities

Subsea activities are managed in line with the Subsea and Pipelines Integrity Management Procedure which defines the practices and technical requirements that must be applied to deliver and safeguard integrity of the subsea equipment and pipelines during the facility lifecycle. It provides the relationship between the PSM Framework (including MoC) and Subsea and Pipelines Group services processes.

IMMR activities are managed under the Manage IMMR Work Procedure. Risk assessments are conducted as required under this procedure.

These requirements are supported by implementation of the Subsea Construction and Inspection, Maintenance and Repair Environment Screening Questionnaire tool. The screening questionnaire is used to understand the scope of the activity, potential environmental impact and if additional regulatory approvals are required. To achieve this, the questionnaire captures key project information such as seabed disturbance, chemical usage and waste. This information is used by an environment focal point to determine if further assessment is required. For projects that have the potential for environmental impact, an assessment is undertaken against this EP and other Woodside environmental requirements. If determined by the Subsea and Pipeline Environment Screening Questionnaire process, an EP MoC review (as per **Section 7.1.14**) is undertaken to confirm if the level of environmental risk warrants revision and resubmission of an EP. Environmental questionnaires are maintained in the Subsea and Pipeline (SSPL) Environment Project Register.

Key environmental requirements and regulatory commitments are communicated to project teams and incorporated into key project documentation where applicable and required (i.e. not addressed via existing Woodside practices).

7.1.8 Management of Risks – Major Projects

Major projects are required to follow the Appraise and Develop Management Procedure and the Opportunity Management Framework. This procedure defines the requirements to deliver a commercially valuable production facility or modify to an existing facility. The process workflow requires integration of work from various functions utilising their people and processes, including Environment, for example HSE philosophy and regulatory approval requirements.

These requirements are supported by implementation of the Brownfields Environment Screening Questionnaire tool. The screening tool is used to determine if a project has the potential for environmental impact or requires additional regulatory approvals. For projects that have the potential for environmental impact, an environmental focal point is assigned and the risks and impacts assessed against the facility EP and other Woodside environmental requirements.

Key environmental requirements and regulatory commitments are communicated to project teams and incorporated into key project documentation where applicable and required (i.e. not addressed via existing Woodside practices). Where it is identified that the project scope has the potential to result in significant modification or change to the facility description provided in the EP, or where potential significant new environmental risks or impacts or significant increases in an existing

environmental risk or impact are identified, an EP MoC review (as per **Section 7.1.14**) is undertaken to confirm if the level of environmental risk warrants revision and resubmission of an EP.

7.1.9 Management of Risks – Well Integrity

Wells are managed throughout their lifecycle in line with the Well Lifecycle Management Procedure. This procedure provides the basis for ensuring well integrity in accordance with the PSM Procedure.

In addition, wells are required to have a regulator accepted WOMP to demonstrate that well integrity risks are managed to ALARP levels. Wells tied back to the facility and ETA wells are managed under a WOMP.

Management of operating wells can be formally transferred from Operations to the D&C Function for activities such as well intervention and workover. Where activities are undertaken by the D&C Function, the risks are managed under the D&C Risk Management Procedure, which specifically addresses the risk of loss of containment from a well or well related equipment. This procedure supplements the Woodside Risk Management Procedure.

7.1.10 Management of Risks – Marine Services

Woodside's Marine Services teams provides a platform for the conduct of safe and efficient Marine Operations across Woodside through the Marine Services Management. A set of procedures that support vessel assurance and management (including HSE and quality management) are in place to ensure marine operations are conducted in a safe and efficient manner, and in accordance with regulatory requirements. Management of subsea activities on subsea support vessels is managed by the SSPL Function.

More details on vessel assurance and the communication of environment requirements to vessels are provided in **Section 7.7.4**.

Vessel masters are required to request clearance from the facility Offshore Installation Manager (OIM) or delegate prior to entering the 500 m PSZ.

7.1.11 Management of Risks – Emissions and Energy Management

Emissions generation and energy use is managed in line with the GHG Emissions and Energy Management Procedure which defines the minimum mandatory requirements to manage and deliver continuous improvement in energy efficiency and reduction in GHG emissions. The procedure supports the implementation of the Climate Change Policy and aligns with the requirements of the Environmental Performance Procedure, applicable to assets in Operate phase. It supports the "operate out" component of limiting net emissions, as shown in the Woodside Climate Change Strategy.

Implementation of the GHG Emissions and Energy Management Procedure assists in meeting external expectations, such as Woodside's 2025 (-15%) and 2030 (-30%) net emissions reductions targets and aspiration to be net zero by 2050. It also aligns with corporate commitments, such as Zero Routine Flaring Initiative for oil assets and the Methane Guiding Principles. The WMS Methane Guiding Principles Management Guideline aims to continually reduce methane through leak detection and repair, accountability and governance, improving methane emissions data and increasing transparency through reporting. The Woodside Flare Framework is a WMS tool that seeks to improve awareness of flaring-related issues and influence for reduced flaring.

The GHG Emissions and Energy Management Procedure links to the annual review of opportunities to improve energy performance through identification and evaluation as described in the Production Optimisation and Opportunity Management Procedure. It also requires measurement, analysis and communication of energy performance across the Operations Division and consideration of actual or potential impacts to energy efficiency in company decision making, such as management of change, operational decisions, issue resolution options analysis and facility optimisation plans.

The Environmental Performance Procedure requires that assets measure, monitor or estimate direct air and GHG emissions, and that such emissions and energy intensities are minimised to ALARP. The requirement to set, measure and track fuel and flare targets for assets help manage the emissions to meet the EPS requirements in **Section 6.6.6**.

7.1.11.1 Production Optimisation and Opportunity Management

Woodside’s Production and Opportunity Management Procedure outlines the process for identification, prioritisation and management of production opportunities that maximise production revenue or reduce emissions intensity across Woodside operated assets. Opportunities are identified throughout the year in various meetings, forums and teams. In addition, formal opportunity identification takes place through annual workshops, which complement the identification of improvement opportunities. These opportunities are prioritised and managed according to the workflow shown in **Figure 7-3**.

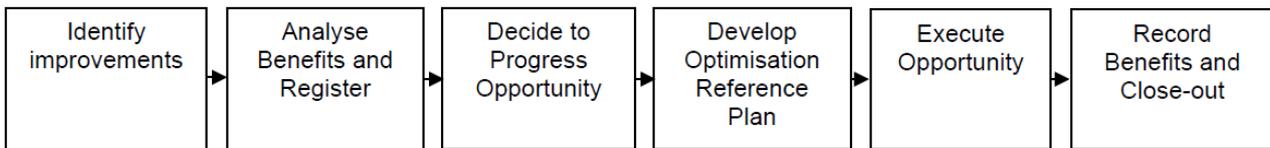


Figure 7-3: Opportunity management workflow

Production opportunities are evaluated and progressed based on value and confidence of return, within the constraints of technical feasibility, cost and other factors. Implemented opportunities are validated and recorded before closeout.

7.1.11.2 Flare Target Setting

In demonstrating the risks and impacts relating to flaring have been reduced to ALARP, flare targets for the facility are set annually in accordance with Woodside’s Greenhouse Gas, Energy and Flare Target Setting Guideline. Targets are estimated based on operating experience and forecast activities; e.g. shutdowns. Consideration is also given to the flaring estimates contained within this EP.

The flare target is tracked against flare performance through the year. Where achieving a flare target is in question, an internal flare target deviation is developed, which requires an ALARP justification. A flare target deviation considers EP flare estimates. If the estimate is likely to be exceeded, an EP management of change assessment (see **Section 7.1.14**) is undertaken to determine if a revision and resubmission is required.

7.1.12 Management of Risks – Indirect Emissions Management

Woodside is committed to actively supporting the global transition to a lower carbon future, as outlined in the Climate Change Policy. To support this policy Woodside undertakes the following measures:

- Set science-based⁶⁶ near, mid, and long-term net emissions reduction targets that are consistent with Paris-aligned⁶⁷ scenarios, covering equity scope 1 and 2 emissions, both operated and non-operated.⁶⁸
- Develop and operate oil and gas projects in a manner that is consistent with these targets. This includes the deployment of lower-emission technologies (Design Out), supporting efficient operations (Operate Out) and use of robust offsets (Offset) as methods to reduce and offset greenhouse gas emissions.
- Invest in new energy products and lower carbon services to reduce customers' emissions (part of Woodside's Scope 3 emissions), including but not limited to hydrogen, ammonia and carbon capture, utilisation and storage.
- Publish transparent climate-related disclosures aligned to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) or other recognised global reporting standards.
- Align our advocacy to the principles of this Climate Policy.

These measures will be amalgamated into a cohesive program to monitor market developments related to the contribution of hydrocarbons in the energy transition and support suppliers and customers to reduce their GHG emissions. The program will be managed by the Climate Team and implementation will be in Q1 2024. The progress against each of the measures will be tracked and reported, as part of Woodside's climate-related disclosures.

7.1.12.1 Annual Review

The measures proposed will be Woodside Corporate initiatives targeting indirect emissions which are attributable to production from Woodside operated facilities as a whole. Via the annual review process and consideration of the controls, if they are deemed to be effective at a Corporate implementation level then it will also be deemed that specific impacts and risks at an Asset contribution level (i.e. proportion attributable to NY production) is also being managed appropriately.

The review process will also undertake an assessment of the NY attributable indirect emissions and consider the EP indirect emission estimates (**Section 6.6.6**). This assessment will include both a review of the total CO₂e estimates and also the methods used to derive the estimates. If the estimate is exceeded, an EP management of change assessment (see **Section 7.1.14**) is undertaken to determine if a revision and resubmission is required.

⁶⁶ Woodside is using the draft Prototype IFRS Sustainability Disclosure Standard definition of "science-based" (published 2021) which states "targets are considered 'science-based' if they are in line with what the most recent climate science sets out is necessary to meet the goals of the Paris Agreement—limiting global warming to below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit warming to 1.5 degrees Celsius." See <https://www.ifrs.org/content/dam/ifrs/groups/trwg/trwg-climate-related-disclosures-prototype.pdf>

⁶⁷ Woodside is using the draft Prototype IFRS Sustainability Disclosure Standard definition of "Paris-aligned scenarios" (published 2021) which states "scenarios consistent with limiting global warming to below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit warming to 1.5 degrees Celsius." See <https://www.ifrs.org/content/dam/ifrs/groups/trwg/trwg-climate-related-disclosures-prototype.pdf>

⁶⁸ Equity emissions means the share of the total emissions arising from an activity that are attributable to Woodside in proportion to Woodside's ownership interest in the activity, irrespective of whether Woodside operates the activity. Operated emissions are the total emissions arising from an activity that Woodside operates, irrespective of Woodside's ownership interest.

7.1.13 Management of Human Factor Related Risks

The term ‘human factors’ is used to describe the consideration of people as part of complex systems. Woodside defines ‘human factors’ as follows: ‘human factors uses what we know about people, organisation and work design to influence performance’.

As outlined in **Section 6.8.7**, human factors can contribute to MEEs, or result in failure or degradation of the controls in place to protect against MEEs. The WMS includes a number of procedures designed to manage human factors related risks and prevent incident causation.

7.1.14 Change Management

Woodside’s Change Management Procedure describes Woodside’s requirements for change management at Woodside owned or controlled operations/sites.

Change management is used where there is no existing approved business baseline, such as a process, procedure or accepted practice, or where conformance with an approved baseline is not possible or intended; for example, due to equipment fault or failure or a recently discovered issue which will take time to rectify. Change management is also used when the baseline is changed (e.g. the process is modified). It applies to management of temporary, permanent, planned or unplanned change encompassing one or more of the following:

- plant: equipment, plant, technology, facilities, operations or materials
- projects: budget, schedule
- people: organisation structure, performance, roles
- process: WMS content, processes, procedures, standards, legislation, information.

Woodside’s change management process hierarchy is depicted in **Figure 7-4**. The hierarchy has been developed with sub-processes to address the different types of change performed at Woodside.



Figure 7-4: Change management hierarchy

To help manage the day-to-day operation of the facility, Woodside has developed a Golden Safety Rules Booklet, which provides a summary of mandatory requirements for safety in the workplace and includes guidance for managing changes that have a Health, Safety, Integrity and/or Environment impact.

7.1.15 Technical Change Management

Technical changes within the Operations Division are managed using the MoC – Assets Procedure. The objective of the MoC – Assets Procedure is to ensure HSE risks associated with both realised and potential changes, including any failure to meet the facility SCE Technical Performance Standards, are identified, assessed and reduced to ALARP (**Section 7.1.18** provides further information on management of SCE Technical Performance Standards).

Assessed changes must be recommended, agreed and decided upon based on the assessed current level of risk, as defined by Woodside’s Technical Decision Authority matrices.

The MoC requirements contained in the PSM Procedure and Management System Performance Standard M05 MoC are considered when conducting any changes with the potential to impact process safety.

The Engineering Management Procedure specifies key requirements of engineering-related changes, and requires that engineering Technical Decisions are agreed, recommended and decided at the appropriate engineering authority level according to the risk. Change management and risk assessment include consideration of applicable legislation/regulation.

Change is also managed under management system requirements set out as part of major projects (Brownfields), wells integrity, subsea and pipelines integrity management and marine management system. Change management includes consideration of regulatory requirements, managed in accordance with the Regulatory Compliance Management Procedure.

In addition, the MoC MSPS (M05) is in place to assure process safety risks arising from change (temporary and permanent) are systematically identified, assessed and managed.

7.1.16 Environment Plan Management of Change and Revision

Woodside's Environmental Approval Requirements Australia Commonwealth Guideline provides guidance on the Environment Regulations that may trigger a revision and resubmission of the EP to NOPSEMA. The document also provides guidance on what may constitute as new source-based or receptor-based impacts and risks, or a significant increase in an existing source of environmental risk (to provide context in determining if EP resubmission is required under regulations 19 and 39 of the Environment Regulations).

Minor EP changes, where a review of the activity and the environmental risks and impacts of the activity shows the changes do not trigger regulatory requirements to resubmit the EP, will be considered a 'minor revision'.

Changes with potential to influence minor or technical changes to the EP text are tracked in MoC records, project records, or the Production EP Updates Register, and incorporated during internal updates of the EP or the five-yearly revision.

In accordance with the requirements of regulation 41 of the Environment Regulations, Woodside will also submit to NOPSEMA a proposed revision to this EP at least 14 days before the end of each period of five years, commencing on the day on which the original and subsequent revisions of the EP are accepted under regulation 35 of the Environment Regulations.

7.1.17 Oil Pollution Emergency Plan Management of Change

Relevant documents from the OPEP will be reviewed in the circumstances of:

- implementation of improved preparedness measures
- a change in the availability of equipment stockpiles
- a change in the availability of personnel that reduces or improves preparedness and the capacity to respond
- introduction of a new or improved technology that may be considered in a response for this activity
- to incorporate, where relevant, lessons learned from exercises or events
- if national or state response frameworks and Woodside's integration with these frameworks change.

Where changes are required to the OPEP, based on the outcomes of the reviews described above, they will be assessed against regulation 26 to determine if EP, including OPEP, resubmission is required.

7.1.18 Management of Safety and Environment Critical Element Technical Performance Standards and Management System Performance Standards

7.1.19 Management System Performance Standards

Woodside ensures safety-critical management processes function as required through the application of MSPS. MSPS are developed and owned at non-facility specific level (i.e. pan Woodside) and include assurance checks for the key requirements of the applicable management system.

Individual facilities demonstrate conformance against the MSPS through the conduct of reviews. Non-conformances against an MSPS are internally managed in accordance with the WMS.

7.1.20 Safety and Environment Critical Element Technical Performance Standards

An SCE is defined by Woodside as a hardware barrier, the failure of which could cause or contribute substantially to, or the purpose of which is to prevent or limit the effect of a MAE/MEE, or Process Safety Event.

Woodside identifies/develops, implements, monitors/assures and verifies/optimises SCEs by applying SCE technical Performance Standards as described in the Safety and Environment Critical Element Management Procedure. Key elements of the procedure are summarised in **Table 7-1**.

Table 7-1: Safety and Environment Critical Element Management Procedure summary

Identify/Develop	<p>Identify SCE – SCEs must be identified from the facilities PSRAs (e.g. Formal Safety Assessments) (Section 2.2). The identification of SCEs for which Performance Standards are required are part of the formal safety and environmental risk assessment processes. Woodside’s Global Performance Standards (based on industry and Woodside Standards) should be used for preliminary selection of SCEs.</p> <p>Complete Engineering Design Studies – Engineering design studies must be completed to demonstrate that SCE Performance Criteria specified in the global Performance Standard and/or determined by PSRA will be met by the facility design, allowing for normal SCE degradation in operation. The studies must establish the testing and inspection tasks required to assess performance against the criteria. The scope and frequency of SCE Assurance Tasks are guided by the Global Performance Standard and may require designated Engineering Design Studies. Studies should include Reliability Centred Maintenance, Risk Based Inspection and Safety Instrumented Function studies to determine the Assurance Task scope and frequencies, RBI plans, and classification and implementation requirements for instrumented safeguarding.</p> <p>Develop Performance Standards – Facilities must develop Performance Standards for all SCEs by:</p> <ul style="list-style-type: none"> • selecting the applicable Global Performance Standard (including Assurance Tasks) • considering facility specific requirements and applicable regulatory requirements • adding the specific data from the facility Engineering Design Studies and PSRA to compile scope and frequency of SCE assurance activities.
Implement	<p>Identify SCE in Asset Register – SCEs must be uniquely identified on the asset register and assigned Performance Standard flags.</p> <p>Develop Testing, Inspection and Maintenance Programs – SCE assurance tasks are developed into maintenance procedures.</p> <p>Implement Testing, Inspection and Maintenance Programs – SCE testing, inspection and maintenance requirements must be implemented in the CMMS.</p>
Maintain/Assure	<p>Execute Testing, Inspection and Maintenance Programs – On completion of SCE assurance tasks, results must be recorded with all relevant detail, assessed for conformance with the Performance Criteria and any follow-on correction work identified.</p> <p>Conduct Fitness for Service (FFS) Assessment – In some instances, an engineering FFS assessment may be required to determine whether equipment has failed its performance standard requirements, e.g. assessment of corrosion defects following inspection of piping. Detailed results of FFS assessment may be recorded out of CMMS.</p> <p>Response to SCE Failure – SCE failure (technical Performance Standard non-conformance) is a failure to achieve the given Performance Criteria. SCE failures must be managed in accordance with a structured review process. This process may require the application of the facility Manual of Permitted Operation (MOPO) which provides prescriptive guidelines to be followed in the event of a reduction in the performance of an SCE, or managed in accordance with the MoC – Assets Procedure (Section 7.1.14).</p> <p>Internal Reporting – SCE failure/damage and SCE demands must be reported in accordance with the Health Safety and Environment Event Reporting and Investigation Procedure (Section 7.9.4).</p> <p>External Reporting – External notification obligations for SCE failure/damage must be understood (i.e. based on local regulatory requirements). External communications must be in accordance with the health safety and environment event reporting and investigation procedure (Section 7.9.5).</p> <p>Manage and Analyse Results – The results from assurance tasks must be accurately recorded to support data analysis. Analysis will enable appropriate action to be taken to minimise future failure recurrences, and enable assessment of overall system performance and reliability to verify SCE effectiveness in revealing failures and to allow predictive maintenance.</p>
Verify/Optimise	<p>Review SCE Performance – SCE performance reviews must be conducted to ensure requirements for maintaining SCE performance are being met.</p> <p>Manage Change – Any change to the Performance Standards must be conducted in accordance with the Change Management Procedure (Section 7.1.14).</p>

SCE Facility Performance Standards are a statement of the performance required of an SCE (e.g. functionality, availability, reliability, survivability), which is used as the basis for establishing agreed assurance tasks and managing the hazard. An assurance task is an activity to confirm that the SCE

meets, or will meet, its SCE Performance Standard. Examples of assurance tasks include inspection routines, maintenance activities, test routines, instrumentation calibration and reliability monitoring.

These assurance tasks are identified in the CMMS, flagged against their associated Performance Standard, and given the appropriate priority (defined as Technical Integrity). Management systems are in place to manage the completion of maintenance including that required for Technical Integrity assurance.

Events where the SCC/SCE have not met their specified performance criteria must be managed in accordance with a structured review process. This process may require the application of the facility MOPO which provides prescriptive guidelines to be followed in the event of a reduction in the performance of an SCE in specific defined circumstances; or, if the MOPO does not cover the event, according to procedures for the assessment and management of operational risk.

Internal notification of SCC failures must be made in accordance with maintenance management workflows. Failures to meet a Facility Performance Standard occur where SCC events lead to the functional objectives (goal and/or key requirement statements) of the facility Performance Standard for the SCE not being met (i.e. lost or unavailable), taking into account any redundancy inherent within the SCE. These events are reported in the Event Reporting Database as potential SCE Failure to Meet Facility Performance Standard Events.

These are internally reported as Hazard Events. Where 'Failure to meet a Facility Performance Standard' leads to a loss of hydrocarbon containment, or a release of energy, it is internally reported (and externally where relevant) as a Loss of Primary Containment or Environmental Spill event, depending on the nature of the release.

Additionally, confirmed 'Failure to meet a Facility Performance Standard' events for the SCEs identified in the MEE bowties may equate to a breach of EPOs and/or EPSs. The review to identify such events for external reporting considers whether the hazard event is relevant to environmental SCE functional objectives (goal and/or key requirements) of the SCE Facility Performance Standard and whether the event poses a risk to achieving EPOs and EPSs. The WMS Regulator Event Reporting Guideline provides additional information regarding external SCE related reporting obligations.

There may also be planned changes/deviations from SCE Technical Performance Standards, these are managed via procedures for the assessment and management of operational risk, and endorsed in accordance with the engineering management procedures (described further within **Section 7.1.14**). This management process ensures risks (including environment) are managed so that the planned change/deviation does not result in unacceptable impact or risk, remains ALARP and regulatory requirements are met.

7.2 Woodside Decommissioning Framework

Decommissioning is a planned activity for the offshore oil and gas industry. Current best practice is for decommissioning to include:

- designing for decommissioning during the development phase of projects/facilities
- removing property, equipment and infrastructure, such as a facility or a pipeline, and plugging and abandoning (P&A) wells associated with a petroleum activity
- assessing decommissioning options and opportunities during the operational life of the facility leading up to cessation of production
- selecting, developing and planning the selected decommissioning option
- executing decommissioning plans
- restoring the marine environment.

This is aligned with Section 572 (3) of the OPGGS Act, which requires titleholders to remove property from the title area when it is neither used, nor to be used, in connection with the operations. Planning for complete removal is generally the base case for offshore decommissioning operations. Section 572 (7) and section 270 (3) of the OPGGS Act provide scope for in situ decommissioning or other arrangements to be made where it can be demonstrated that the risks and impacts are ALARP and acceptable. If complete removal or other arrangements for decommissioning are planned, the proposed alternative presented in an EP must comply with all other Acts and legislation.

7.2.1 Decommissioning in Operations

Asset specific decommissioning plans are typically developed prior to cessation of production. Planning includes redundant infrastructure as well as structures coming to the end of production and decommissioning critical systems to enable, as a base case, full removal.

7.2.2 Facility Decommissioning Planning

Decommissioning planning generally commences two to ten years prior to Cessation of Production (CoP) (Figure 7-5). The timeframe selected for decommissioning planning depends on the complexity of the facility and infrastructure requiring decommissioning.

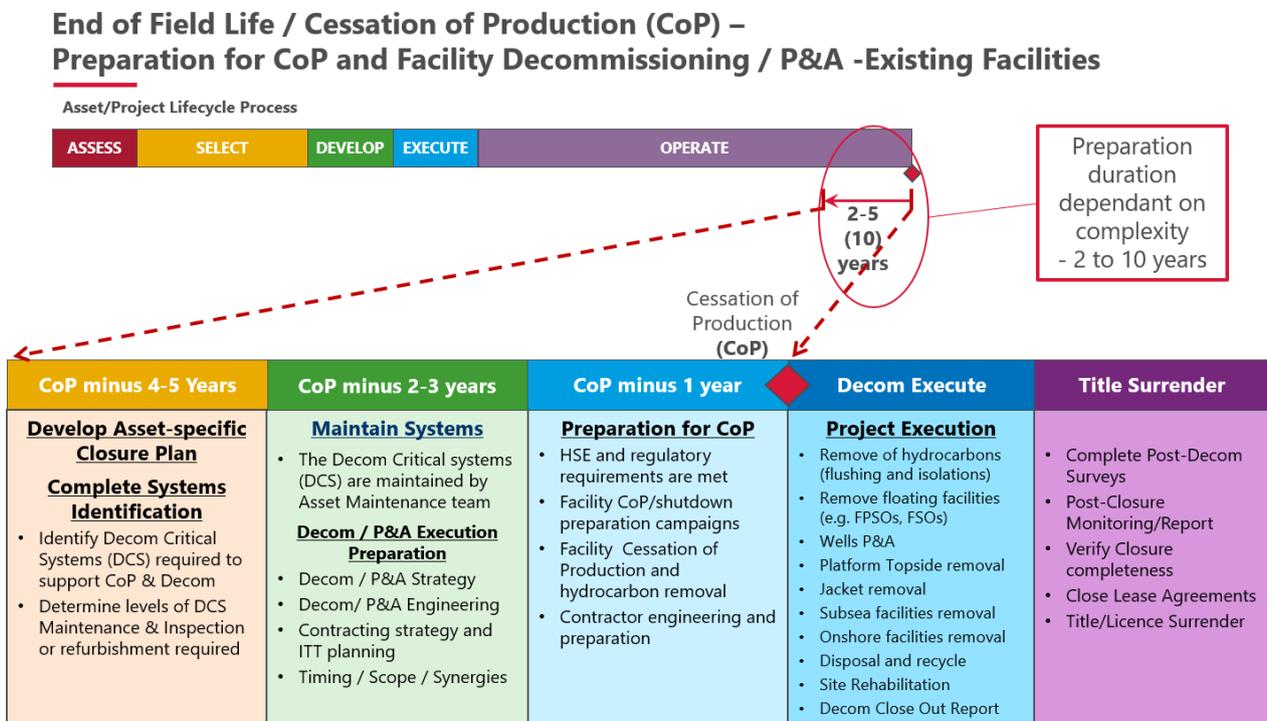


Figure 7-5: Woodside’s process for decommissioning planning

1.1.3 Ngujima-Yin Asset Decommissioning Strategy

The base plan for decommissioning consists of permanent plugging and abandonment of wells, removal of trees, wellheads and other subsea equipment. Buried anchors and mattresses are envisaged as suitable to be left in situ. Removal of the wellheads, manifolds and ridged pipelines located in the water depth above 600 m are subject of the ongoing and future studies to determine ALARP position for decommissioning of these equipment.

After flushing and cleaning of the subsea equipment to ALARP, the FPSO and the STP will be removed out of the field for disposal or divestment.

The subsequent Define/FEED phase works will further define and optimise decommissioning/P&A strategy, scope, and the schedule for the P&A of the wells, decommissioning of the FPSO, STP and decommissioning of the associated subsea infrastructure.

7.2.3 Ngujima-Yin Asset Decommissioning Phasing

Decommissioning of the Ngujima-Yin Asset facilities has been planned in two phases:

- Phase 1 – planning for decommissioning/P&A of the Ngujima-Yin Asset offshore facilities
- Phase 2 – execution of decommissioning/P&A of the Ngujima-Yin Asset offshore facilities.

The expected CoP for the Ngujima-Yin asset (Vincent & Grater Enfield Development) fields is around 2028. This CoP date does not account for asset life extension, which is subject of ongoing studies.

Currently Woodside is also progressing studies in support of the preparations for the future decommissioning activities to optimise the scope and strategy to deliver safe and effective decommissioning outcome.

The key envisaged activities related to the decommissioning are outlined in the target Ngujima-Yin decommissioning schedule is shown in **Figure 7-6**.

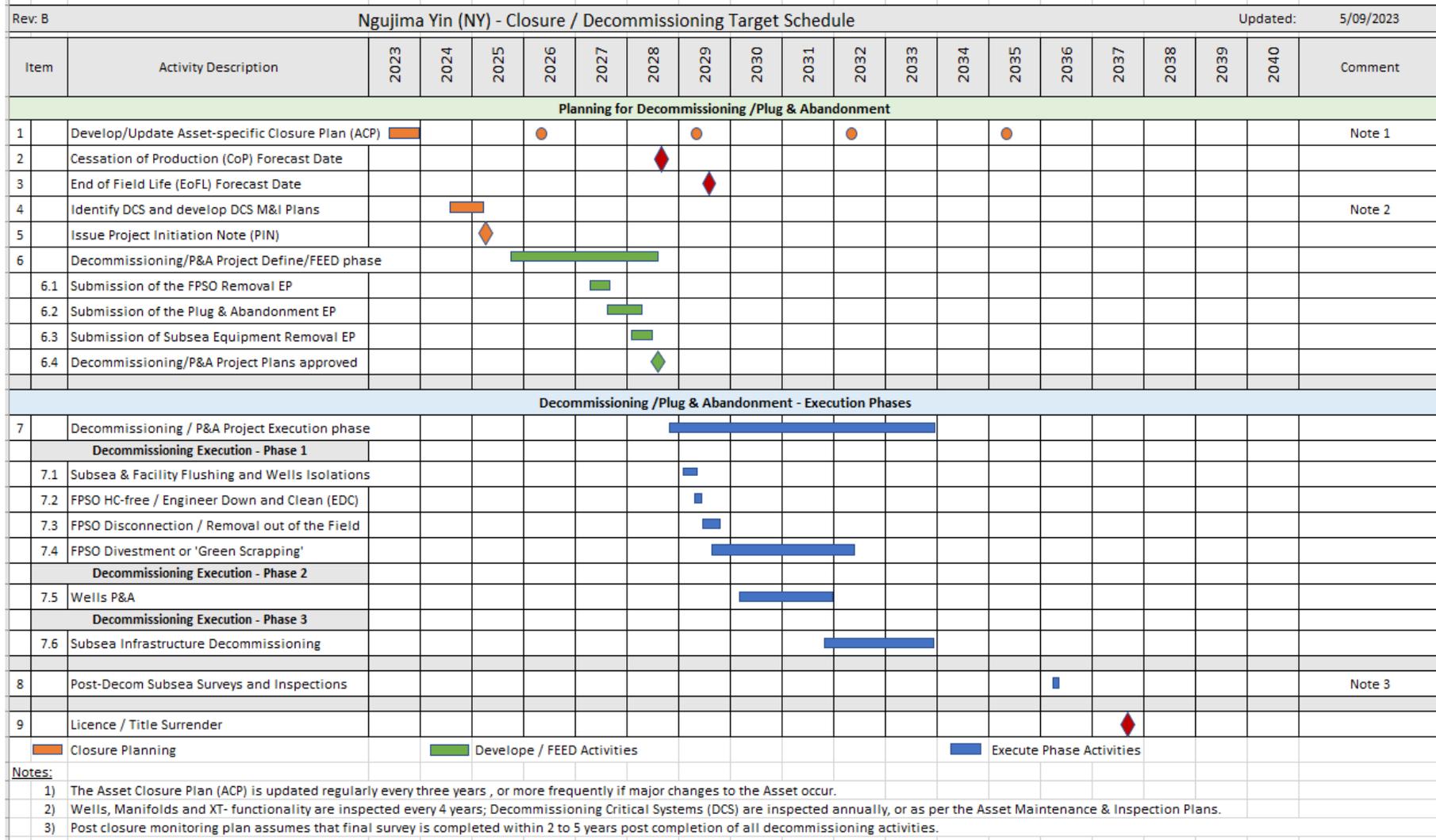


Figure 7-6: Ngujima-Yin asset decommissioning/plug and abandonment target schedule

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7.2.3.1 Phase 1: Planning for Decommissioning – Key Activities

2023: Develop Asset-specific Closure Plan (ACP) – (the ACP will be updated regularly to reflect changes to the asset infrastructure, or to address major changes in Regulator requirements).

2024/2025: Complete Systems Identifications:

- Identify Decommissioning Critical Systems (DCS), the systems whose integrity and functioning are needed to support planned decommissioning activities.
- Determine if any additional Maintenance & Inspection, or refurbishment activities would be required to maintain Ngujima-Yin Asset DCS systems functional until decommissioning activities are completed.
- Update the Asset Maintenance and Inspection Plans (if required).
- Issue Project Initiation Note to initiate Define/FEED works.

2025 to 2028: Undertake Define/FEED Phase works to define decommissioning/P&A scopes and to develop Invitation to Tender (ITT) documentation:

- Complete engineering and planning for the permanent P&A of the Vincent & GE subsea wells.
- Complete technical and environmental studies in support to optimise removal, flushing and well isolations options.
- Complete works to define methodology and strategy for disconnection and removal the FPSO out of the field and the strategy to manage the FPSO and STP disposal.
- Optimise decommissioning/P&A strategy and the implementation timing to maximise execution synergies by combining NY decommissioning/P&A activities with other assets.
- Develop Contracting Strategy Project Execution Plan, permissioning documents, cost and schedule and manage Final Investment Decision (FID) approvals for the decommissioning/P&A project execute phase.
- Submission of the Environment Plan(s) for the activities related to:
 - Flushing of the FPSO, STP, subsea lines and equipment and isolations/separation of the wells from the flushed subsea infrastructure.
 - P&A of the wells.
 - Decommissioning and removal/disposal of the FPSO and STP.
 - Decommissioning/removal of the subsea equipment (e.g. trees, wellheads, flowlines, umbilicals, manifolds offshore gathering pipeline, flexibles, offshore umbilical, manifold etc).
 - Contracting and procurement activities to support targeted execution windows.

2027/2028: Execute asset CoP activities – (**managed by the Ngujima-Yin Asset Operations Team as part of the regular asset's operations activities):

- Ensure HSE and regulatory requirements to support CoP and Engineer Down and Clean (EDC) activities are met.
- Manage CoP and EDC contractor engineering and preparations.
- Develop plans for facility CoP/shutdown campaigns.
- Execute Facility CoP and EDC activities.

7.2.3.2 Phase 2: Decommissioning/Plug & Abandonment – Execution Activities

2028 to 2033: Execute offshore decommissioning and P&A scopes:

- Finalise contracting and procurement activities to support targeted execution windows.
- Complete FPSO and STP removal out of the field.
- Complete wells P&A activities.
- Complete decommissioning/removal of the relevant subsea equipment.
- Issue the Final Ngujima-Yin Asset Decommissioning Close Out Report.
- Complete post-removal survey inspection.

7.3 Organisation Structure

The following Woodside organisational structure provides leadership and direction for operation of the NY facility and environmental performance:

- The Executive Vice President Australian Operations (EVP Aus Ops) reports to the Chief Executive Officer.
- The Executive Vice President (EVP) Australian Operations reports to the Chief Executive Officer.
- The FPSOs and Macedon Vice President (VP) report to the EVP.
- The Asset Manager reports to the VP FPSOs and Macedon.
- The NY Offshore Installation Manager (OIM) reports to the Asset Manager.
- The Reliability & Integrity Manager reports to the VP FPSOs and Macedon.
- The functional support teams report to the corresponding Business Unit VP.
- Production facilities are supported by a team of environmental professionals who report to the Environment Manager – Australian Operations.
- Facilities are supported by other Woodside functional teams, including:
 - **HSE** – provides specific guidance and access to specialist HSE resources including assistance for governance and training, as well as guidance on Woodside HSE standards.
 - **Global Wells and Seismic** – ensures the safe planning and execution of drilling (note drilling is excluded from the scope of this EP), completion and work over operations.
 - **Projects** – responsible for the engineering, construction and execution of small projects on operational facilities to ensure ongoing integrity and safe operation.
 - **Marine Group** – responsible for chartering vessels to support Woodside’s offshore production facilities including vessels to aid emergency response.
 - **Aviation Group** – provides personnel transport, material transport, emergency evacuation and search and rescue capabilities.

A simplified chart of the structural organisation of the NY facility is shown in **Figure 7-7**.

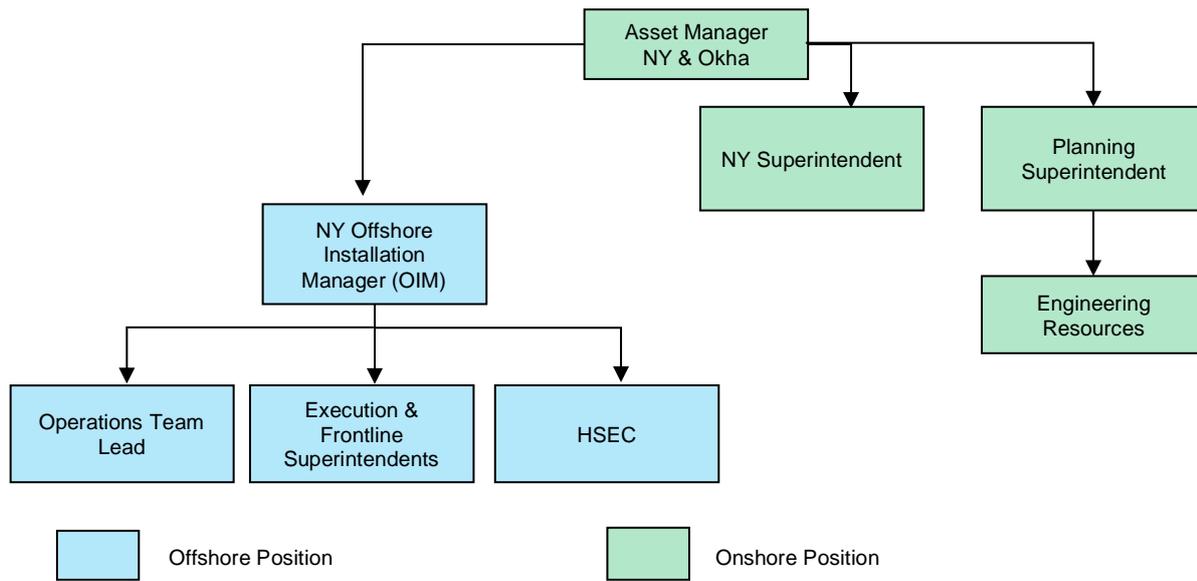


Figure 7-7: Operations Division organisational structure (simplified to show key relevant roles)

7.4 Roles and Responsibilities

As required by regulation 22(4), this section of the implementation strategy establishes a clear chain of command that sets out the roles and responsibilities of personnel in relation to the implementation, management and review of the EP, ranging from senior management to operational personnel on the NY facility and support vessels.

Key roles and responsibilities for Woodside and Contractor personnel in relation to the implementation, management and review of this EP are described in **Table 7-2**. Roles and responsibilities for hydrocarbon spill preparation and response are outlined in **Table 7-2** and the Woodside [Oil Pollution Emergency Arrangements \(Australia\)](#). Roles and responsibilities for facility emergency response are outlined in the NY Facility Safety Case and are consistent with the NY Emergency Response Plan (ERP).

It is the responsibility of all Woodside employees and contractors to apply the Woodside Environment and Biodiversity Policy in their areas of responsibility.

Table 7-2: Roles and responsibilities

Title (Role)	Environmental Responsibilities
All Personnel	
All facility-based personnel and onshore support personnel	<ul style="list-style-type: none"> • Understand the Woodside standards and procedures that apply to their area of work. • Understand the environmental risks and control measures that apply to their area of work. • Carry out assigned activities in accordance with approved procedures and the EP. • Follow instructions from relevant supervisor with respect to environmental protection. • Cease operations which are deemed to present an unacceptable risk to the environment. • Participate in environmental assurance activities and inspections as required. • Prompt reporting of environmental hazards/incidents to their supervisor and assist in event investigation.
Office-based Personnel	
Asset Manager	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Accountable for ensuring all necessary regulatory approvals are in place to operate. • Approve (decide on) the content to be contained in the EP. • Accountable for managing the asset throughout its operations in accordance with legislative/regulatory requirements (including this EP) and WMS requirements. • Responsible for continuous improvement of operations of the facility, including environmental performance. • Responsible for the operation of the facility in accordance with legislative/regulatory requirements (including this EP) and the WMS. • Decide on technical decisions where required based on assessed current level of risk. • Accountable for aspects of integrity management. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> • Decide on technical decisions where required based on assessed current level of risk. • Accountable for incident notification, reporting and investigation in line with regulatory requirements, the WMS and EP requirements. • Communicate changes relevant to the EP to the Production Environment team. • Accountable for conformance to production Operations processes including ISSoW.
Maintenance Engineering Team Leader (METL)	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Responsible for safeguarding process safety with respect to the asset. • Ensure technical integrity risks are identified, managed and reduced to ALARP.

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Title (Role)	Environmental Responsibilities
	<ul style="list-style-type: none"> Recommend technical decisions where required based on assessed current level of risk.
Integrity Authorities (Technical Integrity Custodians, Technical Authorities and Engineering Authorities)	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> Agree technical integrity decision based on assessed current level of risk when discipline owner. Undertake process safety responsibilities as defined under the Woodside process safety framework.
Environment Manager	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> Facilitate operations environmental approval documentation and timely submission in accordance with regulatory requirements. Develop and maintain appropriate Production environmental processes and procedures. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> Monitor and communicate to internal stakeholders all relevant changes to legislation, policies, regulator organisation that may impact the EP or business. Facilitate review of the EP, including five-yearly revision and in relation to any technical decisions or proposed changes to operations.
Environment Adviser	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> Manage change relevant to the EP in accordance with the Environment Regulations and the EP. <p>Resourcing, Training and Competencies:</p> <ul style="list-style-type: none"> Liaise with Woodside contractors and subsea support vessel crew to communicate and ensure their understanding of IMMR related requirements under this EP. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> Ensure environmental monitoring, offshore inspections, and reporting is undertaken as per the requirements of this EP. Coordinate and monitor closeout of corrective actions. Ensure environmental inspections/audits are undertaken as per the requirements of the EP. Ensure environmental incident reporting meets regulatory requirements (as described within the EP) and WMS requirements/
Subsea and Pipelines (IMMR) Activity Manager	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> Ensure IMMR process undertaken in line with EP commitments. Manage IMMR change requests for the activity and notify the Production Environment Adviser of any scope changes in a timely manner. Responsible for governance of IMMR related activities for subsea support vessels. <p>Resourcing, Training and Competencies:</p> <ul style="list-style-type: none"> Provide sufficient resources to implement the EP requirements.

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Title (Role)	Environmental Responsibilities
	Monitoring, Auditing, Non-conformance and Emergency Response: <ul style="list-style-type: none"> • Monitor and close out corrective actions raised from IMMR environmental inspections/audits or incidents.
Corporate Affairs Adviser	Systems, Practices and Procedures: <ul style="list-style-type: none"> • Identify and consult stakeholders. • Report on consultation. • Perform ongoing stakeholder liaison as required.
Woodside Marine Services Function	<ul style="list-style-type: none"> • Responsible for pre-charter assurance for all contracted vessels. • Conduct ongoing operational assurance of vessels contracted through Woodside Marine, to confirm vessels operate in compliance with relevant legislation, rules and Woodside Marine Charterers Instructions in order to be able to meet safety, navigation, operational and emergency response requirements.
Contractor Sponsors	Systems, Practices and Procedures: <ul style="list-style-type: none"> • Ensure implementation of EP for the contractor's scope of work. Resourcing, Training and Competencies: <ul style="list-style-type: none"> • Ensure contractors have adequate environmental capability in order to execute their respective scopes of work. • Review contractor environmental performance as required.
Offshore-based Personnel	
NY Offshore Installation Manager (OIM)	Systems, Practices and Procedures: <ul style="list-style-type: none"> • In charge of the NY FPSO and the field. • Accountable for implementation of the EP at the facility. • Ensure offshore personnel comply with regulatory/legislative requirements (including the EP) and the WMS. • Responsible for Area Operations compliance with Technical Integrity requirements including MoC process, Permit to Work process and MOPO and process safety requirements. • Single point responsible person for the coordination of simultaneous activities. • Implement relevant offshore environment initiatives and review environmental performance to drive continuous improvement. • Ensure effective communication with workforce on environmental performance. • Ensure incidents are reported and investigated in line with WMS and EP requirements, with appropriate actions initiated and closed out. • Decide on technical decisions where required based on assessed current level of risk. • Communicate changes relevant to the EP to the Production Environment team. Resourcing, Training and Competencies:

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Title (Role)	Environmental Responsibilities
	<ul style="list-style-type: none"> • Accountable for the performance and development of direct reports, ensuring operator capability and competency across all shifts and ensuring the skill requirements of the Production division are being met. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> • Lead response efforts (as Incident Controller) in managing emergency or crisis scenarios. • Ensure exercises and drills are conducted in a manner to assure the facility's ability to respond effectively to an emergency.
<p>Operations Supervisor/Operations Team Leader/Maintenance Team Leader/Shift Supervisor</p>	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Accountable for the day-to-day operations of the facility including effective shift handover; completion and logging of operator routine. • Responsible for operations shift compliance to all legislative and regulatory requirements as defined in the EP. • Responsible for permitting and isolation for all frontline work activities. • Responsible for leading and coordinating a multi-disciplined team performing specific duties required to support the facility, including helicopter operations, vessel movements and consumable controls. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> • Responsible for following emergency response protocols in accordance with the emergency response procedure and fulfilling allocated emergency response roles.
<p>Operations and Maintenance Technicians</p>	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Responsible for all daily operations on the facility within their operational control. • Undertake daily operational and maintenance tasks in accordance with approved standards and procedures to ensure compliance with the EP. • Manage day-to-day environmental risks through use of ISSoW and other risk management tools. • Identify opportunities for continuous improvement and communicate these to their Supervisor. • Complete training requirements to maintain competence and knowledge in operating and maintaining equipment, and manage environmental risks and impacts. • Participate in environmental assurance activities and inspections as required. • Report all environmental hazards and incidents and assist in investigations.

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Title (Role)	Environmental Responsibilities
Health, Safety and Environment Coordinator (HSEC)	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Liaise with managers/supervisors on day to day management of environmental risks and issues. • Assist in the ongoing promotion of environmental performance at the facilities and day-to-day management HSE risks and issues. • Identify opportunities for continuous improvement and communicate these to the OIM and Environment Team. • Implement environmental improvement plans. <p>Resourcing, Training and Competencies:</p> <ul style="list-style-type: none"> • Support operational personnel to understand the EP requirements applicable to their role. • Communicate environmental performance information and training material to offshore personnel and maintain associated records. • Communicate changes relevant to the EP to the Production Environment team.
<i>Vessel-based Personnel</i>	
Vessel Master of Support Vessel (Subsea Support Vessels)	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Understand and manage HSE aspects of the vessel, including environmental requirements. • Communicate with OIM as required regarding potential environmental risks applicable to vessel activities. • Ensure vessel meets quarantine requirements. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> • Notify AMSA and other authorities of any incidents as per maritime requirements. • Provide, as requested by Woodside, copies of documents, records, reports and certifications (i.e. fuel use, ballast exchanges, waste logs, etc) in a timely manner to assist in compliance reporting. • Ensure the vessel's Emergency Response Team has sufficient training to implement the vessel's SOPEP. • Ensure all emergency and SOPEP drills are conducted. • Ensure that vessel procedures are followed in the event of an emergency or spill. • Immediately notify the Woodside Representative of any environmental incidents.
Subsea and Pipelines Site Woodside Representative	<p>Systems, Practices and Procedures:</p> <ul style="list-style-type: none"> • Ensure relevant management measures in this EP are implemented on the subsea support vessel. <p>Resourcing, Training and Competencies:</p> <ul style="list-style-type: none"> • Ensure subsea support vessel induction attendance is recorded. <p>Monitoring, Auditing, Non-conformance and Emergency Response:</p> <ul style="list-style-type: none"> • Ensure periodic environmental inspections are completed.

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Title (Role)	Environmental Responsibilities
	<ul style="list-style-type: none">• Ensure environmental incidents or breaches of EPOs, EPSs or MCs are reported in accordance with Woodside and regulatory requirements.

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7.5 Unexpected Finds Procedure

In the event of the discovery of what appears to be underwater cultural heritage (defined as ‘any trace of human existence that has a cultural, historical or archaeological character and is located under water’); the following Unexpected Finds Procedure will apply:

1. All activities with the potential to impact the suspected Underwater Cultural Heritage must cease immediately. Retain all records of the potential Underwater Cultural Heritage including any imagery, description and location.
2. Person who discovers the heritage object must inform the Activity Supervisor.
3. Activity Supervisor must notify Woodside’s Principal Heritage Adviser.
4. Woodside will specify an appropriate buffer around the potential Underwater Cultural Heritage, taking into consideration the nature and scale of the potential Underwater Cultural Heritage and the activities to be managed.
5. No seabed disturbance may occur within the buffer area around the potential Underwater Cultural Heritage until approved by Woodside’s Principal Heritage Adviser.
6. Woodside’s Principal Heritage Adviser must notify a qualified maritime archaeologist and provide all available documentation of the potential Underwater Cultural Heritage.
7. If the potential Underwater Cultural Heritage appears to be Aboriginal Underwater Cultural Heritage, Woodside’s Principal Heritage Adviser must notify the appropriate Traditional Custodians to determine whether it is a heritage site and if so, how the site should be managed.
8. If the potential Underwater Cultural Heritage appears to be a shipwreck or aircraft that has been wrecked for more than 75 years, or is otherwise reportable under Section 40 of the UCH Act, Woodside’s Principal Heritage Adviser must notify the Minister responsible for the UCH Act, the DCCEEW underwater archaeological section through the Australasian Underwater Cultural Heritage Database, and the Western Australian Museum.
9. If the suspected heritage object includes human remains, Woodside’s Principal Heritage Adviser must also notify:
 - the Australian Federal Police (phone: 131 444) of the location of the remains, that the remains are likely to be historic or Aboriginal in origin, and that it may be appropriate that Traditional Custodians and a maritime archaeologist are present during any handling of the remains
 - the Office of the Federal Environment Minister in accordance with Section 20 of the ATSIHP Act.
10. Work must not recommence in the vicinity of the heritage object until Woodside’s Principal Heritage Adviser provides written approval. Woodside’s Principal Heritage Adviser must only provide written approval once agreed management measures are implemented consistent with approvals and legislation or where the potential Underwater Cultural Heritage is confirmed to not be Underwater Cultural Heritage.

7.6 Training and Competency

As required by regulation 22(5), this section of the implementation strategy includes measures that ensure all personnel associated with operating the NY facility are aware of their EP related responsibilities, and that all relevant personnel have appropriate competencies and training.

Environmental training is undertaken to ensure employees and contractors whose work may impact on the environment have the necessary awareness, knowledge and competence appropriate for their role.

Different levels of training are undertaken in relation to managing environmental risks and impacts for the production offshore facilities and associated subsea support vessel based IMMR activities, specifically:

- inductions for offshore facility workers and visitors
- operations competency framework training
- permit to work training (ISSoW)
- production environmental leadership training and environment awareness training
- emergency and hydrocarbon spill response training
- inductions for subsea IMMR (vessel based) personnel.

Records for Woodside production personnel, in relation to the above listed training, are maintained in Woodside's learning management system. Contractor training records are also maintained.

Competence of operations personnel can be reviewed via online dashboards.

7.6.1 Inductions for Offshore Facility Workers and Visitors

A comprehensive induction process is in place for personnel working on or visiting Woodside's offshore production facilities. The induction process is designed to equip personnel with the HSE awareness and skills necessary for them to manage their own safety and environmental performance and contribute to others working around them. The induction process includes:

- **Common Production Induction** – All employees and contractors who have not accessed a production facility within twelve months are required to undertake this induction prior to mobilisation. It includes Woodside's values, HSE and Process Safety, continuous improvement, risk management and ISSoW.
- **Facility Specific Induction** – All employees and contractors that have not accessed the production facility within six months are required to undertake this induction on arrival at the facility. This induction covers the HSE and emergency response issues specific to each facility. For environment, this induction covers the Facility EP, prevention of spills, waste management, fauna interactions, hazard identification and risk assessment, and incident reporting.
- **Production Offshore Environmental Leadership Training** – Key operations leadership roles (as specified within the Operations Competency Framework) are required to complete this competency on commencement of the new role and three yearly thereafter. The training covers Woodside's policies and standards, environmental legislative requirements, the EP, key environmental risk and impacts, environmental reporting, environmental management tools (e.g. improvement planning, compliance reviews and audits), hydrocarbon spill response and environmental accountabilities.
- **Production Offshore Environmental Awareness Training** – All new offshore operational personnel are required to undertake this online training on commencement of the new role and two yearly thereafter. This training covers environmental legislative requirements, the facility EP, key environmental hazards and control measures (including waste management, spill prevention, chemical storage, wildlife interactions), environmental management tools, hazard and incident reporting, spill response, and environmental responsibilities.

7.6.2 Operations Competency Framework Training

The Operations Competency Guideline defines a framework to make sure all personnel on operating facilities are competent to perform their work and that competency is managed. By doing this, the potential for unplanned (accident/incident) type events that could result in environmental impact is minimised.

Operational Area Licence to Operate (LTO) roles are those roles related to oil and gas processing, equipment maintenance, marine regulations, emergency response and any other roles involved with safeguarding the facility integrity, including all roles where high-risk work licences are required. Additionally, roles mandated by Woodside such as HSEC and helicopter landing officer are included in the LTO roles process.

The requisite competency and training for each LTO role has been defined. Competencies for these LTO roles are stipulated by the governance group for each respective position and are based on the relevant Australian or International standards which apply. In cases where no Australian or International standards are available or applicable, training is based on the relevant Woodside Standard as determined by the respective governance group.

Contractors working on Woodside facilities are required to verify the competency of their personnel through the contractor's own verification systems. Additionally, contractor personnel working on Woodside facilities are required to be registered in Woodside's Contractor Verification Service (CVS) beforehand. Personnel registered in CVS have had their skills and qualifications independently verified on behalf of Woodside thereby confirming that contractor personnel hold the required competencies before mobilisation to the facility.

The LTO Roles Report (available online on the Woodside Competency Reporting Dashboard on the Production Academy Intranet page) provides the conformance status of the facility against the LTO roles requirements.

7.6.3 Permit to Work System Training

The ISSoW permit to work system (see **Section 7.1.1**) is a key element in ensuring that all necessary steps are taken to ensure the safety of personnel, protection of the environment and technical integrity of the facility. The ISSoW system takes a risk-based approach to all activities, thus tasks with higher levels of risk are subjected to greater scrutiny and control.

All members of the workforce that are required to work with ISSoW (**Section 7.1.1**) receive training commensurate with the level of authority and responsibility they hold in ISSoW.

7.6.4 Emergency and Hydrocarbon Spill Response Training

All operations personnel involved in crisis and emergency management are required to commit to ongoing training, process improvement and participation in emergency and crisis response (both real and simulated), including emergency drills specific to potential incidents at the NY facility. Training includes task-specific training and role-based training and 'on the job' experience (i.e. participation in crisis or emergency management exercises).

An overview of Woodside's hydrocarbon spill response training and competency requirements are provided in dashboards for key responder roles. The roles are consistent with Woodside's crisis and emergency management incident control structure.

Woodside Hydrocarbon Spill Preparedness Advisor(s) are responsible for maintaining hydrocarbon spill preparedness competency. This includes the identification and development of approved competency and non-competency-based courses, identification of relevant personnel required to undertake training, and ensuring training records are maintained. Minimum Woodside capabilities will continue to be identified and documented.

7.6.5 Subsea Inspection, Monitoring, Maintenance and Repair Activity Environmental Awareness

At the beginning of, and during a new subsea IMMR activity, the subsea support vessel crew including contractor crew, Woodside representatives and other relevant personnel are required to undertake a vessel induction before commencing work. This induction covers HSE requirements for

the vessel and IMMR activities, and as required environmental information specific to the activity location. The induction may cover the environmental information of:

- adherence to standards and procedures, and the use of Job Safety Analysis and permit to work hazard identification and management process
- spill management including prevention, response and clean-up, location of spill kits and reporting requirements
- waste management requirements and location of bins
- reporting of marine fauna, location of forms and charts
- chemical management requirements.

All personnel who undertake the project induction are required to sign an attendance sheet which is retained.

Regular HSE meetings are held on Subsea Support Vessels with crew. During these meetings, any environmental incidents are reviewed, and environmental awareness material presented.

7.7 Monitoring, Auditing, Management of Non-conformance and Review

Regulation 22(6) states that the implementation strategy is to provide for the monitoring, audit, management of non-conformance and review of operator's environmental performance and the implementation strategy itself.

This Section of the EP outlines the measures undertaken by Woodside to regularly monitor the management of environmental risks and impacts of the NY facility against the EPOs, EPSs and MCs, with a view to continuous improvement of environmental performance. The effectiveness of the implementation strategy is also reviewed periodically as part of the monitoring and assurance process.

7.7.1 Monitoring

Woodside and its Contractors undertake a program of periodic monitoring during the Petroleum Activities Program. This information will be collected using the tools and systems outlined below based on the EPOs, controls, EPSs and MCs in this EP. Environmental aspects are integrated into Woodside-wide functional and asset review and assurance processes, which deliver effective governance. This integration of environmental controls into appropriate parent systems and processes includes PSM (**Section 7.1.3**), contractor management (**Section 7.1.5**) and marine assurance (**Section 7.7.8**), and provides multi-faceted assurance of routine implementation.

The tools and systems collect, as a minimum, the data (evidence) referred to in the MCs in **Sections 6.6 to 6.8**. The collection of this data will form part of the record of compliance maintained by Woodside and form the basis for demonstrating that the EPOs and EPSs are met. Compliance is summarised in a series of routine reporting documents (refer to **Section 7.9**).

The following tools and systems to monitor environmental performance, (including collection of evidence of compliance with controls), where relevant, include:

- environmental emissions/discharge reporting systems that record volumes of planned discharges to ocean and atmosphere, e.g. via the Production Allocation System and process historian database – a summary of emissions and discharges monitoring that is undertaken during the Petroleum Activities Program is provided within **Table 7-3**
- monitoring of progress against the Production Function scorecard for KPIs (**Section 7.7.1**)
- routine internal reporting (as described in **Section 7.9.2**) and routine external annual compliance reporting (as described in **Section 7.9.3**)
- internal auditing and assurance program (as described in **Section 7.7.4**).

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Collectively, these systems/tools involve collection of evidence of compliance with controls. Throughout the Petroleum Activities Program, Woodside continues to identify new source-based risks and impacts through the Monitoring and Auditing systems and tools described above and within **Section 7.7**.

Other examples of assurance tasks implemented through the EP include:

- start of shift operator walk arounds
- permit to work hazard, risk management check list, area sign-on, and permit audits (ISSoW – **Section 7.1.1**)
- technical integrity SCE performance reviews (daily, weekly, monthly) (**Section 2.7.5**)
- ongoing maintenance performance assurance (e.g. conformance dashboard)
- management system performance audits reviews (e.g. MSPSs) (**Section 7.7.4**)
- data gathering and governance dashboard presentations (e.g. Woodside Integrated Risk and Compliance System).

7.7.2 Management of Knowledge

Review of knowledge relevant to the existing environment is undertaken in order to identify changes relating to the understanding of the environment or legislation that supports the risk and impact assessments for EPs (in-force and in-preparation). Relevant knowledge is defined as:

- environmental science supporting the description of the existing environment
- socio-cultural environment and stakeholder information
- environmental legislation.

The frequency and documentation of reviews, communication of relevant new knowledge and consideration of MoC are documented in the WMS EP Guideline.

Under the Oil Spill Scientific Monitoring Program preparedness, an annual review and update to the environmental baseline studies database is completed and documented. Periodic location-focused environmental studies and baseline data gap analyses are completed and documented. Any subsequent studies scoped and executed as a result of such gap analysis are managed by the Environment Science Team and tracked via the Corporate Environment Baseline Database.

7.7.3 Management of Newly Identified Impacts and Risks

New sources of receptor-based impacts and risks identified through monitoring and auditing systems and tools and the Woodside Environment Knowledge Management System are assessed using the Change Management Process (**Section 7.1.14**).

Table 7-3: Summary of emissions and discharges monitoring for the Petroleum Activities Program

Category	Parameter to be Monitored/Reported	Monitoring Frequency	Monitoring Equipment/Methodology	EP Reference
Planned Emissions				
Atmospheric emissions from fuel combustion	Greenhouse, energy and criteria pollutants	Normally continuous process metering/annual reporting	NGERS and NPI reporting estimation methods (e.g. fuel/flare flow meters, throughput meters, process estimation)	Section 6.6.6
	Fuel gas and flare intensity	Normally continuous process metering/monthly reviews	Fuel and flare flowmeters inform intensity profiles – tracked against optimisation targets	Section 6.6.6
Planned Discharges				
Discharge of subsea control fluids during well actuations	Subsea control fluid consumption	Normally continuous process indication/monthly review	Subsea control fluid consumption surveillance. Process indication for gross leaks/ruptures	Section 6.6.4
Discharge of hydrocarbons and chemicals during subsea IMMR activities	Volumes of hydrocarbons and chemicals released subsea	As required, during IMMR activities (activity specific)	Estimates based on known volumes pumped and ROV observation	Section 6.6.4
Discharge of cooling water	Total Residual Chlorine	Periodically	Total Residual Chlorine testing	Section 6.6.5
Waste recycling and disposal	Quantities of solid and liquid wastes disposed of onshore	Ongoing	Facility waste manifest	Section 6.7.2
Unplanned Emissions and Discharges				
Unplanned emissions and discharges	Nature of release	As required	HSE Event Reporting System (First Priority)	Section 6.8

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7.7.4 Auditing

7.7.5 Operations Assurance

To provide confidence, based on evidence commensurate with risk, that business objectives are met, business activities are performed and risks are managed, assurance is performed as described in the Provide Assurance Procedure and the Provide Assurance Guideline. The Guideline aims to explain how the Operations Division Assurance Team implement WMS Assurance requirements, while concurrently satisfying the Operations Division's specific objectives.

Operations Assurance Assignments are contained within the Operations Division Integrated Assurance Assignment Plan.

Environmental assurance activities are conducted on a regular basis to help:

- verify environmental risks and potential impacts are being managed in accordance with the EPOs and EPSs detailed in this EP
- monitor, review and evaluate the effectiveness of the performance outcomes and standards detailed in this EP
- verify effectiveness of the EP implementation strategy
- identify potential non-conformances.

The outputs of the assurance process are corrective actions that feed the improvement process. Therefore, assurance is a key driver of continuous improvement.

7.7.6 Annual Offshore Inspection/Desktop Review

An inspection/review of the facility is undertaken every calendar year by the Production Environment Team, via either an offshore inspection or desktop review. Selected risk areas/activities are inspected to review environmental performance against the EPOs and EPSs, and verify that control measures are effective in reducing the environmental risks and impacts of the activity to an ALARP and acceptable level.

The inspection/review also includes review of conformance with selected aspects of the EP implementation strategy. All risk sources/activities applicable to the offshore facility will be reviewed over a three-year rolling period. Records of findings and records of close-out of any corrective or improvement actions are maintained (closeout is tracked in Woodside's action tracking system).

7.7.7 Subsea Support Vessel Environment Inspection

Environmental inspections of subsea support vessels are undertaken. This involves annual and ongoing inspections of subsea support vessels to ensure that any subsea support vessel is compliant with both the EP and the approved Contractor Management system. Inspections are conducted in line with the SSPL contractor implementation package, however, may include additional requirements for project specific inspection items.

Vessel inspection findings are captured within a closeout report. Actions arising from subsea support vessel environmental audits are added to the relevant Environmental Commitments and Actions Register (eCAR) within the Subsea Construction, IMMR Environment Project Register. This eCAR is used to track support vessel compliance with EP commitments, including any findings and corrective actions.

7.7.8 Marine Assurance

Woodside's marine assurance is managed by the Marine Assurance Team in accordance with Woodside's Marine Offshore Vessel Assurance Procedure. The Woodside process is based on industry standards and consideration of guidelines and recommendations from recognised industry

organisations such as Oil Companies International Marine Forum and International Maritime Contractors Association.

Woodside's Marine Offshore Assurance process is mandatory for all vessels (other than Tankers and Floating Production Storage and Offloading vessels) that are chartered directly by or on behalf of Woodside, including for short term hires (i.e. <3 months in duration).

It defines applicable marine offshore assurance activities, ensuring all vessel operators operate seaworthy vessels that meet the requirements for a defined scope of work and are managed with a robust Safety Management System.

The process is multi-faceted and encompasses the marine assurance activities of:

- safety management system assessment
- dynamic positioning (DP) system verification
- vessel inspections
- project support for tender review, evaluation and pre/post-contract award.

Vessel inspections are used to verify actual levels of compliance with the company's Safety Management System, the overall condition of the vessel and the status of the planned maintenance system onboard.

The Marine Assurance team may determine that, due to a vessel's risk ranking relative to the defined scope of work, a formal risk assessment may be sufficient and negates the requirement for a vessel inspection.

Vessel inspections may be carried out by Woodside personnel or by an appointed independent third party. Methods of vessel inspection may include:

- Woodside Marine Vessel Inspection
- OCIMF OVID Inspection
- IMCA CMID Inspection
- Marine Warranty Survey.

Upon completion of the marine assurance process, to confirm that identified concerns are addressed appropriately and conditions imposed are managed, the Woodside Marine Assurance Team will issue the vessel a statement of approval.

Should a vessel not meet the requirements of the Woodside Marine Offshore Vessel Assurance Process and be rejected, an opportunity exists to further scrutinise the proposed vessel. This involves a vessel inspection conducted by the Woodside Assurance Specialist or their delegate, which may include an independent third party.

7.7.9 Management of Non-conformance (Internal)

Woodside employees and Contractors are required to internally report all environmental incidents and hazards, including potential non-conformances with EPOs and EPSs in this EP.

The Health, Safety and Environment Event Reporting and Investigation Procedure defines how incidents and hazards are internally reported. Key requirements are set out through the use of an Event Report Form, which includes details of the event, immediate action taken to control the situation, and corrective actions to prevent reoccurrence. An internal online database called First Priority is used for the recording and reporting of these events. Corrective actions are monitored using First Priority and closed out in a timely manner.

Detailed investigations are completed for incidents with an actual impact of A, B or C, and high potential environmental incidents and hazards. The classification, reporting, investigation and

actioning of environmental incidents and hazards is undertaken in accordance with the Health, Safety and Environment Event Reporting and Investigation Procedure supported by the HSE Event Reporting Guideline. Event bulletins may be used for communication of learnings from significant events.

Non-conformances with EPOs and EPSs are also internally reported and investigated in accordance with Regulatory Compliance Management Procedure, supported by the Regulatory Compliance Management Guideline.

External regulatory reporting requirements for this activity are outlined in **Section 7.9** of this EP.

7.7.10 Review

7.7.11 Environmental Risk Review

Woodside risk management processes include risk review, are described in **Sections 2.2.1** and **7.1.5** and are applied on a day-to-day basis. The Facility Environmental Impacts and Risk Register must be reviewed and updated every five years.

Monitoring (**Section 7.7.1**), assurance (**Section 7.7.4**) and review (**Section 7.7.10**) are also used to identify potential new information that may arise during the activity and ensure that performance outcomes and standards are being met and EP environmental control measures are effective. Whilst conducting these activities, qualified, experienced environment advisors, in consultation with experienced Operational and/or Engineering personnel use their professional judgement, to identify potential new control measures that have potential to improve environmental outcomes or reduce risk. As various monitoring/assurance/review processes are used there is not an overarching procedure/checklist that is suitable to contain a prompt for consideration of new environmental controls.

In addition, Woodside's risk management practices and processes are systematically applied on an ongoing basis to activities provided for within the EP (as summarised within **Section 7.1.5**). Via these processes and practices, new risk controls for individual planned and unplanned events may be selected and implemented (proportional to risk levels). When such risk controls are identified by environmental advisors as being relevant to the overarching EP sources of risk, these may also be added as new EP control measures. Any new or improved EP environmental controls or specific measures (that have the potential to improve environmental outcomes or reduce risk), can be tracked within the production EP updates register for incorporation into the EP at its next revision. The EP may be internally revised to reflect these changes without resubmission.

Where review processes identify new or improved controls relevant to environmental risks identified in this EP (that have the potential to improve environmental outcomes or reduce risk), the EP may be internally revised to reflect these changes without resubmission.

7.7.12 Key Performance Indicator Review

Key performance indicators (KPIs) are developed annually and agreed with senior management (i.e. NY Asset Manager). Progress against the environment KPIs is tracked within Asset Scorecards.

Reviews of hydrocarbon spill arrangements and testing are routinely carried out.

7.7.13 Learning and Knowledge Sharing

Learning and knowledge sharing occurs via a number of different methods, including for example:

- operations learnings meetings
- event investigations
- event bulletins

- engineering and technical authorities discipline communications and sharing.

7.7.14 Continuous Improvement

Continuous improvement (CI) projects to improve production or environmental performance that involve refurbishment, modification or major maintenance on the facility are typically managed by Brownfields Engineering and required to follow appraise and develop management procedures. The Procedure requires that all projects be managed in accordance with the Opportunity Management Framework, which supports the progressive maturation of an opportunity through value creation in the Assess and Select Phases and the maintenance of value in the Develop and Execute phases.

To support the accountable executive to make a decision on whether a CI Project should proceed to the next phase in the Opportunity Management Framework, it is sometimes necessary to conduct a trial of the modification to determine the outcomes that can be expected if the modification is implemented. Due to prioritisation of resources, the phased progress of opportunities, competition between different solutions and long-term strategic and financial considerations, it is not possible to set quantitative success criteria to determine whether a modification will be implemented based on the results of trials. Instead, the results of a trial are used to inform a decision on whether to progress the CI Project to the next phase in the Opportunity Management Framework. Decisions are typically made with two key considerations; whether the business is ready to proceed which has a technical/functional focus and whether there is a business case for progressing to the next phase. The business case may consider the ALARP position for the CI Project, if relevant.

7.8 Record Keeping

Compliance records (outlined in MCs in **Section 6**) are maintained. Record keeping is in accordance with regulation 22(7) that addresses maintaining records of emissions and discharges such that the records can be used to assess whether EPOs and EPSs are being met (refer to **Section 7.7.1** and **Table 7-3** for a summary of records that are retained).

7.9 Reporting

7.9.1 Overview

In order to meet the EPOs and EPSs outlined in this EP, Woodside undertakes reporting at a number of levels. These reporting arrangements are outlined below.

7.9.2 Routine Reporting (Internal)

7.9.2.1 Daily Reports

The following daily reports, containing environmental performance information, are issued:

- Pan-Woodside Daily Production Report – The report includes facility performance information on production and a log of any HSE events.
- Subsea support vessel Daily Progress Report(s) – During subsea IMMR activities, daily reports are issued by the Woodside Site Representative. The reports provide performance information on HSE events, diesel use, together with equipment information, current and planned work activities.

7.9.2.2 Performance Reporting

A number of routine performance reports are developed in support of the facility operational activities. These reports cover HSE, production and process safety performance. Information included in these reports, relevant to the EP, includes:

- summary of environment incidents
- current and planned work activities, significant events (e.g. shutdowns, failures)
- integrity status and process safety metrics
- status of subsea IMMR activities.

7.9.3 Routine Reporting (External)

7.9.3.1 Environmental Performance Review and Reporting

In accordance with applicable environmental legislation for the activity, Woodside is required to report information on environmental performance to the appropriate regulator.

Routine regulatory reporting requirements are summarised in **Table 7-4**. The requirements include that Woodside will develop and submit an annual Environmental Performance Report to NOPSEMA, with the first report submitted within 12 months of the commencement of activities covered by this EP (as per the requirements of regulation 22(7)) (i.e. by 30 April the following year).

Table 7-4: Routine external reporting requirements

Report	Recipient	Frequency	Content
Monthly Recordable Incident Report	NOPSEMA	Monthly, by 15th of each month	As required by regulation 50, details of recordable incidents that have occurred under the EP for the previous month. Refer to Section 7.9.5 for more detail.
Annual EP Performance Report	NOPSEMA	Annual, by 30 April of the year following reporting period	As required by regulation 22(2) and 51 the report will report compliance with the EPOs and EPSs outlined in Section 6 of this EP. The reporting period is 1 January to 31 December each year.
NPI Report	DCCEEW	Annual, by 30 September each year	Summary of the emissions to land, air and water including those from the facility. Reporting period 1 July to 30 June each year.
National Greenhouse and Energy Reporting (NGERS)	Clean Energy Regulator	Annual, by 31 October each year	Summary of energy use and greenhouse gas emissions including those from the facility. Reporting period is 1 July to 30 June each year.

7.9.3.2 End of the Petroleum Activities Program Notification

In accordance with regulation 54, Woodside will notify NOPSEMA within ten days of the completion of the Petroleum Activities Program. The Petroleum Activities Program is not expected to end within the five-year life of this EP.

7.9.3.3 End of the Environment Plan

The EP will end when Woodside notifies NOPSEMA that the Petroleum Activities Program has ended, all the obligations identified in this EP have been completed, and NOPSEMA has accepted the notification, in accordance with regulation 46 of the Environment Regulations. As noted above, the Petroleum Activities Program is not expected to end within the five-year life of this EP.

7.9.4 Incident Reporting (Internal)

All Woodside employees and contractors are required to report environmental incidents and non-conformances with this EP. Incidents are reported using an Event Report Form which includes details of the event, immediate action taken to control the situation, and corrective actions to prevent reoccurrence.

7.9.5 Incident Reporting (External) – Reportable and Recordable

Woodside's regulatory reporting requirements are outlined within the Regulator Event Reporting Procedure supported by the Regulator Event Reporting Guideline.

7.9.6 Reportable Incidents

A reportable incident is defined under regulation 5 of the Environment Regulations as 'an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage'.

A reportable incident for the Petroleum Activities Program is:

- an incident that has caused environmental damage with a Consequence Level of Moderate C+ or above (as defined under Woodside's Risk Table; refer to **Section 2.6**)
- an incident that has the potential to cause environmental damage with a Consequence Level of Moderate C+ or above (as defined under Woodside's Risk Table; refer to **Section 2.6**).

The environmental risk assessment (**Section 6**) for the Petroleum Activities Program identifies those risks with a potential consequence level of C+ for environment. The incidents that have the potential to cause this level of impact include hydrocarbon loss of containment events to ocean resulting from either:

- subsea loss of well containment (MEE-01)
- subsea flowline and riser loss of containment (MEE-02)
- topsides loss of containment (MEE-03)
- loss of containment during offloading (MEE-04)
- cargo tank loss of containment (MEE-05)
- loss of structural integrity (MEE-06)
- loss of marine separation (MEE-07)
- loss of control of suspended load (MEE-08).

Any such incidents represent potential events which would be reportable incidents. Reporting of incidents is undertaken with consideration of NOPSEMA (2023) guidance stating, 'if in doubt, notify NOPSEMA', and assessed on a case-by-case basis to determine if they trigger a reportable incident as defined in this EP and by the regulations.

7.9.6.1 Notification

NOPSEMA will be notified of all reportable incidents, according to the requirements of regulations 47, 48 and 49 of the Environment Regulations. Woodside will:

- orally notify NOPSEMA of all reportable incidents to the regulator as soon as practicable, but within two hours of the incident or of its detection by Woodside
- provide a written record of the reported incident to NOPSEMA, the National Offshore Petroleum Titles Administrator (NOPTA) and the Department of the responsible State Minister (Department

of Energy Mines, Industry Regulation and Safety [DEMIRS]) as soon as practicable after the oral notification of the incident

- complete a written report for all reportable incidents using a format consistent with the NOPSEMA Form FM0929 – Reportable Environment Incident which must be submitted to NOPSEMA as soon as practicable, but within three days of the incident or of its detection by Woodside
- provide a copy of the written report to NOPTA and DEMIRS, within seven days of the written report being provided to NOPSEMA.

7.9.7 Recordable Incidents

A recordable incident is defined under regulation 5 of the Environment Regulations as a ‘breach of an EPO or EPS, in the EP that applies to the activity, that is not a reportable incident’.

Any breach of the EPOs or EPSs (as presented within **Section 6**) will be raised as a recordable incident and managed as per the notification and reporting requirements outlined below and internal requirements outlined in **Section 7.9**.

7.9.7.1 Notification

NOPSEMA will be notified of all recordable incidents, according to the requirements of regulation 50. Woodside will:

- provide a written record not later than 15 days after the end of the calendar month using a format consistent with the NOPSEMA Form – Recordable Environmental Incident Monthly Summary Report.

7.9.8 Other External Reporting Requirements and Notifications

In addition to the notification and reporting of environmental incidents defined under the Environment Regulations and Woodside requirements, the following incident reporting requirements also apply in the Operational Area if the spill originates from a vessel:

Any oil pollution incidents in Commonwealth Waters will be reported (by the vessel master) to AMSA RCC as per Article 8 and Protocol I of MARPOL within two hours via the national emergency 24-hour notification contacts, and a written report within 24-hours of the request by AMSA. (This requirement is included in the NY Oil Pollution First Strike Plan).

If the ship is at sea, reports are to be made to:

Free call: 1800 641 792

Phone: 08 9430 2100 (Fremantle).

Any spills greater than ten tonnes in Commonwealth Waters must be reported (by the vessel master) to AMSA within one hour. (This requirement is detailed in the NY Oil Pollution First Strike Plan). Reports are to be made via the national 24-hour emergency notification contacts (AusSAR: RCC):

Rescue Coordination Centre Australia (RCC Australia)

Phone: 02 6230 6811

Facsimile: 02 6230 6868

Telex: 62349

Free call: 1800 641 792

AFTN: YSARYCYX.

A hydrocarbon spill incident with potential to significantly impact MNES must be reported to DCCEEW.

If the activity described within this EP results in the unintentional death of or injury to a fauna that constitute MNES (i.e. species listed as Threatened or Migratory under the EPBC Act), and the activity was not authorised by a permit, the Secretary of the DCCEEW should be notified within seven days of becoming aware of the results of the activity:

The Secretary

DCCEEW

Hotline: 1800 803 772

Email: protected.species@environment.gov.au.

For hydrocarbon spill incidents, other agencies and organisations will be notified as appropriate to the nature and scale of the incident as per procedures and contact lists in the Oil Pollution Emergency Arrangements (Australia) and the NY Oil Pollution First Strike Plan, including:

- a hydrocarbon spill incident with the potential to significantly impact MNES must be reported to DCCEEW.

7.10 Ongoing Consultation

In accordance with regulation 22(15) of the Environment Regulations, the implementation strategy must provide for appropriate consultation with relevant authorities of the Commonwealth, a State or Territory and other relevant interested persons or organisations.

Woodside proposes to undertake the engagements with directly impacted relevant persons and additional persons listed **Table 7-5**. Any relevant new information identified during ongoing consultation will be assessed using the EP Management of Knowledge (refer to **Section 7.7.2**) and Management of Change Process (refer to **Section 7.1.14**).

Woodside hosts community forums at which members are provided updates on Woodside activities on a regular basis (for example community reference group meetings). Representatives are from community and industry and include, Woodside, State Government (for instance relevant Regional Development Commissions), Local Government, Indigenous Groups, Industry representative bodies, Community and industry organisations.

Woodside has developed a Program of Ongoing Engagement with Traditional Custodians, directly informed by feedback from Traditional Custodians. It provides a mechanism for ongoing dialogue so that Traditional Custodians can, on an ongoing basis, provide Woodside with feedback on its activities.

Relevant persons, additional persons and those who are interested in the activities, can remain up to date on this activity through subscribing to our website.

Table 7-5: Ongoing consultation engagements

Report/Information	Recipient	Purpose	Frequency	Content
Program of Ongoing Engagement with Traditional Custodians	Relevant cultural authorities	Identification, assessment and consideration of cultural values relevant to the Operational Area or EMBA	Ongoing	Assessment of cultural values Any relevant new information on cultural values will be assessed using the EP Management of Knowledge (refer to Section 7.7.2) and Management of Change Process (refer to Section 7.1.14)

Report/Information	Recipient	Purpose	Frequency	Content
Notification (email)	AHO	Notify of location of new permanent infrastructure to enable update of maritime charts.	As required.	PS 1.2 (Section 6.6.1)
Notification (email)	AFMA Individual fishery licence holders that have the potential to be directly impacted by planned activities in the Operational Area Recfishwest WAFIC CFA DPIRD DAFF – Fisheries	Notification of significant change	As appropriate	Notification of significant change Any relevant new information will be assessed using the EP Management of Knowledge (refer to Section 7.7.2) and Management of Change Process (refer to Section 7.1.14).
Notification (email)	Eni	Notification of significant change	As appropriate	Notification of significant change Any relevant new information will be assessed using the EP Management of Knowledge (refer to Section 7.7.2) and Management of Change Process (refer to Section 7.1.14).
Notification (email)	All Relevant Persons and Additional Persons for the Proposed Activity	Notification of significant change	As appropriate	Notification of significant change Any relevant new information will be assessed using the EP Management of Knowledge (refer to Section 7.7.2) and Management of Change Process (refer to Section 7.1.14).
Emails/Meetings	Persons or organisations who provide feedback to Woodside post EP submission	Identification, assessment and consideration of feedback, claims and/or objections	As appropriate	Assessment of claims and/or objections Relevant new information will be assessed using the EP Management of Knowledge (refer to Section 7.7.2) and Management of Change Process (refer to Section 7.1.14).

Report/Information	Recipient	Purpose	Frequency	Content
Notification (email)	WA Museum (as requested during EP consultation) Australasian Underwater Cultural Heritage Database Any other stakeholders as required in the Unexpected Finds Procedure (Section 7.5)	Report any unexpected finds of potential Underwater Cultural Heritage	If triggered by Unexpected Finds Procedure (Section 7.5)	Refer to Unexpected Finds Procedure (Section 7.5)

At the time of EP submission, a number of specific activities as part of ongoing consultation regarding the activity are planned with Traditional Custodian Relevant Persons.

If any of these activities result in cultural values or heritage features being newly identified, EPO 28 will be implemented to ensure potential impacts are reduced to Acceptable and ALARP Levels.

7.11 Emergency Preparedness and Response

7.11.1 Overview

Under regulation 22(8), the implementation strategy must contain an OPEP and provide for the updating of the OPEP. Regulation 22(9) outlines the requirements for the OPEP which must include adequate arrangements for responding to and monitoring of oil pollution.

A summary of how this EP and supporting documents address the various requirements of Environment Regulations relating to oil pollution response arrangements is shown in **Table 7-6**.

Table 7-6: Oil pollution preparedness and response overview

Content	Environment Regulations Reference	Document/Section Reference
Details (oil pollution response) control measures that will be used to reduce the impacts and risks of the activity to ALARP and an acceptable level	Regulation 21(5), 22(2)	Oil Spill Preparedness and Response Mitigation Assessment.
Describes the OPEP	Regulation 22 (8)	EP: Section 7.10. Woodside's OPEP has the following components: <ul style="list-style-type: none"> • Oil Pollution Emergency Arrangements (Australia) • NY Oil Pollution First Strike Plan • Oil Spill Preparedness and Response Mitigation Assessment. In accordance with Regulation 56 of the Environment Regulations the Woodside Oil Pollution Emergency Arrangements (Australia) was provided with the Scarborough Drilling and Completions EP, accepted by NOPSEMA on 1 December 2023.
Details the arrangements for responding to and monitoring oil pollution (to inform response activities), including control measures	Regulation 22(9)	Oil Spill Preparedness and Response Mitigation Assessment. NY Oil Pollution First Strike Plan.
Details the arrangements for updating and testing the oil pollution response arrangements	Regulation 22 (8), (12), (13), (14)	EP: Section 7.11.9. Oil Spill Preparedness and Response Mitigation Assessment.
Details provisions for monitoring impacts to the environment from oil pollution and response activities	Regulation 22(10)	Oil Spill Preparedness and Response Mitigation Assessment.
Demonstrates that the oil pollution response arrangements are consistent with the national system for oil pollution preparedness and control	Regulation 22(11)	Oil Pollution Emergency Arrangements (Australia) .

7.11.2 Emergency Response Training

Regulation 22(4) requires that the implementation strategy includes measures to ensure that employees and contractors have the appropriate competencies and training. Woodside has conducted a risk-based training needs analysis on positions required for effective oil spill response (**Table 7-7**).

Table 7-7: Emergency response training requirements

IMT Position	Minimum Competency
Corporate Incident Management Team (CIMT) Incident Commander and deputy Incident Commander	<ul style="list-style-type: none"> • IMT Fundamentals Course (internal course) or equivalent • ICS 100/200 • IMO3 or equivalent spill response specialist level with an oil spill response organisation (OSRO) • Participation in L2 activation, exercise or skills maintenance
Operations, Planning, Logistics and Finance Sections, and other rostered members of the CIMT	<ul style="list-style-type: none"> • IMT Fundamentals Course or equivalent • ICS 100/200 • Oil spill theory • Participation in L2 activation, exercise or skills maintenance

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Environment Unit Leader	<ul style="list-style-type: none"> • IMT Fundamentals Course • ICS 100/200 • IMO2 or equivalent spill response specialist level with an OSRO • Participation in L2 activation, exercise or skills maintenance
Note on Competency/Equivalency	
<p>In 2023 Woodside undertook a review of incident and crisis systems, processes and tools to assess whether these were fit-for purpose and has rolled out a change to the Crisis and Emergency Management training and the oil spill response training requirements for CIMT roles.</p> <p>The revised IMT Fundamentals training Program aligns with the performance requirements of the <i>PMAOM0R418 - Coordinate Incident Response</i>.</p> <p>In 2023, Woodside took the decision to align its global incident command arrangements to the Incident Command System (ICS). As such all rostered members of the Incident Management Team are trained up to ICS 200.</p> <p>In addition to baseline incident management training, all rostered members of the CIMT undertake a level of hydrocarbon spill response training. Depending upon the role, this may take the form of IMO training or completion of Woodside's internal oil spill training course (OSREC) which involves the completion of two online AMSA Modules (Introduction to National Plan and Incident Management; and Introduction to Oil Spills) and face-to-face training.</p> <p>Woodside Learning Services (WLS) are responsible for collating and maintaining personnel training records. The HSP Dashboard reflects the competencies required for each oil spill role (IMT/operational).</p>	

7.11.3 Emergency Response Preparation

The CIMT based in Woodside’s head office in Perth, is the onshore coordination point for an offshore emergency. The CIMT is staffed by an appropriately skilled team available on call 24 hours a day. The purpose of the team is to coordinate incidents, maintain the safety of personnel, minimise damage to the environment and facilities, and to liaise with external agencies. A description of Woodside’s Incident Command Structure and arrangements is further detailed in the Woodside Oil Pollution Emergency Arrangements (OPEA)(Australia). Roles and responsibilities for facility emergency response are outlined in the NY Safety Case are consistent with the NY ERP.

Woodside has a number of ERP in place, which detail the actions and resources available in the event of various emergency scenarios. Electronic copies of the ERPs are available on the facility Virtual Bookshelves and the intranet. Hard controlled copies are available on the facilities.

In addition, the Emergency Preparedness MSPS (M06) is in place to assure that in the event of an incident, the organisation is appropriately prepared for all necessary actions which may be required for the protection of People, Environment, Asset, Reputation and Livelihood.

7.11.4 Initial Response to Facility Incident

The facility is equipped with emergency shutdown systems designed to protect personnel, the facility and the environment from unsafe operating conditions and catastrophic situations.

Emergency shutdown systems are provided as a means of isolation in response to process upsets and facility conditions (including associated flowlines and risers) that could result in loss of hydrocarbon inventories, or to reduce the potential impact from a hydrocarbon loss of containment event on the facility. Provision has been made for process and facility alarm systems to provide early indication of any process upset conditions and potential hazardous events, including fire and gas alarms.

The key ERP relevant to the facility and subsea infrastructure is the NY ERP. This plan covers health, safety, asset and environmental risks (including fire, structural integrity, sabotage, etc) to ensure the range of occupational, asset and environmental risk exposures from incidents have been considered and plans are in place for their management. The plan provides specific details on the initial response required during events with potential significant environmental consequences such as a hydrocarbon spill, subsea hydrocarbon leak or potential collision.

The NY Oil Pollution First Strike Plan provides immediate actions required to commence a response. Vessels have SOPEPs in accordance with the requirements of MARPOL 73/78 Annex I. These plans outline responsibilities, specify procedures and identify resources available in the event of a hydrocarbon or chemical spill from vessel activities. The NY Oil Pollution First Strike Plan is intended to work in conjunction with the SOPEPs, if hydrocarbons are released to the marine environment from a vessel.

Woodside has established EPOs, EPSs and MCs to be used for hydrocarbon spill response during the Petroleum Activities Program.

7.11.5 Oil and Other Hazardous Materials Spill

A significant hydrocarbon spill during the Petroleum Activities Program is unlikely, but should such an event occur, it has the potential to cause serious environmental and reputational damage if not managed properly. The Woodside OPEA (Australia) document, supported by the NY Oil Pollution First Strike Plan which provides tactical response guidance to the activity/area and Error! Reference source not found. of this EP, cover spill response for this Petroleum Activities Program.

The Security and Emergency Management Function is responsible for the management of Woodside's hydrocarbon spill response equipment and for the maintenance of hydrocarbon spill preparedness and response documentation. In the event of a major spill, Woodside will request that AMSA (administrator of the National Plan) provides support to Woodside through advice and access to equipment, people and liaison. The interface and responsibilities, as defined under the National Plan, are described in the OPEA (Australia). AMSA and Woodside have a MoU in place to support Woodside in the event of a hydrocarbon spill.

7.11.6 Emergency and Spill Response

Woodside categorises incidents in relation to response requirements as follows:

- **Level 1 Incident** – A Level 1 incident can be resolved through the use of existing resources, equipment and personnel. A Level 1 incident is contained, controlled and resolved by site/regionally based teams using existing resources and functional support services.
- **Level 2 Incident** – A Level 2 incident is characterised by a response that requires external operational support to manage the incident. It is triggered in the event the capabilities of the tactical level response are exceeded. This support is provided to the activity via the activation of all, or part of, the responsible CIMT.
- **Level 3 Incident** – A Level 3 incident or crisis is identified as a critical event that seriously threatens the organisation's People, the Environment, company Assets, Reputation, or Livelihood. At Woodside, the Crisis Management Team (CMT) manages the strategic impacts to respond to and recover from the threat to the company (material impacts, litigation, legal and commercial, reputation, etc). The CIMT may also be activated as required to manage the operational incident response requirements.

7.11.7 Emergency and Spill Response Drills and Exercises

Testing of Woodside's capability to respond to incidents will be conducted in alignment with the Emergency and Crisis Management Procedure. The scope, frequency and objective of these tests is described in **Table 7-8**. Woodside's emergency response testing regime is aligned to existing or developing risks associated with Woodside's operations and activities. Corporate hazards/risks outlined in the corporate risk register, respective Safety Cases or project Risk Registers, are the reference point for emergency management and crisis management exercise schedule development. External participants may be invited to attend exercises, such as government agencies, specialist service providers, oil spill response organisations or industry members with which we have mutual aid arrangements.

The overall objective of exercising is to test procedures, skills and teamwork of the Emergency Response and Command Teams in their ability to respond to major incidents. After each exercise, the team holds a debrief session, during which the exercise is reviewed. Any lessons learnt or areas for improvement are identified and incorporated into revised procedures where appropriate.

Table 7-8: Testing of response capability

Response Category	Scope	Response Testing Frequency	Response Testing Objective
Level 1 Response	Drills are asset specific	Two comprehensive Level 1 'First Strike' drills conducted per year, per asset. Additional Level 1 emergency drills routinely conducted (approximately one per fortnight).	<ul style="list-style-type: none"> Comprehensive drill test elements of the NY Oil Pollution First Strike Plan for a Level 1 incident. Emergency drills are scheduled by each asset to test other aspects of their ERP.
Level 2 Response	Exercises are relevant to all Woodside assets	A minimum of one Emergency Management exercise is conducted biennially.	<ul style="list-style-type: none"> Testing both the facility IMT response and/or that of the CIMT following handover of incident control.
Level 3 Response		The number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the VP of Security and Emergency Management.	<ul style="list-style-type: none"> Test the ability of the company to respond to and manage a crisis level incident.

7.11.8 Hydrocarbon Spill Response testing of Arrangements

There are a number of arrangements which, in the event of a spill, will underpin Woodside's ability to implement a response across its petroleum activities. In order to ensure these arrangements are adequately tested, the Capability Development Team within Security and Emergency Management ensures tests are conducted in alignment with the Hydrocarbon Spill Testing of Arrangements Schedule.

Woodside's arrangements for spill response are common across Australian operating assets and activities to ensure controls are consistent. The overall objective of testing these arrangements is to ensure Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:

- ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities
- test response arrangements and actions to validate response plans
- ensure lessons learned are incorporated into Woodside processes and procedures and improvements made where required.

If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly.

In addition to the testing of response capability described in **Table 7-8**, up to eight formal exercises are planned annually, pan-Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

7.11.9 Testing of Arrangements Schedule

Woodside's Testing of Arrangements Schedule (**Figure 7-8**) aligns with international good practice for spill preparedness and response management; the testing is compatible with the International Petroleum Industry Environmental Conservation Association (IPIECA, 2004) Good Practice Guide and the Australian Emergency Management Institute Handbook. If a spill occurs, enacting these

arrangements will underpin Woodside's ability to implement a response across its petroleum activities.

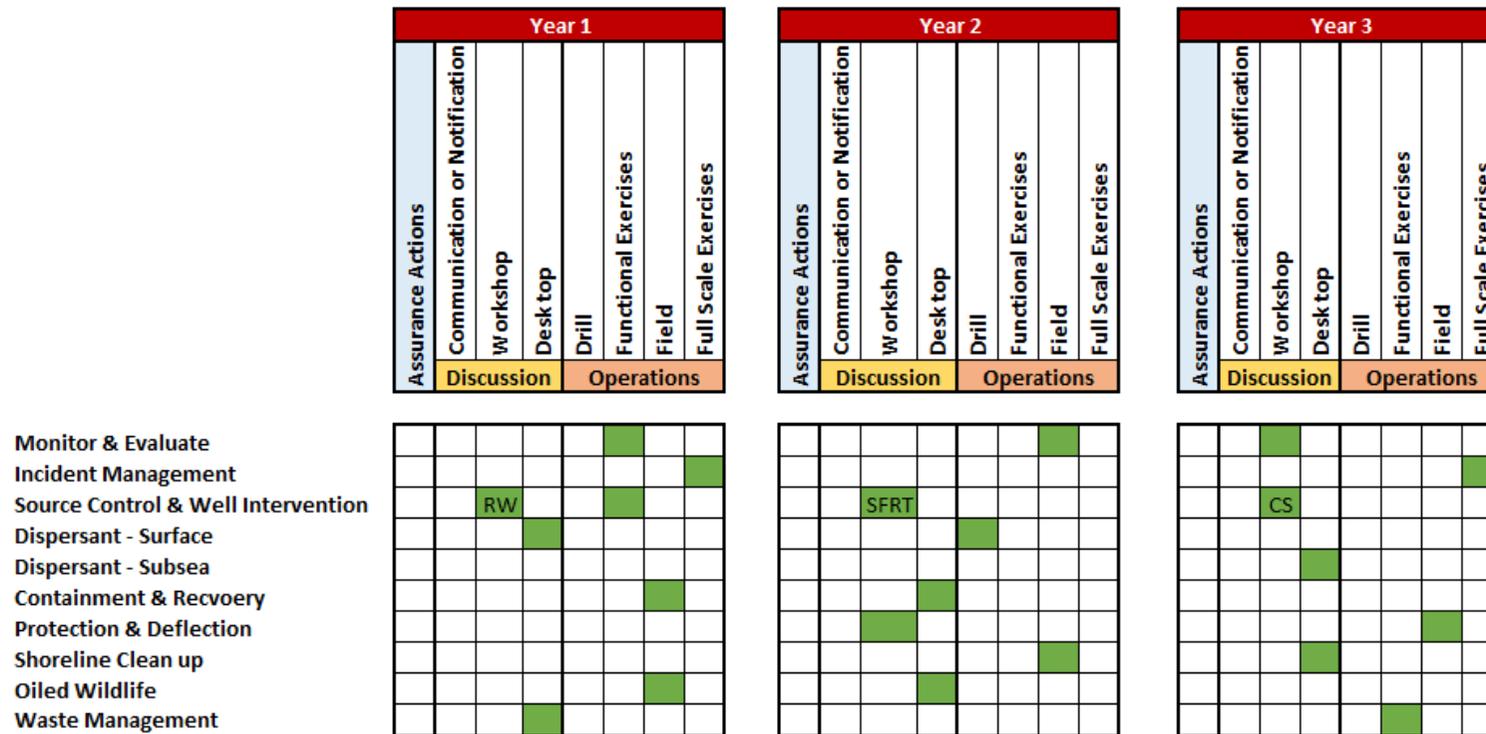


Figure 7-8: Indicative three-yearly testing of arrangement schedule

The hydrocarbon spill arrangements shown in the rows of the schedule are tested against Woodside's regulatory commitments. Each arrangement has a support agency/company and an area to be tested (e.g. capability, equipment and personnel). For example, an arrangement could be to test Woodside's personnel capability for conducting scientific monitoring, or the ability of the Australian Marine Oil Spill Centre to provide response personnel and equipment.

The vertical columns relate to how hydrocarbon spill arrangements will be tested over the three-year rolling schedule. The sub-heading for the column describes the standard method of testing (e.g. discussion exercise, desktop exercise), and the green filled cells indicate the arrangements that could be tested for each method.

Some arrangements in the schedule are tested across multiple exercises (e.g. critical arrangements) or via other 'additional assurance' methods outside of the formal Testing of Arrangements Schedule that also constitute sufficient evidence of testing of arrangements (e.g. audits, no-notice drills, internal exercises, assurance drills).

7.11.10 Cyclone and Dangerous Weather Preparation

Tropical cyclones and other severe weather events are a potential risk to the safety and health of personnel and can potentially cause spills of hazardous materials into the environment from infrastructure and/or damaged vessels.

Subsea support vessels receive regular forecasts from the Bureau of Meteorology (BoM). If a cyclone (or severe weather event) is forecast, the path and its development will be plotted and monitored using the BoM data. If there is the potential for the cyclone (severe weather event) to affect the Petroleum Activities Program, the asset Cyclone Contingency Plan and the vessel's Cyclone Contingency Plan will be actioned. If required, vessels can transit from the proposed track of the cyclone (severe weather event).

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9 LIST OF TERMS AND ACRONYMS

Acronym	Description
@	at
~	approximately
<	less/fewer than
>	greater/more than
≤	less than or equal to
≥	greater than or equal to
°C	degrees Celsius
2TL	second trunkline
3D	three-dimensional
ABF	Australian Border Force
ABN	Australian business number
ACN	Australian company number
AFMA	Australian Fisheries Management Agency
AHO	Australian Hydrographic Office
AIMS	Australian Institute of Marine Science
ALARP	as low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
APPEA	Australian Petroleum Production and Exploration Association
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ART	acoustic resonance testing
AS/NZS	Australian Standard/New Zealand Standard
BESS	battery energy storage system
BDV	blow-down valve
BIA	biologically important area
BoM	Bureau of Meteorology
BTAC	Buurabalayji Thalanyji Aboriginal Corporation
Ca	Calcium
CAES	catch and effort system
CALM	Department of Conservation and Land Management
CCE	common cause event
CCR	central control room
CDU	control distribution unit
CEB	chemically enhanced backflush
CFA	Commonwealth Fisheries Association
CI	continuous improvement

Acronym	Description
CICC	Corporate Incident Communication Centre
CIM	Cimatti Fields
CIP	clean-in-place
CITV	chemical injection throttle valve
cm	centimetre
cm ³	cubic centimetre
CMMS	computerised maintenance management system
CMT	Crisis Management Team
CO	carbon monoxide
CO ₂	carbon dioxide
CoP	cessation of production
cP	centipoise
CP	cathodic protection
CS	cost sacrifice
CV	company value
CVI	close visual inspection
CVS	Contractor Verification Service
CWF	customised water flood
DAA	Department of Aboriginal Affairs
DAFF	Department of Agriculture, Fisheries and Forestry
DAWE	Department of Agriculture, Water and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
dB re 1 µPa	decibels relative to one micropascal; the unit used to measure the intensity of an underwater sound
D&C	drilling and completions
DCA	Drill Centre A
DCB	Drill Centre B
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEHWA	Department of the Environment, Water, Heritage and the Arts
DISER	Department of Industry, Science, Energy and Resources
DEMIRS	Western Australian Department of Energy, Mines, Industry Regulation and Safety
DNP	Director of National Parks
DoD	Department of Defence
DoEE	Commonwealth Department of the Environment and Energy
DoT	Western Australian Department of Transport
DP	dynamic positioning
DPIRD	Western Australian Department of Primary Industry and Regional Development
DWT	dead weight tonnage
eCAR	Environmental Commitments and Actions Register
EET	emission estimation techniques

Acronym	Description
EFL	electrical flying lead
EIO	East Indian Ocean
EMBA	environment that may be affected
ENVID	environment identification (study)
EoFL	end of field life
EP	Environment Plan
EPBC Act	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>
EPO	environmental performance objective
EPS	environment performance standard
ERP	Emergency Response Plan
ESD	emergency shutdown
ESDV	emergency shutdown valve
ETA	exploration wells temporarily abandoned
FFS	fitness for services
FPSO	floating production, storage and offloading facility
g	gram
GE	Greater Enfield system (for the LAV, NOL and CIM reservoirs)
GHG	greenhouse gas
GP	good practice
GVI	general visual inspection
GWA	Goodwyn Alpha
HAZID	hazard identification (study)
HFL	hydraulic flying lead
HP	high pressure
HQ	hazard quotient
HSE	health, safety and environment
HSEC	health, safety and environment coordinator
HVAC	heating, ventilation and air conditioning
Hz	hertz
ICLDP	Incident and Crisis Leadership Development Program
ICOMOS	International Council on Monuments and Sites
ILUA	Indigenous Land Use Agreement
IMCRA	Integrated Marine and Coastal Regionalization of Australia
IMMR	inspection, maintenance, monitoring and repair
IMO	International Maritime Organisation
IMS	invasive marine species
IMSMP	Invasive Marine Species Management Plan
IPIECA	International Petroleum Industry Environmental Conservation Association
ISO	International Organization for Standardization

Acronym	Description
ISSoW	integrated safe system of work
IUCN	International Union for Conservation of Nature
JRCC	Joint Rescue Coordination Centre
KEF	key ecological feature
KBSF	King Bay Supply Facility
kg	kilogram
KGP	Karratha Gas Plant
kHz	kilohertz
km	kilometre
kn	knot
KO	knock out (drum)
kPa	measurement for air pressure
KPI	key performance indicator
kW	kilowatt
L	litre
LACHS	Local Aboriginal Cultural Heritage Service
LAV	Laverda Canyon Reservoir
LC	Laverda Canyon
LCS	legislation, codes and standards
LNG	liquefied natural gas
LOA	length overall
LOT	leak-off testing
LOWC	loss of well containment
LP	low pressure
LTO	licence to operate
LTP	long-term plan
m	metre
m/s	metres per second
m ²	square metre
m ³	cubic metre
MAE	major accident event
MARPOL	the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978
MBES	multibeam sonar
MC	measurement criteria
MCS	master control station
MEE	major environmental event
MEG	monoethylene glycol
METL	maintenance engineering team leader
MFO	marine fauna observer

Acronym	Description
mg	milligram
Mg	magnesium
ml	millilitre
Mm	millimetre
MMscfd	million standard cubic feet per day
MNES	matters of national environmental significance
MoC	management of change
MOPO	Manual of Permitted Operation
MoU	Memorandum of Understanding
MPA	Marine Protected Area
MPFM	multi-phase flow meter
MPP	multi-phase pumping
MSPS	Management System Performance Standards
MW	megawatt
n.d.	no date
N/A	not applicable
N ₂ O	nitrous oxide
NAC	Ngarluma Aboriginal Corporation
NAVAIDS	navigation aids
NDT	non-destructive testing
NGERS	National Greenhouse and Energy Reporting Scheme
NIMS	non-indigenous marine species
nm	nautical mile
NOEC	no observable effect concentration
NOL	Norton over Laverda
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NORM	naturally occurring radioactive material
NO _x	oxides of nitrogen
NPI	National Pollutant Inventory
NRC	North Rankin Complex
NTA	<i>Native Title Act 1993</i>
NTGAC	Nganhurra Thanardi Garrbu Aboriginal Corporation
NWMR	North-west Marine Region
NWS	North West Shelf
OCIMF	Oil Companies International Marine Forum
OCNS	Offshore Chemical Notification Scheme
OIM	offshore installation manager
OIW	oil in water

Acronym	Description
OPEA	Oil Pollution Emergency Arrangements (Australia)
OPEP	Oil Pollution Emergency Plan
OPGGGS Act	<i>Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
OSPAR	Oslo–Paris Convention for the Protection of the Marine Environment of the North East Atlantic
OSREC	Oil Spill Response Skills Enhancement Course
OSRO	Oil Spill Response Organization
PAH	polycyclic aromatic hydrocarbon
PBC	Prescribed Body Corporate
PCM	process control module
PCV	pressure control valves
pH	measure of acidity or basicity of a solution
PJ	professional judgement
PLONOR	pose little or no risk to the environment
PMS	power management system
PMST	Protected Matters Search Tool
PoB	personnel onboard
PPA	Pearl Producers Association
ppb	parts per billion
ppm	parts per million
PSE	rupture discs
PSM	process safety management
PSRA	process safety risk assessment
PSV	pressure safety valves
PSZ	petroleum safety zone
PTS	permanent threshold shift
PW	produced water
RATSIB	Representative Aboriginal/Torres Strait Islander Bodies
RBA	risk-based analysis
RBI	risk-based inspection
RCC	Rescue Coordination Centre
rms	root mean square
RO	reverse osmosis
ROV	remotely operated vehicle
SBP	sub-bottom profiling
SCC	safety and environment critical component
SCE	safety and environmental critical element
SCM	subsea control module
SCC	safety and environmental critical component
SCSSV	surface controlled subsurface safety valves

Acronym	Description
SIMAP	spill impact mapping and analysis program
SEL	sound exposure level
SKM	Sinclair Knight Merz (company)
sm ³	standard cubic metres
SMPEP	Shipboard Marine Pollution Emergency Plan
SO ₂	sulphur dioxide
SOLAS	Safety of Life at Sea
SOPEP	Ship Oil Pollution Emergency Plan
SO _x	sulfur oxides
SPL	sound pressure level
SRU	sulphate removal unit
SSPL	subsea and pipelines
SSS	side scan sonar
STP	submerged turret production
SV	societal value
SVP	Senior Vice President
T	tonne
TAP	Threat Abatement Plan
TEG	triethylene glycol
TL	transmission loss
TN	total nitrogen
TP	total phosphorous
TPH	total petroleum hydrocarbons
TRH	total recoverable hydrocarbon
TSM	Technical Systems Manual
TTS	temporary threshold shift
UF	ultrafiltration
UK	United Kingdom
UNDS	United States Uniform National Discharge Standards
UPS	uninterrupted power supply; battery power system
USV	unscrewed surface vessel
UTA	umbilical termination assembly
VIN	Vincent reservoir
VOC	volatile organic compound
VP	Vice President
WA	Western Australia
WAC	Wirrawandi Aboriginal Corporation
WAF	water accommodated fraction
WAFIC	Western Australian Fishing Industry Council

Acronym	Description
WALGA	Western Australia Local Government Association
WGS84	Word Geodesic System 1984
WIP	water injection pump
WLS	Woodside Learning Services
WMS	Woodside Management System
Woodside	Woodside Energy Limited
WOMP	Well Operations Management Plan
XT	x-mas tree
YAC	Yinggarda Aboriginal Corporation
YMAC	Yamatji Marlpa Aboriginal Corporation
EMBA	environment that may be affected

APPENDIX A WOODSIDE ENVIRONMENT AND BIODIVERSITY POLICY

WOODSIDE POLICY



Environment and Biodiversity Policy

OBJECTIVE

Woodside recognises the intrinsic value of nature and the importance of conserving biodiversity and ecosystem services to support the sustainable development of our society. We are committed to doing our part. We understand and embrace our responsibility to undertake activities in an environmentally sustainable way.

PRINCIPLES

Woodside commits to:

- Implementing a systematic approach to the management of the impacts and risks of our operating activities on an ongoing basis, including emissions and air quality, discharge and waste management, water management, biodiversity and protected areas.
- Applying the mitigation hierarchy principle (avoid, minimise, restore) and a continuous improvement approach to ensure we maintain compliance, improve resource use efficiency and reduce our environmental impacts.
- Embedding environmental and biodiversity management, and opportunities, in our business planning and decision making processes.
- Complying with relevant laws and regulations and applying responsible standards where laws do not exist.
- Not undertaking new exploration or development of hydrocarbons within the boundaries of natural sites on the UNESCO World Heritage List (as specified at 1 December 2022). Existing activity may continue if compatible with maintenance of the listed outstanding universal values.
- Not undertaking new exploration or development of hydrocarbons within IUCN Protected Areas (as specified at 1 December 2022) unless compatible with management plans in place for the area. Existing activity may continue if compatible with management plans in place for the area.
- Achieving net zero deforestation¹ associated with new projects that take a Final Investment Decision (FID) after 1 December 2022.
- Developing Biodiversity Action Plans for all new major projects (CAPEX >USD\$2 billion) that take a FID after 1 December 2022.
- Supporting positive biodiversity outcomes in regions and areas in which we operate.
- Setting targets and publicly reporting on our environmental and biodiversity performance.

APPLICABILITY

Responsibility for the application of this Policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this Policy in non-operated joint ventures.

This Policy will be reviewed regularly and updated as required.

Approved by the Woodside Energy Group Ltd Board in December 2022.

¹ Definition of Forest: 'trees higher than 5 metres and a canopy cover of more than 10 percent on the land to be cleared'.

APPENDIX B RELEVANT REQUIREMENTS

The below table refers to Commonwealth Legislation related to the project.

Commonwealth Legislation	Legislation Summary
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	<p>The Act seeks to “preserve and protect places, areas and objects of particular significance” to Aboriginal people. Under the Section 9 and 10 provisions of the Act, the Minister for the Environment may declare significant Aboriginal areas temporarily or permanently protected if they are considered under threat. Similar declarations regarding Aboriginal objects can be made under Section 12.</p> <p>Under Section 22 of the Act, the contravention of any of these declarations is an offence. Additionally, the discovery of any Aboriginal remains must be reported to the Minister under Section 20.</p> <p>Damage or interference with Aboriginal objects or places is not an offence under the ATSIHP Act except within Victoria under Section 21U.</p>
<p><i>Air Navigation Act 1920</i> <i>Air Navigation Regulations 1947</i> <i>Air Navigation (Aerodrome Flight Corridors) Regulations 1994</i> <i>Air Navigation (Aircraft Engine Emissions) Regulations 1995</i> <i>Air Navigation (Aircraft Noise) Regulations 1984</i> <i>Air Navigation (Fuel Spillage) Regulations 1999</i></p>	<p>This Act relates to the management of air navigation.</p>
<i>Australian Maritime Safety Authority Act 1990</i>	<p>This Act establishes a legal framework for the Australian Maritime Safety Authority (AMSA), which represents the Australian Government and international forums in the development, implementation and enforcement of international standards including those governing ship safety and marine environment protection. AMSA is responsible for administering the Marine Orders in Commonwealth waters.</p>
<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	<p>This Act relates to the protection of the health and safety of people, and the protection of the environment from the harmful effects of radiation.</p>
<p><i>Biosecurity Act 2015</i> <i>Quarantine Regulations 2000</i> <i>Biosecurity Regulation 2016</i> <i>Australian Ballast Water Management Requirements 2017</i></p>	<p>This Act provides the Commonwealth with powers to take measures of quarantine, and implement related programs as are necessary, to prevent the introduction of any plant, animal, organism or matter that could contain anything that could threaten Australia’s native flora and fauna or natural environment. The Commonwealth’s powers include powers of entry, seizure, detention and disposal.</p> <p>This Act includes mandatory controls on the use of seawater as ballast in ships and the declaration of sea vessels voyaging out of and into Commonwealth waters. The Regulations stipulate that all information regarding the voyage of the vessel and the ballast water is declared correctly to the quarantine officers.</p>
<p><i>Environment Protection and Biodiversity Conservation Act 1999</i> <i>Environment Protection and Biodiversity Conservation Regulations 2000</i></p>	<p>This Act protects matters of national environmental significance (NES). It streamlines the national environmental assessment and approvals process, protects Australian biodiversity and integrates management of important natural and culturally significant places.</p> <p>Under this Act, actions that may be likely to have a significant impact on matters of NES must be referred to the Commonwealth Environment Minister.</p>

Commonwealth Legislation	Legislation Summary
<p><i>Environment Protection (Sea Dumping) Act 1981</i> Environment Protection (Sea Dumping) Regulations 1983</p>	<p>This Act provides for the protection of the environment by regulating dumping matter into the sea, incineration of waste at sea and placement of artificial reefs.</p>
<p><i>Industrial Chemicals (Notification and Assessment Act) 1989</i> Industrial Chemicals (Notification and Assessment) Regulations 1990</p>	<p>This Act creates a national register of industrial chemicals. The Act also provides for restrictions on the use of certain chemicals which could have harmful effects on the environment or health.</p>
<p><i>National Environment Protection Measures (Implementation) Act 1998</i> National Environment Protection Measures (Implementation) Regulations 1999</p>	<p>This Act and Regulations provide for the implementation of National Environment Protection Measures (NEPMs) to protect, restore and enhance the quality of the environment in Australia and ensure that the community has access to relevant and meaningful information about pollution.</p> <p>The National Environment Protection Council has made NEPMs relating to ambient air quality, the movement of controlled waste between states and territories, the national pollutant inventory, and used packaging materials.</p>
<p><i>National Greenhouse and Energy Reporting Act 2007</i> National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</p>	<p>This Act and associated Rule establishes the legislative framework for the NGER scheme for reporting greenhouse gas emissions and energy consumption and production by corporations in Australia.</p>
<p><i>Navigation Act 2012</i> Marine Order 12: Construction – subdivision and stability, machinery and electrical installations Marine Order 30: Prevention of collisions Marine Order 47L Offshore Industry units Marine Order 57: Helicopter operations Marine Order 91: Marine pollution prevention – oil Marine Order 93: Marine pollution prevention – noxious liquid substances Marine Order 94: Marine pollution prevention – packaged harmful substances Marine Order 96: Marine pollution prevention - sewage Marine Order 97: Marine pollution prevention – air pollution</p>	<p>This Act regulates navigation and shipping including Safety of Life at Sea (SOLAS). The Act will apply to some activities of the FPSO and project vessels.</p> <p>This Act is the primary legislation that regulates ship and seafarer safety, shipboard aspects of marine environment protection and pollution prevention.</p>
<p><i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009</p>	<p>This Act is the principal Act governing offshore petroleum exploration and production in Commonwealth waters. Specific environmental, resource management and safety obligations are set out in the Regulations listed.</p>
<p><i>Ozone Protection and Synthetic Greenhouse Gas Management Act 1989</i> Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995</p>	<p>This Act provides for measures to protect ozone in the atmosphere by controlling and ultimately reducing the manufacture, import and export of ozone depleting substances (ODS) and synthetic greenhouse gases, and replacing them with suitable alternatives. The Act will only apply to Woodside if it manufactures, imports or exports ozone depleting substances.</p>
<p><i>Protection of the Sea (Powers of Intervention) Act 1981</i></p>	<p>This Act authorises the Commonwealth to take measures for the purpose of protecting the sea from pollution by oil and other noxious substances discharged from ships and provides legal immunity for persons acting under an AMSA direction.</p>

Commonwealth Legislation	Legislation Summary
<p><i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994</p> <ul style="list-style-type: none"> • Marine Order 91: Marine pollution prevention – oil • Marine Order 93: Marine pollution prevention – noxious liquid substances • Marine Order 94: Marine pollution prevention – packaged harmful substances • Marine Order 95: Marine pollution prevention – garbage • Marine Order 96L Marine pollution prevention – sewage <p><i>Maritime Legislation Amendment (Prevention of Air Pollution from Ships) Act 2007</i> MARPOL Convention</p>	<p>This Act relates to the protection of the sea from pollution by oil and other harmful substances discharged from ships. Under this Act, discharge of oil or other harmful substances from ships into the sea is an offence. There is also a requirement to keep records of the ships dealing with such substances.</p> <p>The Act applies to all Australian ships, regardless of their location. It applies to foreign ships operating between 3 nm off the coast out to the end of the Australian Exclusive Economic Zone (200 nm). It also applies within the 3 nm of the coast where the State/Northern Territory does not have complementary legislation.</p> <p>All the Marine Orders listed, except for Marine Order 95, are enacted under both the <i>Navigation Act 2012</i> and the <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>.</p> <p>This Act is an amendment to the <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>. This amended Act provides the protection of the sea from pollution by oil and other harmful substances discharged from ships.</p>
<p><i>Protection of the Sea (Harmful Antifouling Systems) Act 2006</i> Marine Order 98: Marine pollution – anti-fouling systems</p>	<p>This Act relates to the protection of the sea from the effects of harmful anti-fouling systems. It prohibits the application or reapplication of harmful anti-fouling compounds on Australian ships or foreign ships that are in an Australian shipping facility.</p>
<p><i>Underwater Cultural Heritage Act 2018</i> Underwater Cultural Heritage Guidance for Offshore Developments DRAFT Guidelines to Protect Underwater Cultural Heritage</p>	<p>This Act prescribes penalties for damage to protected underwater cultural heritage without a permit under Section 30 or in contravention of a permit in section 28. Protected Underwater cultural heritage is prescribed in section 16 to automatically include the remains and associated artefacts of any vessel or aircraft that has been in Australian waters for 75 years, whether known or unknown. This protection is also extended to underwater cultural heritage in Commonwealth waters specified by the Environment Minister under section 17. Without a declaration under this section, Aboriginal underwater cultural heritage is not protected under the UCH Act.</p>

**APPENDIX C ENVIROMENT PROTECTION AND BIODIVERSITY
CONSERVATION ACT PROTECTED MATTERS SEARCH TOOL
REPORTS**



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 25-Aug-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	26
Listed Migratory Species:	41

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	64
Whales and Other Cetaceans:	30
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	42
Key Ecological Features (Marine):	3
Biologically Important Areas:	9
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant Petrel [1060]

Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]

Endangered

Species or species habitat may occur within area

[Pterodroma mollis](#)

Soft-plumaged Petrel [1036]

Vulnerable

Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
REPTILE		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area

SHARK

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species [\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Ardena carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short- bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Micrognathus micronotus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Congregation or aggregation known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahalensis Australian Humpback Dolphin [87942]		Species or species habitat may occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Gascoyne	Multiple Use Zone (IUCN VI)	

Habitat Critical to the Survival of Marine Turtles		
Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	
Action clearly unacceptable				
Highlands 3D Marine Seismic Survey	2012/6680	Action Clearly Unacceptable	Completed	
Controlled action				

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
'Van Gogh' Petroleum Field Development	2007/3213	Controlled Action	Post-Approval
Development of Coniston/Novara fields within the Exmouth Sub-basin	2011/5995	Controlled Action	Post-Approval
Development of Stybarrow petroleum field incl drilling and facility installation	2004/1469	Controlled Action	Post-Approval
Enfield full field development	2001/257	Controlled Action	Post-Approval
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval
Vincent Appraisal Well	2000/22	Controlled Action	Post-Approval
Not controlled action			
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells	2000/103	Not Controlled Action	Completed
Carnarvon 3D Marine Seismic Survey	2004/1890	Not Controlled Action	Completed
Exploration drilling well WA-155-P(1)	2003/971	Not Controlled Action	Completed
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline	2005/2033	Not Controlled Action	Completed
Not controlled action (particular manner)			
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M4 4D Marine Seismic Survey	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular Manner)	Post-Approval
Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Macedon Gas Field Development	2008/4605	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees 4D Marine Seismic Monitor Survey, HCA12A	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees-Macedon 3D marine seismic survey	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
Rydal-1 Petroleum Exploration Well, WA	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
CVG 3D Marine Seismic Survey	2012/6270	Referral Decision	Completed
Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L	2005/2370	Referral Decision	Completed
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 125 m depth contour	North-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Continental Slope Demersal Fish Communities	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Seabirds		
Ardena pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Sharks		
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

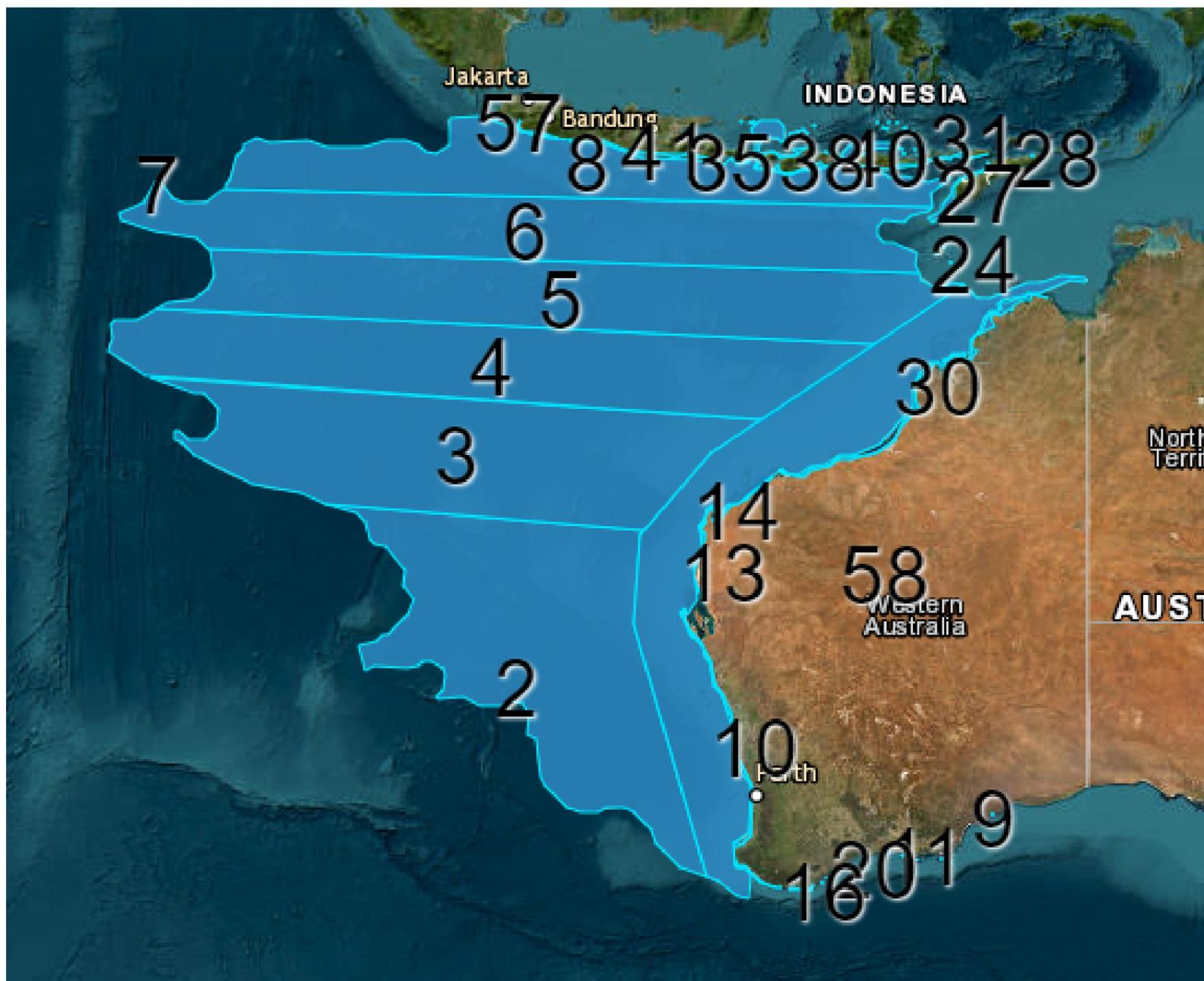
[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Figure: NY EMBA PMST



Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	2
National Heritage Places:	7
Wetlands of International Importance (Ramsar)	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	5
Listed Threatened Ecological Communities:	9
Listed Threatened Species:	160
Listed Migratory Species:	106

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	65
Commonwealth Heritage Places:	8
Listed Marine Species:	198
Whales and Other Cetaceans:	43
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	49
Habitat Critical to the Survival of Marine Turtles:	5

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	123
Regional Forest Agreements:	1
Nationally Important Wetlands:	14
EPBC Act Referrals:	438
Key Ecological Features (Marine):	18
Biologically Important Areas:	116
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

Name	State	Legal Status
Shark Bay, Western Australia	WA	Declared property
The Ningaloo Coast	WA	Declared property

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
Batavia Shipwreck Site and Survivor Camps Area 1629 - Houtman Abrolhos	WA	Listed place
Dirk Hartog Landing Site 1616 - Cape Inscription Area	WA	Listed place

Indigenous

Dampier Archipelago (including Burrup Peninsula)	WA	Listed place
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Natural

Shark Bay, Western Australia	WA	Listed place
The Ningaloo Coast	WA	Listed place
The West Kimberley	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Becher point wetlands	Within 10km of Ramsar site
Peel-yalgorup system	Within Ramsar site
Roebuck bay	Within 10km of Ramsar site

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name
Commonwealth Marine Areas (EPBC Act)

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Ecological Communities

[[Resource Information](#)]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Aquatic Root Mat Community 1 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Aquatic Root Mat Community 4 in Caves of the Leeuwin Naturaliste Ridge	Endangered	Community known to occur within area
Aquatic Root Mat Community in Caves of the Swan Coastal Plain	Endangered	Community known to occur within area
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community likely to occur within area
Empodisma peatlands of southwestern Australia	Endangered	Community may occur within area
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area
Sedgeland in Holocene dune swales of the southern Swan Coastal Plain	Endangered	Community known to occur within area
Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[[Resource Information](#)]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Geophaps smithii blaauwi Partridge Pigeon (western) [66501]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Malurus leucopterus edouardi White-winged Fairy-wren (Barrow Island), Barrow Island Black-and-white Fairy-wren [26194]	Vulnerable	Species or species habitat likely to occur within area
Malurus leucopterus leucopterus White-winged Fairy-wren (Dirk Hartog Island), Dirk Hartog Black-and-White Fairy-wren [26004]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Turnix varius scintillans Painted Button-quail (Houtman Abrolhos) [82451]	Endangered	Species or species habitat known to occur within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area
Zanda baudinii listed as Calyptorhynchus baudinii Baudin's Cockatoo, Baudin's Black-Cockatoo, Long-billed Black-cockatoo [87736]	Endangered	Breeding known to occur within area
Zanda latirostris listed as Calyptorhynchus latirostris Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area

CRUSTACEAN

Scientific Name	Threatened Category	Presence Text
Engaewa pseudoreducta Margaret River Burrowing Crayfish [82674]	Critically Endangered	Species or species habitat may occur within area
Engaewa reducta Dunsborough Burrowing Crayfish [82675]	Critically Endangered	Species or species habitat may occur within area
Kumonga exleyi Cape Range Remipede [86875]	Vulnerable	Species or species habitat known to occur within area

FISH

Hoplostethus atlanticus Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
Milyeringa veritas Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
Nannatherina balstoni Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat known to occur within area
Ophisternon candidum Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area

INSECT

Hesperocolletes douglasi Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
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MAMMAL

Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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Scientific Name	Threatened Category	Presence Text
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Bettongia lesueur Barrow and Boodie Islands subspecies Boodie, Burrowing Bettong (Barrow and Boodie Islands) [88021]	Vulnerable	Species or species habitat known to occur within area
Bettongia lesueur lesueur Burrowing Bettong (Shark Bay), Boodie [66659]	Vulnerable	Species or species habitat known to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat known to occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Translocated population known to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isoodon auratus auratus Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
Isoodon auratus barrowensis Golden Bandicoot (Barrow Island) [66666]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Lagorchestes conspicillatus conspicillatus Spectacled Hare-wallaby (Barrow Island) [66661]	Vulnerable	Species or species habitat known to occur within area
Lagorchestes hirsutus bernieri Rufous Hare-wallaby (Bernier Island) [66662]	Vulnerable	Species or species habitat known to occur within area
Lagorchestes hirsutus Central Australian subspecies Mala, Rufous Hare-Wallaby (Central Australia) [88019]	Endangered	Translocated population known to occur within area
Lagorchestes hirsutus dorrae Rufous Hare-wallaby (Dorre Island) [66663]	Vulnerable	Species or species habitat known to occur within area
Lagostrophus fasciatus fasciatus Banded Hare-wallaby, Merrnine, Marnine, Munning [66664]	Vulnerable	Species or species habitat known to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
Mesembriomys gouldii gouldii Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat may occur within area
Myrmecobius fasciatus Numbat [294]	Endangered	Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Osphranter robustus isabellinus Barrow Island Wallaroo, Barrow Island Euro [89262]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Parantechinus apicalis Dibbler [313]	Endangered	Species or species habitat known to occur within area
Perameles bougainville Shark Bay Bandicoot [278]	Endangered	Species or species habitat known to occur within area
Petrogale concinna monastria Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat known to occur within area
Petrogale lateralis lateralis Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
Phascogale tapoatafa kimberleyensis Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat known to occur within area
Pseudomys fieldi Shark Bay Mouse, Djoongari, Alice Springs Mouse [113]	Vulnerable	Species or species habitat likely to occur within area
Rhinonicteris aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat known to occur within area
Trichosurus vulpecula arnhemensis Northern Brushtail Possum [83091]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
OTHER		
Westralunio carteri Carter's Freshwater Mussel, Freshwater Mussel [86266]	Vulnerable	Species or species habitat known to occur within area
PLANT		
Andersonia gracilis Slender Andersonia [14470]	Endangered	Species or species habitat may occur within area
Androcalva bivillosa Stragglng Androcalva [87807]	Critically Endangered	Species or species habitat likely to occur within area
Anigozanthos viridis subsp. terraspectans Dwarf Green Kangaroo Paw [3435]	Vulnerable	Species or species habitat may occur within area
Banksia mimica Summer Honeypot [82765]	Endangered	Species or species habitat may occur within area
Banksia squarrosa subsp. argillacea Whicher Range Dryandra [82769]	Vulnerable	Species or species habitat may occur within area
Beyeria lepidopetala Small-petalled Beyeria, Short-petalled Beyeria [18362]	Endangered	Species or species habitat likely to occur within area
Caladenia barbarella Small Dragon Orchid, Common Dragon Orchid [68686]	Endangered	Species or species habitat may occur within area
Caladenia bryceana subsp. cracens Northern Dwarf Spider-orchid [64556]	Vulnerable	Species or species habitat known to occur within area
Caladenia caesarea subsp. maritima Cape Spider-orchid [64856]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Caladenia elegans Elegant Spider-orchid [56775]	Endangered	Species or species habitat known to occur within area
Caladenia excelsa Giant Spider-orchid [56717]	Endangered	Species or species habitat likely to occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat likely to occur within area
Caladenia huegelii King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]	Endangered	Species or species habitat likely to occur within area
Caladenia lodgeana Lodge's Spider-orchid [68664]	Critically Endangered	Species or species habitat known to occur within area
Caladenia viridescens Dunsborough Spider-orchid [56776]	Endangered	Species or species habitat known to occur within area
Caleana dixonii listed as Paracaleana dixonii Sandplain Duck Orchid [87944]	Endangered	Species or species habitat may occur within area
Calectasia cyanea Blue Tinsel Lily [7669]	Critically Endangered	Species or species habitat may occur within area
Chamelaucium lullfitzii listed as Chamelaucium sp. Gingin (N.G.Marchant 6) Gingin Wax [92777]	Endangered (listed as Chamelaucium sp. Gingin)	Species or species habitat likely to occur within area
Chorizema humile Prostrate Flame Pea [32573]	Endangered	Species or species habitat may occur within area
Chorizema varium Limestone Pea [16981]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Diuris drummondii Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area
Diuris purdiei Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
Drakaea concolor Kneeling Hammer-orchid [56777]	Vulnerable	Species or species habitat known to occur within area
Drakaea elastica Glossy-leafed Hammer Orchid, Glossy-leafed Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
Drakaea micrantha Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
Drummondita ericoides Morseby Range Drummondita [9193]	Endangered	Species or species habitat may occur within area
Eleocharis keigheryi Keighery's Eleocharis [64893]	Vulnerable	Species or species habitat may occur within area
Eucalyptus argutifolia Yanchep Mallee, Wabbling Hill Mallee [24263]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus beardiana Beard's Mallee [18933]	Vulnerable	Species or species habitat may occur within area
Eucalyptus cuprea Mallee Box [56773]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Eucalyptus x phylacis Meelup Mallee [87817]	Endangered	Species or species habitat known to occur within area
Gastrolobium papilio Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
Hemiandra gardneri Red Snakebush [7945]	Endangered	Species or species habitat likely to occur within area
Kennedia lateritia Augusta Kennedia [45985]	Endangered	Species or species habitat likely to occur within area
Lambertia echinata subsp. occidentalis Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within area
Leucopogon obtectus Hidden Beard-heath [19614]	Endangered	Species or species habitat may occur within area
Macarthuria keigheryi Keighery's Macarthuria [64930]	Endangered	Species or species habitat may occur within area
Marianthus paralius [83925]	Endangered	Species or species habitat known to occur within area
Melaleuca sp. Wanneroo (G.J. Keighery 16705) [89456]	Endangered	Species or species habitat known to occur within area
Minuria tridens Minnie Daisy [13753]	Vulnerable	Species or species habitat known to occur within area
Pterostylis sinuata Northampton Midget Greenhood, Western Swan Greenhood [84991]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Stachystemon nematophorus Three-flowered Stachystemon [81447]	Vulnerable	Species or species habitat likely to occur within area
Wurmbea calcicola Naturaliste Nancy [64691]	Endangered	Species or species habitat known to occur within area
Wurmbea tubulosa Long-flowered Nancy [12739]	Endangered	Species or species habitat may occur within area

REPTILE

Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Ctenotus lancelini Lancelin Island Skink [1482]	Vulnerable	Translocated population known to occur within area
Ctenotus zasticus Hamelin Ctenotus [25570]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Congregation or aggregation known to occur within area
Lerista neviniae Nevin's Slider [85296]	Endangered	Species or species habitat known to occur within area
Liasis olivaceus barroni Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat known to occur within area
Liopholis pulchra longicauda Jurien Bay Skink, Jurien Bay Rock-skink [83162]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
SHARK		
Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Centrophorus uyato Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Breeding likely to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

SPIDER

Idiosoma nigrum Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat known to occur within area
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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area

Migratory Marine Species

Scientific Name	Threatened Category	Presence Text
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Congregation or aggregation known to occur within area
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Breeding known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat known to occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Defence	
Defence - EXMOUTH VLF TRANSMITTER STATION [50122]	WA
Defence - EXMOUTH VLF TRANSMITTER STATION [50123]	WA
Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN ISLAND [50117]	WA
Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN ISLAND [50134]	WA
Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN ISLAND [50131]	WA
Defence - LEARMONTH - AIR WEAPONS RANGE [50193]	WA
Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH [50001]	WA
Unknown	
Commonwealth Land - [50582]	WA
Commonwealth Land - [50561]	WA
Commonwealth Land - [50585]	WA
Commonwealth Land - [50586]	WA
Commonwealth Land - [50583]	WA
Commonwealth Land - [50584]	WA

Commonwealth Land Name	State
Commonwealth Land - [50978]	WA
Commonwealth Land - [50587]	WA
Commonwealth Land - [52200]	WA
Commonwealth Land - [50975]	WA
Commonwealth Land - [50976]	WA
Commonwealth Land - [50977]	WA
Commonwealth Land - [50575]	WA
Commonwealth Land - [50574]	WA
Commonwealth Land - [50576]	WA
Commonwealth Land - [50606]	WA
Commonwealth Land - [50598]	WA
Commonwealth Land - [50593]	WA
Commonwealth Land - [50592]	WA
Commonwealth Land - [52201]	WA
Commonwealth Land - [50494]	WA
Commonwealth Land - [50440]	WA
Commonwealth Land - [50448]	WA
Commonwealth Land - [50553]	WA
Commonwealth Land - [50560]	WA
Commonwealth Land - [51978]	WA
Commonwealth Land - [50562]	WA
Commonwealth Land - [50563]	WA
Commonwealth Land - [50315]	WA
Commonwealth Land - [50316]	WA
Commonwealth Land - [50489]	WA
Commonwealth Land - [50559]	WA
Commonwealth Land - [50625]	WA

Commonwealth Land Name	State
Commonwealth Land - [50355]	WA
Commonwealth Land - [50626]	WA
Commonwealth Land - [50594]	WA
Commonwealth Land - [52199]	WA
Commonwealth Land - [50630]	WA
Commonwealth Land - [51483]	WA
Commonwealth Land - [50430]	WA
Commonwealth Land - [50410]	WA
Commonwealth Land - [50413]	WA
Commonwealth Land - [51111]	WA
Commonwealth Land - [51118]	WA
Commonwealth Land - [50588]	WA
Commonwealth Land - [50385]	WA
Commonwealth Land - [50439]	WA
Commonwealth Land - [50436]	WA
Commonwealth Land - [52214]	WA
Commonwealth Land - [51104]	WA
Commonwealth Land - [50402]	WA
Commonwealth Land - [50502]	WA
Commonwealth Land - [50508]	WA
Commonwealth Land - [52111]	WA
Commonwealth Land - [52236]	WA
Commonwealth Land - [50974]	WA
Commonwealth Land - [51480]	WA
Commonwealth Land - [51491]	WA

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	
Historic			

Name	State	Status
Cape Leeuwin Lighthouse	WA	Listed place
Cliff Point Historic Site	WA	Listed place
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place
J Gun Battery	WA	Listed place
Natural		
Garden Island	WA	Listed place
Learmonth Air Weapons Range Facility	WA	Listed place
Mermaid Reef - Rowley Shoals	WA	Listed place
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text

Scientific Name	Threatened Category	Presence Text
Bird		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat known to occur within area overfly marine area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Ardena carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardena grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area
Ardena pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris alba Sanderling [875]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris subminuta Long-toed Stint [861]		Roosting known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat known to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area
Hydroprogne caspia as Sterna caspia Caspian Tern [808]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat known to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area overfly marine area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Breeding known to occur within area
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Breeding known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding likely to occur within area
Phalaropus lobatus Red-necked Phalarope [838]		Roosting known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area overfly marine area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Puffinus assimilis Little Shearwater [59363]		Breeding known to occur within area
Puffinus huttoni Hutton's Shearwater [1025]		Foraging, feeding or related behaviour known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Breeding known to occur within area
Sternula nereis as Sterna nereis Fairy Tern [82949]		Breeding known to occur within area
Stiltia isabella Australian Pratincole [818]		Species or species habitat known to occur within area overfly marine area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Thalasseus bengalensis as Sterna bengalensis Lesser Crested Tern [66546]		Breeding known to occur within area
Thalasseus bergii as Sterna bergii Greater Crested Tern [83000]		Breeding known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa glareola Wood Sandpiper [829]		Roosting known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
Tringa totanus Common Redshank, Redshank [835]		Roosting known to occur within area overfly marine area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area
Fish		
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Breeding known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus fuscus Dusky Seasnake [1119]		Species or species habitat known to occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Chitulia inornata as Hydrophis inornatus Plain Seasnake [87379]		Species or species habitat may occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Enhydrina schistosa Beaked Seasnake [1126]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<i>Eretmochelys imbricata</i> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<i>Hydrelaps darwiniensis</i> Black-ringed Seasnake [1100]		Species or species habitat may occur within area
<i>Hydrophis atriceps</i> Black-headed Seasnake [1101]		Species or species habitat may occur within area
<i>Hydrophis elegans</i> Elegant Seasnake [1104]		Species or species habitat may occur within area
<i>Hydrophis macdowelli</i> as <i>Hydrophis mcdowelli</i> Small-headed Seasnake [75601]		Species or species habitat may occur within area
<i>Lapemis curtus</i> as <i>Lapemis hardwickii</i> Spine-bellied Seasnake [83554]		Species or species habitat may occur within area
<i>Leioselasma coggeri</i> as <i>Hydrophis coggeri</i> Black-headed Sea Snake, Slender-necked Seasnake [87373]		Species or species habitat may occur within area
<i>Leioselasma czeblukovi</i> as <i>Hydrophis czeblukovi</i> Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
<i>Leioselasma pacifica</i> as <i>Hydrophis pacificus</i> Large-headed Seasnake, Pacific Seasnake [87378]		Species or species habitat may occur within area
<i>Lepidochelys olivacea</i> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Congregation or aggregation known to occur within area
<i>Natator depressus</i> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<i>Pelamis platurus</i> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans

[Resource Information]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area

Current Scientific Name	Status	Type of Presence
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]		Breeding known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Gingko-toothed Beaked Whale, Gingko-toothed Whale, Gingko Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Breeding known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa sahalensis Australian Humpback Dolphin [87942]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Park Name	Zone & IUCN Categories
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)
Dampier	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Kimberley	Habitat Protection Zone (IUCN IV)
Kimberley	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)
Perth Canyon	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Dampier	Multiple Use Zone (IUCN VI)
Eighty Mile Beach	Multiple Use Zone (IUCN VI)
Gascoyne	Multiple Use Zone (IUCN VI)
Geographe	Multiple Use Zone (IUCN VI)
Kimberley	Multiple Use Zone (IUCN VI)
Montebello	Multiple Use Zone (IUCN VI)
Perth Canyon	Multiple Use Zone (IUCN VI)
Perth Canyon	Multiple Use Zone (IUCN VI)

Park Name	Zone & IUCN Categories
Roebuck	Multiple Use Zone (IUCN VI)
Shark Bay	Multiple Use Zone (IUCN VI)
South-west Corner	Multiple Use Zone (IUCN VI)
Two Rocks	Multiple Use Zone (IUCN VI)
Abrolhos	National Park Zone (IUCN II)
Abrolhos	National Park Zone (IUCN II)
Abrolhos	National Park Zone (IUCN II)
Dampier	National Park Zone (IUCN II)
Jurien	National Park Zone (IUCN II)
Kimberley	National Park Zone (IUCN II)
Mermaid Reef	National Park Zone (IUCN II)
Ningaloo	National Park Zone (IUCN II)
Perth Canyon	National Park Zone (IUCN II)
Perth Canyon	National Park Zone (IUCN II)
South-west Corner	National Park Zone (IUCN II)
South-west Corner	National Park Zone (IUCN II)
South-west Corner	National Park Zone (IUCN II)
Two Rocks	National Park Zone (IUCN II)
Ningaloo	Recreational Use Zone (IUCN IV)
Ningaloo	Recreational Use Zone (IUCN IV)
Abrolhos	Special Purpose Zone (IUCN VI)
Abrolhos	Special Purpose Zone (IUCN VI)
Jurien	Special Purpose Zone (IUCN VI)
Geographe	Special Purpose Zone (Mining Exclusion) (IUCN VI)

Park Name	Zone & IUCN Categories
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)
Argo-Rowley Terrace	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles

Scientific Name	Behaviour	Presence
Aug - Sep		
Natator depressus		
Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
Chelonia mydas		
Green Turtle [1765]	Nesting	Known to occur
May - Jul		
Lepidochelys olivacea		
Olive Ridley Turtle [1767]	Nesting	Known to occur
Nov-Feb		
Caretta caretta		
Loggerhead Turtle [1763]	Nesting	Known to occur
Nov - May		
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Abrolhos Islands	Fish Habitat Protection Area	WA
Adele Island	Nature Reserve	WA
Airlie Island	Nature Reserve	WA
Bardi Jawi	Indigenous Protected Area	WA
Barrow Island	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Barrow Island	Marine Management Area	WA
Barrow Island	Marine Park	WA
Beagle Islands	Nature Reserve	WA
Bedout Island	Nature Reserve	WA
Bernier And Dorre Islands	Nature Reserve	WA
Bessieres Island	Nature Reserve	WA
Boodie, Double Middle Islands	Nature Reserve	WA
Boullanger, Whitlock, Favourite, Tern And Osprey Islands	Nature Reserve	WA
Browse Island	Nature Reserve	WA
Buller, Whittell And Green Islands	Nature Reserve	WA
Bundegi Coastal Park	5(1)(h) Reserve	WA
Cape Range	National Park	WA
Cape Range (South)	National Park	WA
Carnac Island	Nature Reserve	WA
Coulomb Point	Nature Reserve	WA
D'Entrecasteaux	National Park	WA
Dambimangari	Indigenous Protected Area	WA
Dirk Hartog Island	National Park	WA
Eighty Mile Beach	Marine Park	WA
Escape Island	Nature Reserve	WA
Essex Rocks	Nature Reserve	WA
Fisherman Islands	Nature Reserve	WA
Flinders Bay	Nature Reserve	WA
Gnandaroo Island	Nature Reserve	WA
Great Sandy Island	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Hamelin Island	Nature Reserve	WA
Houtman Abrolhos Islands	National Park	WA
Jurabi Coastal Park	5(1)(h) Reserve	WA
Jurien Bay	Marine Park	WA
Kalbarri	National Park	WA
Karajarri	Indigenous Protected Area	WA
Koks Island	Nature Reserve	WA
Lacepede Islands	Nature Reserve	WA
Lalang-garram / Camden Sound	Marine Park	WA
Lalang-garram / Horizontal Falls	Marine Park	WA
Leeuwin-Naturaliste	National Park	WA
Lipfert, Milligan, Etc Islands	Nature Reserve	WA
Little Rocky Island	Nature Reserve	WA
Locker Island	Nature Reserve	WA
Lowendal Islands	Nature Reserve	WA
Low Rocks	Nature Reserve	WA
Marmion	Marine Park	WA
Miaboolya Beach	Fish Habitat Protection Area	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Marine Park	WA
Muiron Islands	Nature Reserve	WA
Muiron Islands	Marine Management Area	WA
Murujuga	National Park	WA
Murujuga	5(1)(h) Reserve	WA

Protected Area Name	Reserve Type	State
Nambung	National Park	WA
Neerabup	Nature Reserve	WA
Neerabup	National Park	WA
Ngari Capes	Marine Park	WA
Niiwalarra Islands	National Park	WA
Ningaloo	Marine Park	WA
North Kimberley	Marine Park	WA
North Lalang-garram	Marine Park	WA
North Sandy Island	Nature Reserve	WA
North Turtle Island	Nature Reserve	WA
NTWA Bushland covenant (0085A)	Conservation Covenant	WA
NTWA Bushland covenant (0085B)	Conservation Covenant	WA
NTWA Bushland covenant (0144)	Conservation Covenant	WA
Nyingguulu (Ningaloo) Coastal Reserve	5(1)(h) Reserve	WA
Outer Rocks	Nature Reserve	WA
Point Quobba	Fish Habitat Protection Area	WA
Port Gregory	NRS Addition - Gazettal in Progress	WA
Rocky Island	Nature Reserve	WA
Ronsard Rocks	Nature Reserve	WA
Rottnest Island	State Reserve	WA
Round Island	Nature Reserve	WA
Rowley Shoals	Marine Park	WA
Seal Island (WA25645)	Nature Reserve	WA
Serrurier Island	Nature Reserve	WA
Shark Bay	Marine Park	WA

Protected Area Name	Reserve Type	State
Shoalwater Islands	Marine Park	WA
St Alouarn Island	Nature Reserve	WA
Stockdill Road	Nature Reserve	WA
Sugar Loaf Rock	Nature Reserve	WA
Swan Island	Nature Reserve	WA
Tamala Pastoral Lease (Part)	NRS Addition - Gazettal in Progress	WA
Tanner Island	Nature Reserve	WA
Tent Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Unnamed WA28968	5(1)(h) Reserve	WA
Unnamed WA36907	5(1)(h) Reserve	WA
Unnamed WA36909	5(1)(h) Reserve	WA
Unnamed WA36910	5(1)(h) Reserve	WA
Unnamed WA36913	Nature Reserve	WA
Unnamed WA36915	Nature Reserve	WA
Unnamed WA37168	5(1)(h) Reserve	WA
Unnamed WA37338	5(1)(h) Reserve	WA
Unnamed WA37383	5(1)(h) Reserve	WA
Unnamed WA40322	5(1)(h) Reserve	WA
Unnamed WA40828	5(1)(h) Reserve	WA
Unnamed WA40877	5(1)(h) Reserve	WA
Unnamed WA41080	5(1)(h) Reserve	WA
Unnamed WA41775	5(1)(h) Reserve	WA
Unnamed WA44665	5(1)(h) Reserve	WA
Unnamed WA44667	5(1)(h) Reserve	WA
Unnamed WA44669	5(1)(h) Reserve	WA

Protected Area Name	Reserve Type	State
Unnamed WA44672	5(1)(h) Reserve	WA
Unnamed WA44673	5(1)(h) Reserve	WA
Unnamed WA44676	5(1)(h) Reserve	WA
Unnamed WA44682	5(1)(h) Reserve	WA
Unnamed WA44688	5(1)(h) Reserve	WA
Utcha Well	Nature Reserve	WA
Uunguu	Indigenous Protected Area	WA
Victor Island	Nature Reserve	WA
Wanagarren	Nature Reserve	WA
Wedge Island	Nature Reserve	WA
Weld Island	Nature Reserve	WA
Whalebone Island	Nature Reserve	WA
Yalgorup	National Park	WA
Yanchep	National Park	WA
Yawuru	Indigenous Protected Area	WA
Yawuru Nagulagun / Roebuck Bay	Marine Park	WA
Y Island	Nature Reserve	WA

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
South West WA RFA	Western Australia

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State
Bundera Sinkhole	WA
Cape Leeuwin System	WA
Cape Range Subterranean Waterways	WA

Wetland Name	State
Exmouth Gulf East	WA
Hutt Lagoon System	WA
Lake MacLeod	WA
Learmonth Air Weapons Range - Saline Coastal Flats	WA
Leslie (Port Hedland) Saltfields System	WA
Loch McNess System	WA
Mermaid Reef	EXT
Rottnest Island Lakes	WA
Shark Bay East	WA
Yalgorup Lakes System	WA
Yampi Sound Training Area	WA

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Alkimos Seawater Desalination	2019/8453		Assessment
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Burrup Common User Transmission Infrastructure	2022/09407		Assessment
Cockatoo Island Multi-User Supply Base, WA	2017/7986		Assessment
Dampier Seawater Desalination Plant	2022/09395		Completed
Gorgon Gas Development	2003/1294		Post-Approval
Koolan Island Operations	2022/09392		Assessment
Midwest Offshore Wind Farm	2022/09264		Assessment
North West Shelf Project Extension, Carnarvon Basin, WA	2018/8335		Approval
Ocean Barramundi Expansion Project	2022/09272		Assessment
Optimised Mardie Solar Salt Project	2022/9169		Assessment

Title of referral	Reference	Referral Outcome	Assessment Status
Project Highclere Cable Lay and Operation	2022/09203		Completed
Ridley Magnetite Project	2023/09477		Referral Decision
Samphire Offshore Wind Farm	2022/09306		Assessment
Yanchep Rail Extension, WA	2018/8262		Post-Approval
Yogi Magnetite Project, 225km east, northeast of Geraldton, WA	2017/8124		Assessment
Action clearly unacceptable			
Highlands 3D Marine Seismic Survey	2012/6680	Action Clearly Unacceptable	Completed
Controlled action			
'Van Gogh' Petroleum Field Development	2007/3213	Controlled Action	Post-Approval
2-D seismic survey Scott Reef	2000/125	Controlled Action	Post-Approval
Airborne sonar trials	2001/540	Controlled Action	Completed
Alkimos city centre and central development, WA	2015/7561	Controlled Action	Post-Approval
Alkimos Coastal Node	2020/8861	Controlled Action	Further Information Request
Ammonium Nitrate Project	2010/5423	Controlled Action	Completed
Anketell Point Iron Ore Processing & Export Port	2009/5120	Controlled Action	Post-Approval
Balmoral South Iron Ore Mine	2008/4236	Controlled Action	Post-Approval
Binowee Iron Ore Project	2001/366	Controlled Action	Proposed Decision
Boating Facility	2002/830	Controlled Action	Completed
Bonaparte Liquified Natural Gas Project	2011/6141	Controlled Action	Post-Approval
Browse FLNG Development, Commonwealth Waters	2013/7079	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Butler North District Open Space playing fields development, Wanneroo, WA	2017/8053	Controlled Action	Post-Approval
Cape Lambert Port B Development	2008/4032	Controlled Action	Post-Approval
Catalina Residential Development	2010/5785	Controlled Action	Post-Approval
Construct and operate LNG & domestic gas plant including onshore and offshore facilities - Wheatston	2008/4469	Controlled Action	Post-Approval
Construction and operation of a Solar Salt Project, SW Onslow, WA	2016/7793	Controlled Action	Assessment Approach
construction and operation of a unmanned platform at the Cliff Head oil field, a	2003/1300	Controlled Action	Post-Approval
Construction of New Perth Bunbury Highway project	2005/2193	Controlled Action	Post-Approval
Construction of the Oakajee Port and Rail Project	2011/5797	Controlled Action	Post-Approval
Develop Ichthys gas-condensate field permit area W	2006/2767	Controlled Action	Completed
Develop Jansz-10 deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	Controlled Action	Post-Approval
Development of Angel gas and condensate field, North West Shelf	2004/1805	Controlled Action	Post-Approval
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Development of Coniston/Novara fields within the Exmouth Sub-basin	2011/5995	Controlled Action	Post-Approval
development of land based tourist facilities on Long Island	2006/2792	Controlled Action	Post-Approval
Development of Stybarrow petroleum field incl drilling and facility installation	2004/1469	Controlled Action	Post-Approval
Echo-Yodel Production Wells	2000/11	Controlled Action	Post-Approval
Eglinton/South Yanchep Residential Development	2011/6021	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Eglinton Estates - Clearing of native vegetation from Lot 1007 & part Lot 1008	2010/5777	Controlled Action	Post-Approval
Enfield full field development	2001/257	Controlled Action	Post-Approval
Equus Gas Fields Development Project, Carnarvon Basin	2012/6301	Controlled Action	Completed
Eramurra Industrial Salt Project	2021/9027	Controlled Action	Assessment Approach
Eramurra Industrial Salt Project, near Karratha, WA	2019/8448	Controlled Action	Completed
Excavate sand and limestone resources	2010/5621	Controlled Action	Completed
Flat Rock boating facility	2008/4506	Controlled Action	Post-Approval
Gorgon Gas Development 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Gorgon Gas Revised Development	2008/4178	Controlled Action	Post-Approval
Greater Enfield (Vincent) Development	2005/2110	Controlled Action	Post-Approval
Greater Gorgon Development - Optical Fibre Cable, Mainland to Barrow Island	2005/2141	Controlled Action	Completed
Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline	2008/4208	Controlled Action	Post-Approval
Iron ore mine	2006/2522	Controlled Action	Post-Approval
Jindee Residential Development	2012/6631	Controlled Action	Post-Approval
Leeuwin Offshore Wind Farm	2022/9160	Controlled Action	Assessment Approach
Light Crude Oil Production	2001/365	Controlled Action	Post-Approval
Mardie Project, 80 km south west of Karratha, WA	2018/8236	Controlled Action	Post-Approval
Mauds Landing Marina	2000/98	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Mitchell Freeway Extension and Wanneroo Road Upgrade, WA	2018/8367	Controlled Action	Post-Approval
Mitchell Freeway Extension between Burns Beach Rd and Hester Av, Neerabup, WA	2013/7091	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Neerabup Industrial Estate, Lot 701 Flynn Drive Neerabup WA	2012/6424	Controlled Action	Post-Approval
Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia	2020/8693	Controlled Action	Assessment Approach
North West Shelf Gas Venture Phase VI Expansion	2007/3436	Controlled Action	Referral Decision
Ocean Reef Marina Development	2009/4937	Controlled Action	Completed
open cut mine & assoc infrastructure	2005/2381	Controlled Action	Post-Approval
Perdaman Urea Project, near Karratha, WA	2018/8383	Controlled Action	Post-Approval
Pluto Gas Project	2005/2258	Controlled Action	Completed
Pluto Gas Project Including Site B	2006/2968	Controlled Action	Post-Approval
Pluton Irvine Island Iron Ore Project	2011/6064	Controlled Action	Proposed Decision
Port Enhancement Project	2001/266	Controlled Action	Post-Approval
Port Hedland Outer Harbour Development and associated marine and terrestrial in	2008/4159	Controlled Action	Post-Approval
Prelude Floating Liquefied Natural Gas Facility and Gas Field Development	2008/4146	Controlled Action	Post-Approval
Proposed technical ammonium nitrate production facility	2008/4546	Controlled Action	Post-Approval
Proposed Urban Development of Lots 1005 & 1006	2008/4638	Controlled Action	Post-Approval
Proposed West Pilbara Iron Ore Project	2009/4706	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Pyrenees Oil Fields Development	2005/2034	Controlled Action	Post-Approval
Residential development, Lot 609, Yanchep Beach Road, Yanchep, WA	2014/7146	Controlled Action	Post-Approval
Residential development Lot 1004 Alkimos WA	2011/5902	Controlled Action	Post-Approval
Shark Hazard Mitigation Drum Line Program, WA	2014/7174	Controlled Action	Completed
Simpson Development	2000/59	Controlled Action	Completed
Simpson Oil Field Development	2001/227	Controlled Action	Post-Approval
site preparations	2005/2391	Controlled Action	Post-Approval
Smiths Beach Project, Yallingup - Coastal Tourism Village	2021/9141	Controlled Action	Referral Publication
Tourism Facility and Associated Infrastructure	2005/2038	Controlled Action	Post-Approval
tourist and residential development	2007/3483	Controlled Action	Post-Approval
Urban and Residential Development at Lot 9 Brighton	2011/6137	Controlled Action	Post-Approval
Urban development in accordance with the Local Structure Plan	2008/4601	Controlled Action	Post-Approval
Urban Residential Development at Lot 9049 Marmoin Avenue	2009/5155	Controlled Action	Post-Approval
Vegetation Clearing, Wannaroo Rd and Nowergup Rd	2011/5955	Controlled Action	Completed
Vincent Appraisal Well	2000/22	Controlled Action	Post-Approval
WA Offshore Windfarm	2021/8961	Controlled Action	Assessment Approach
Widening and resurfacing two principal roads servicing the Dampier Port Authori	2010/5677	Controlled Action	Completed
Yardie Creek Road Realignment Project	2021/8967	Controlled Action	Assessment Approach
Not controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
'Goodwyn A' Low Pressure Train Project	2003/914	Not Controlled Action	Completed
'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)	2006/3148	Not Controlled Action	Completed
2D Seismic Survey in Permit Areas WA-318-P & WA-319-P, near Cape Londonderry	2004/1687	Not Controlled Action	Completed
Adele Trend TQ3D Seismic Survey	2001/252	Not Controlled Action	Completed
Airlie Island soil and groundwater investigations, Exmouth Gulf, offshore Pilbara coast	2014/7250	Not Controlled Action	Completed
Alkimos seawater desalination plant, offshore investigations, WA	2018/8224	Not Controlled Action	Completed
Amberton West urban development - Part lot 9005 Eglinton WA	2013/7068	Not Controlled Action	Completed
Ammonia Plant	2001/199	Not Controlled Action	Completed
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
archaeological surveys & excavation at historic sites, Cape Inscription	2006/3027	Not Controlled Action	Completed
Baniyas-1 Exploration Well, EP-424, near Onslow	2007/3282	Not Controlled Action	Completed
Barrow Island 2D Seismic survey	2006/2667	Not Controlled Action	Completed
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	Not Controlled Action	Completed
Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells	2000/103	Not Controlled Action	Completed
Busselton to Flinders Bay Rails to Trails Project, WA	2013/6835	Not Controlled Action	Completed
Butler Railway Extension Project - Nowergup Depot Eastern Alignment	2011/5989	Not Controlled Action	Completed
Cape Lambert Port A Marine Structures Refurbishment Project	2018/8370	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Carnarvon 3D Marine Seismic Survey	2004/1890	Not Controlled Action	Completed
Caves Road widening project between Dunsborough and Yallingup(20.3 -24.6 SLK), WA	2015/7475	Not Controlled Action	Completed
Cliff Head 6 appraisal well	2004/1702	Not Controlled Action	Completed
Cliff Head Appraisal Wells	2003/938	Not Controlled Action	Completed
Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for	2004/1703	Not Controlled Action	Completed
Construction of a Commodities Berth, Wharf and Associated Infrastructure	2008/4129	Not Controlled Action	Completed
Construction of Loadout Facility and Laydown Area	2002/598	Not Controlled Action	Completed
Construction of Secret Harbour High School	2004/1489	Not Controlled Action	Completed
Container Deposit Scheme Project	2019/8517	Not Controlled Action	Completed
CTBT - Cape Leeuwin Hydroacoustic Station Proposal	2000/27	Not Controlled Action	Completed
Deep Gorge Boardwalk, Murujuga National Park, WA	2018/8283	Not Controlled Action	Completed
Development of Halyard Field off the west coast of WA	2010/5611	Not Controlled Action	Completed
Development of Industrial Land, Port of Dampier	2003/1293	Not Controlled Action	Completed
Development of iron ore facilities	2013/7013	Not Controlled Action	Completed
Development of Mutineer and Exeter petroleum fields for oil production, Permit	2003/1033	Not Controlled Action	Completed
Development of new Alkimos Wastwater Treatment Plant	2007/3259	Not Controlled Action	Completed
Dimethyl ether plant	2001/509	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Drilling between Kalbarri and Cliff Head	2005/2185	Not Controlled Action	Completed
Drilling of 12 Hydrocarbon Exploration Wells, Permit Area WA-371-P	2006/3005	Not Controlled Action	Completed
Drilling of an exploration well Gats-1 in Permit Area WA-261-P	2004/1701	Not Controlled Action	Completed
Drilling of exploration wells, Permit areas WA-301-P to WA-305-P	2002/769	Not Controlled Action	Completed
Eagle-1 Exploration Drilling, North West Shelf, WA	2019/8578	Not Controlled Action	Completed
Echo A Development WA-23-L, WA-24-L	2005/2042	Not Controlled Action	Completed
Echuca Shoals-2 Exploration of Appraisal Well	2006/3020	Not Controlled Action	Completed
Eradication of the European House Borer, Perth metropolitan area, WA	2009/5027	Not Controlled Action	Completed
Expansion of the Sino Iron Ore Mine and export facilities, Cape Preston, WA	2017/7862	Not Controlled Action	Completed
Expansion Proposal, Mineralogy Cape Preston Iron Ore Project, Cape Preston, WA	2009/5010	Not Controlled Action	Completed
Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters	2017/7891	Not Controlled Action	Completed
Exploration drilling program located in exploration permits WA-286-P and TP/15	2002/676	Not Controlled Action	Completed
Exploration drilling well WA-155-P(1)	2003/971	Not Controlled Action	Completed
Exploration of appraisal wells	2006/3065	Not Controlled Action	Completed
Exploration Well (Taunton-2)	2002/731	Not Controlled Action	Completed
Exploration Well in Permit Area WA-155-P(1)	2002/759	Not Controlled Action	Completed
Exploratory drilling in permit area WA-225-P	2001/490	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Extension of 7.5km of the Joondalup Line electrified passenger railway from Cla	2010/5632	Not Controlled Action	Completed
Extension of Simpson Oil Platforms & Wells	2002/685	Not Controlled Action	Completed
Extention to the existing Blind Strait Black Lip Pearl Oyster Farm	2004/1342	Not Controlled Action	Completed
Fremantle Ports Inner Harbour Capital Dredging Proposal	2005/2477	Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
Gulf Fishing Lodge	2010/5499	Not Controlled Action	Completed
Hadda 1, Flying Foam 1, Magnat 1 exploration drill	2004/1697	Not Controlled Action	Completed
HCA05X Macedon Experimental Survey	2004/1926	Not Controlled Action	Completed
Hess Exploration Drilling Programme	2007/3566	Not Controlled Action	Completed
Huascaran-1 exploration well (WA-292-P)	2001/539	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infill Production Well (Griffin-9)	2001/417	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Kennedy Park Estate Residential Development	2003/1044	Not Controlled Action	Completed
King Bay East Rock Quarry & Industrial Estate Development	2003/1150	Not Controlled Action	Completed
Klammer 2D Seismic Survey	2002/868	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Koolan Island Mine - Reconstruction of seawall and capital dewatering of mine pit, 130km northwest of	2016/7848	Not Controlled Action	Completed
Limestone quarry expansion	2005/2268	Not Controlled Action	Completed
Limestone Quarry Expansion, Lots 3618 and 1794, Finn Road	2005/2332	Not Controlled Action	Completed
Maia-Gaea Exploration wells	2000/17	Not Controlled Action	Completed
Manaslu - 1 and Huascaran - 1 Offshore Exploration Wells	2001/235	Not Controlled Action	Completed
Marine Seismic Survey in WA-239-P	2000/24	Not Controlled Action	Completed
Mermaid Marine Australia Desalination Project	2011/5916	Not Controlled Action	Completed
Methanol manufacturing	2001/528	Not Controlled Action	Completed
Methanol plant	2001/521	Not Controlled Action	Completed
Montesa-1 and Bultaco-1 Exploration Wells	2000/102	Not Controlled Action	Completed
Murujuga archaeological excavation, collection and sampling, Dampier Archipelago, WA	2014/7160	Not Controlled Action	Completed
North Rankin B gas compression facility	2005/2500	Not Controlled Action	Completed
Nowergup Strawberry Farm McLennan Drive, Nowergup, WA	2017/8042	Not Controlled Action	Completed
Ocean Reef Marina Development, City of Joondalup, WA	2014/7237	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Onslow Power Infrastructure Upgrade Project, Onslow, WA	2014/7314	Not Controlled Action	Completed
Onslow Water Supply Infrastructure Upgrade Project, Onslow, WA	2014/7329	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Pipeline System Modifications Project	2000/3	Not Controlled Action	Completed
Pluto-North West Shelf Interconnector, Burrup Peninsula, WA	2018/8353	Not Controlled Action	Completed
Port Expansion and Dredging	2003/1265	Not Controlled Action	Completed
Port Hedland Channel Risk and Optimisation Project, WA	2017/7915	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed
Quinns Main sewer extension, Clarkson - Neerabup, WA	2018/8215	Not Controlled Action	Completed
Rail and Port Facilities	2001/474	Not Controlled Action	Completed
Residential development, Lots 9010 and 9031, Yanchep Beach Rd, Yanchep	2016/7642	Not Controlled Action	Completed
Residential Development Eglinton West, Lot 5000 & part Lot 5001, Pipidinny Road, Eglinton	2014/7137	Not Controlled Action	Completed
Residential-Rural Subdivision, Lot 1 Kudardup Rd, Kudardup, WA	2012/6471	Not Controlled Action	Completed
residential subdivision	2005/1965	Not Controlled Action	Completed
Rottnest Lodge Redevelopment	2019/8565	Not Controlled Action	Completed
Scientific Sonar Trial	2002/680	Not Controlled Action	Completed
Searipple gas and condensate field development	2000/89	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed
Spool Base Facility	2001/263	Not Controlled Action	Completed
Stages 1 & 2 Port of Dampier Security Upgrade & Associated Works	2004/1751	Not Controlled Action	Completed
Subsea Gas Pipeline From Stybarrow Field to Griffin Venture	2005/2033	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<u>Gas Export Pipeline</u>			
<u>sub-sea tieback of Perseus field wells</u>	2004/1326	Not Controlled Action	Completed
<u>Telstra North Rankin Spur Fibre Optic Cable</u>	2016/7836	Not Controlled Action	Completed
<u>Thevenard Island Retirement Project</u>	2015/7423	Not Controlled Action	Completed
<u>To construct and operate an offshore submarine fibre optic cable, WA</u>	2014/7373	Not Controlled Action	Completed
<u>Useless Loop Road Upgrade</u>	2000/83	Not Controlled Action	Completed
<u>Vegetation clearing for sand extraction, Lot 268 Leeuwin Road, Augusta</u>	2013/6860	Not Controlled Action	Completed
<u>WA-286-P Exploration Drilling Programme</u>	2007/3863	Not Controlled Action	Completed
<u>WA-295-P Kerr-McGee Exploration Wells</u>	2001/152	Not Controlled Action	Completed
<u>Wanda Offshore Research Project, 80 km north-east of Exmouth, WA</u>	2018/8293	Not Controlled Action	Completed
<u>Western Flank Gas Development</u>	2005/2464	Not Controlled Action	Completed
<u>Wheatstone 3D seismic survey, 70km north of Barrow Island</u>	2004/1761	Not Controlled Action	Completed
<u>Widening of MOF Road</u>	2005/2305	Not Controlled Action	Completed
<u>Woodside Project Facilities Increase</u>	2006/3191	Not Controlled Action	Completed
<u>Yellowfin Tuna Aquaculture Trial</u>	2003/1115	Not Controlled Action	Completed
<u>Yngling-1 exploration well for WA-368-P</u>	2007/3523	Not Controlled Action	Completed
Not controlled action (particular manner)			
<u>'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km</u>	2005/2037	Not Controlled Action (Particular Manner)	Post-Approval
<u>'Tourmaline' 2D marine seismic survey, permit areas WA-323-P,</u>	2005/2282	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
WA-330-P and WA-32		(Particular Manner)	
"Leanne" offshore 3D seismic exploration, WA-356-P	2005/1938	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey	2011/6197	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D seismic surveys	2005/2151	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2009/5104	Not Controlled Action (Particular Manner)	Post-Approval
2D and 3D Seismic Survey WA-405-P	2008/4133	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey	2009/4728	Not Controlled Action (Particular Manner)	Post-Approval
2D Marine Seismic Survey in Permit Area WA-337-P	2003/1158	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey of Braveheart, Kurrajong, Sunshine and Crocodile	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
2D marine seismic survey within permit area WA-318-P	2007/3879	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic survey	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
2D Seismic Survey	2005/2146	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
2D Seismic Survey Permit Area WA-352-P	2008/4628	Not Controlled Action (Particular Manner)	Post-Approval
2D seismic survey within permit WA-291	2007/3265	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey	2007/3800	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in Permit Areas WA-15-R, WA-18-R, WA-205-P, WA-253-P, WA-267-P and WA-268-P	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in WA 457-P & WA 458-P, North West Shelf, offshore WA	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Surveys - Contos CT-13 & Supertubes CT-13, offshore WA	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey Within WA-382-P	2007/3799	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2715	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
3D Seismic Survey, WA	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey in the Carnarvon Basin on the North West Shelf	2002/778	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
Acacia East Pit Cutback Mining Project,northern Kimberley, WA	2013/6752	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Algae Farm and Processing Facilities	2012/6596	Not Controlled Action (Particular Manner)	Post-Approval
Ammonia Plant, Murujuga Burrup Peninsula - Renewable Hydrogen Project	2020/8739	Not Controlled Action (Particular Manner)	Post-Approval
Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
Aperio 3D Marine Seismic Survey, WA	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
Artemis-1 Drilling Program (WA-360-P)	2010/5432	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Aurora MC3D Marine Seismic Survey	2010/5510	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA	2013/7081	Not Controlled Action (Particular Manner)	Post-Approval
Balnaves Condensate Field Development	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte 2D & 3D marine seismic survey	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
Bonaparte Seismic and Bathymetric Survey	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Infill Marine Seismic Survey 100km offshore	2008/4442	Not Controlled Action (Particular Manner)	Post-Approval
Braveheart 2D Marine Seismic Survey	2005/2322	Not Controlled Action (Particular Manner)	Post-Approval
Cable Seismic Exploration Permit areas WA-323-P and WA-330-P	2008/4227	Not Controlled Action (Particular Manner)	Post-Approval
Canis 3D Marine Seismic Survey	2008/4492	Not Controlled Action (Particular Manner)	Post-Approval
Cape Preston East - Iron Ore Export Facilities, Pilbara, WA	2013/6844	Not Controlled Action (Particular Manner)	Post-Approval
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Cerberus exploration drilling campaign, Carnarvon Basin, WA	2016/7645	Not Controlled Action (Particular Manner)	Post-Approval
CETO 6 Garden Island Project, offshore WA	2016/7635	Not Controlled Action (Particular Manner)	Post-Approval
CETO 6 Geophysical and Geotechnical Surveys	2014/7408	Not Controlled Action (Particular Manner)	Post-Approval
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
Charon 3D Marine Seismic Survey	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
Construction of urea production plant and supporting infrastructure	2009/5067	Not Controlled Action (Particular Manner)	Post-Approval
Consturction & operation of the Varanus Island kitchen & mess cyclone refuge building, compression p	2013/6952	Not Controlled Action (Particular Manner)	Post-Approval
Coverack Marine Seismic Survey	2001/399	Not Controlled Action (Particular Manner)	Post-Approval
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
CVG 3D Marine Seismic Survey	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
Dampier Marine Services Facility including 300m Wharf and Dredging Works	2009/5108	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
DAVROS MC 3D marine seismic survey northwaet of Dampier, WA	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval
Decommissioning of the Legendre facilities	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Drilling Program	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Demeter 3D Seismic Survey, off Dampier, WA	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
develop and operate a new deepwater port	2010/5760	Not Controlled Action (Particular Manner)	Post-Approval
Diesel Fuel Bunker Operation	2012/6289	Not Controlled Action (Particular Manner)	Post-Approval
Draeck 3D Marine Seismic Survey, WA-205-P	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
Dredging of marine sediment to enable construction of eight berths and a turnin	2010/5678	Not Controlled Action (Particular Manner)	Post-Approval
Drilling 35-40 offshore exploration wells in deep water	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
Drilling of Exploration & Appraisal Wells Braveheart-1 & Cornea-3	2009/5160	Not Controlled Action (Particular Manner)	Post-Approval
Earthworks for kitchen/mess, cyclone refuge building & Compression Plant, Varanus Island	2013/6900	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
Endurance 3D Marine Seismic Data Acquisition Survey	2007/3667	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M3 & Vincent 4D Marine Seismic Surveys	2008/3981	Not Controlled Action (Particular Manner)	Completed
Enfield M3 4D, Vincent 4D & 4D Line Test Marine Seismic Surveys	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
Enfield M4 4D Marine Seismic Survey	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
Enfield oilfield 3D Seismic Survey	2006/3132	Not Controlled Action (Particular Manner)	Post-Approval
Exmouth West 2D Marine Seismic Survey	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
Exploration Drilling Campaign, Browse Basin, WA-341-P, AC-P36 and WA-343-P	2013/6898	Not Controlled Action (Particular Manner)	Post-Approval
Exploration drilling of Zeus-1 well	2008/4351	Not Controlled Action (Particular Manner)	Post-Approval
Fishburn2D Marine Seismic Survey	2012/6659	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Fletcher-Finucane Development, WA26-L and WA191-P	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
Floyd 3D and Chisel 3D Seismic Surveys	2011/6220	Not Controlled Action (Particular Manner)	Post-Approval
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
Geco Eagle 3D Marine Seismic Survey	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
Geoscience Australia - Marine survey in Browse Basin to acquire data to assist assessment of CO2 sto	2013/6747	Not Controlled Action (Particular Manner)	Post-Approval
Glencoe 3D Marine Seismic Survey WA-390-P	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
Gold 2D Marine Seismic Survey Permit Areas WA375P and WA376P	2009/4698	Not Controlled Action (Particular Manner)	Post-Approval
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
Greater Western Flank Phase 1 gas Development	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
Grimalkin 3D Seismic Survey	2008/4523	Not Controlled Action (Particular Manner)	Post-Approval
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Harmony 3D Marine Seismic Survey	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval
Harpy 1 exploration well	2001/183	Not Controlled Action (Particular Manner)	Post-Approval
Honeycombs MC3D Marine Seismic Survey	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
Ichthys 3D Marine Seismic Survey	2010/5550	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
John Ross & Rosella Off Bottom Cable Seismic Exploration Program	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
Judo Marine 3D Seismic Survey within and adjacent to WA-412-P	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
Julimar Brunello Gas Development Project	2011/5936	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Koolama 2D Seismic Survey Dampier Basin	2010/5420	Not Controlled Action (Particular Manner)	Post-Approval
Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Leopard 2D marine seismic survey	2005/2290	Not Controlled Action (Particular Manner)	Post-Approval
Lion 2D Marine Seismic Survey	2007/3777	Not Controlled Action (Particular Manner)	Post-Approval
Macedon Gas Field Development	2008/4605	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey	2012/6275	Not Controlled Action (Particular Manner)	Post-Approval
Marine Environmental Survey 2012	2012/6310	Not Controlled Action (Particular Manner)	Post-Approval
Marine Geotechnical Drilling Program	2008/4012	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Mariner Non-Exclusive 2D Seismic Survey	2011/6172	Not Controlled Action (Particular Manner)	Post-Approval
Marine Seismic Survey for oil and gas in Commonwealth waters off the WA coast.	2004/1802	Not Controlled Action (Particular Manner)	Post-Approval
Marine Seismic Survey in Permit WA-481P	2012/6626	Not Controlled Action (Particular Manner)	Post-Approval
Millstream 20GL Pipeline, Bungaroo, Borefield Integration	2012/6379	Not Controlled Action (Particular Manner)	Post-Approval
MOF Road Widening and Resurfacing Works	2011/5843	Not Controlled Action (Particular Manner)	Post-Approval
Moosehead 2D seismic survey within permit WA-192-P	2005/2167	Not Controlled Action (Particular Manner)	Post-Approval
Multipurpose development stage 1 within 340ha	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval
Munmorah 2D seismic survey within permits WA-308/9-P	2003/970	Not Controlled Action (Particular Manner)	Post-Approval
Nelson Point Dredging	2009/4920	Not Controlled Action (Particular Manner)	Post-Approval
Nexus Energy Seismic survey WA	2006/2569	Not Controlled Action (Particular Manner)	Post-Approval
North Perth Marine Survey	2011/6067	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
NT/P77 3D Marine Seismic Survey	2009/4683	Not Controlled Action (Particular Manner)	Post-Approval
NT/P80 2010 2D Marine Seismic Survey	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
Ocean Bottom Cable Seismic Program, WA-264-P	2007/3844	Not Controlled Action (Particular Manner)	Post-Approval
Ocean Bottom Cable Seismic Survey	2005/2017	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Drilling Campaign	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Exploration Drilling Campaign	2011/6222	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Onslow Seawater Desalination Plant Marine Geophysical Investigation	2020/8794	Not Controlled Action (Particular Manner)	Post-Approval
Orcus 3D Marine Seismic Survey in WA-450-P	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
Osprey and Dionysus Marine Seismic Survey	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
Outer Canning exploration drilling program off NW coast of WA	2012/6618	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Palta-1 exploration well in Petroleum Permit Area WA-384-P	2011/5871	Not Controlled Action (Particular Manner)	Post-Approval
Petrel MC2D Marine Seismic Survey	2010/5368	Not Controlled Action (Particular Manner)	Post-Approval
Phoenix 3D Seismic Survey, Bedout Sub-Basin	2010/5360	Not Controlled Action (Particular Manner)	Post-Approval
Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval
Port Headland Outer Harbour Pre-construction Pilling program	2012/6341	Not Controlled Action (Particular Manner)	Post-Approval
Port of Port Hedland channel marker replacement project, WA	2017/8010	Not Controlled Action (Particular Manner)	Post-Approval
Port Walcott upgrade, dredging & spoil disposal, & channel realignment	2006/2806	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees 4D Marine Seismic Monitor Survey, HCA12A	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
Pyrenees-Macedon 3D marine seismic survey	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
Reindeer gas reservoir development, Devil Creek, Carnarvon Basin - WA	2007/3917	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Repsol 3d & 2D Marine Seismic Survey	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
Rydal-1 Petroleum Exploration Well, WA	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
Salsa 3D Marine Seismic Survey	2010/5629	Not Controlled Action (Particular Manner)	Post-Approval
Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
Santos Winchester three dimensional seismic survey - WA-323-P & WA-330-P	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval
Scarborough Development nearshore component, NWS, WA	2018/8362	Not Controlled Action (Particular Manner)	Post-Approval
Schild MC3D Marine Seismic Survey	2012/6373	Not Controlled Action (Particular Manner)	Post-Approval
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
search for HMAS Sydney	2006/3071	Not Controlled Action (Particular Manner)	Post-Approval
Skorpion Marine Seismic Survey WA	2001/416	Not Controlled Action (Particular Manner)	Post-Approval
South West Metropolitan Railway Project	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Sovereign 3D Marine Seismic Survey	2011/5861	Not Controlled Action (Particular Manner)	Post-Approval
Stag 4D & Reindeer MAZ Marine Seismic Surveys, WA	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
Stag Off-bottom Cable Seismic Survey	2007/3696	Not Controlled Action (Particular Manner)	Post-Approval
Study of behavioural responses of Austn Humpback Whales to seismic surveys, offshore Dongara, WA	2013/6927	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow 4D Marine Seismic Survey	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
Stybarrow Baseline 4D marine seismic survey	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
Supply of road building material areas Shark Bay Region WA	2012/6280	Not Controlled Action (Particular Manner)	Post-Approval
Tantabiddi Boat Ramp Sand Bypassing	2015/7411	Not Controlled Action (Particular Manner)	Post-Approval
The Dampier Heavy Load Out Facility Berth and Swing Basin Expansion	2012/6271	Not Controlled Action (Particular Manner)	Post-Approval
Tidepole Maz 3D Seismic Survey Campaign	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
Tortilla 2D Seismic Survey, WA	2011/6110	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a 3D marine seismic survey	2010/5695	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
Undertake a three dimensional marine seismic survey	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
upgrade of 3 community recreation sites	2005/2349	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Veritas Voyager 2D Marine Seismic Survey	2009/5151	Not Controlled Action (Particular Manner)	Post-Approval
Vincent M1 and Enfield M5 4D Marine Seismic Survey	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
West Anchor 3D Marine Seismic Survey	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
West Panaeus 3D seismic survey	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Wheatstone 3D MAZ Marine Seismic Survey	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
Wheatstone Iago Appraisal Well Drilling	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval
Woodside Southern Browse 3D Seismic Survey, WA	2007/3534	Not Controlled Action (Particular Manner)	Post-Approval
Zeemeermin MC3D seismic survey, Browse Basin, Offshore WA	2009/5023	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
2D Marine Seismic Survey	2008/4623	Referral Decision	Completed
3D Marine Seismic survey	2007/3729	Referral Decision	Completed
3D Marine Seismic survey	2007/3725	Referral Decision	Completed
3D Marine Seismic Survey in the offshore northwest Carnarvon Basin	2011/6175	Referral Decision	Completed
3D Seismic Survey	2008/4219	Referral Decision	Completed
3D Seismic Survey	2012/6245	Referral Decision	Completed
Aurora extension MC3D Marine Seismic Survey	2011/5887	Referral Decision	Completed
Bianchi 3D Marine Seismic Survey, Carnarvon Basin, WA	2013/7078	Referral Decision	Completed
BRSN08 3D Marine Seismic Survey	2008/4582	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
CO2 3D Seismic Survey Vlaming Sub-Basin	2012/6343	Referral Decision	Completed
construction of a new loadout facility and associated laydown area south of the	2002/579	Referral Decision	Completed
CVG 3D Marine Seismic Survey	2012/6270	Referral Decision	Completed
Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L	2005/2370	Referral Decision	Completed
Exploration Drilling 2014/2015 WA-481-P	2013/7043	Referral Decision	Completed
Grand Southern Margin 2D Marine Seismic Survey	2008/4573	Referral Decision	Completed
Mardie Salt Project, Pilbara region, WA	2018/8183	Referral Decision	Completed
Narelle 3D Marine Seismic Survey	2008/4575	Referral Decision	Completed
Outer Harbour Development and associated marine and terrestrial infrastructure	2008/4148	Referral Decision	Completed
Proposed exploration drilling activities, Abrolhos Commonwealth Marine Reserve	2013/6949	Referral Decision	Completed
Residential Subdivision of 60ha, Swan Location 2424	2004/1928	Referral Decision	Completed
Rose 3D Seismic acquisition survey	2008/4220	Referral Decision	Completed
Seismic Data Acquisition, Browse Basin	2010/5475	Referral Decision	Completed
Sonar Trials and Acoustic Trials	2001/538	Referral Decision	Completed
Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-	2008/4165	Referral Decision	Completed
Tidal Power Generation Turbine	2009/5235	Referral Decision	Completed
Two Dimensional Transition Zone Seismic Survey - TP/7 (R1)	2010/5507	Referral Decision	Completed
Varanus Island Compression Project	2012/6698	Referral Decision	Completed

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Albany Canyons group and adjacent shelf break	South-west
Ancient coastline at 125 m depth contour	North-west
Ancient coastline at 90-120m depth	South-west
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Cape Mentelle upwelling	South-west
Carbonate bank and terrace system of the Sahul Shelf	North-west
Commonwealth marine environment surrounding the Houtman Abrolhos Islands	South-west
Commonwealth marine environment within and adjacent to Geographe Bay	South-west
Commonwealth marine environment within and adjacent to the west coast inshore lagoons	South-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west
Glomar Shoals	North-west
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	North-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Pinnacles of the Bonaparte Basin	North-west
Western demersal slope and associated fish communities	South-west
Western rock lobster	South-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Dolphins		

Scientific Name	Behaviour	Presence
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Breeding	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Calving	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Foraging	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Foraging (high density prey)	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Foraging likely	Known to occur
Orcaella heinsohni Australian Snubfin Dolphin [81322]	Resting	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Breeding	Likely to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Calving	Likely to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Calving	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging	Likely to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging (high density prey)	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Foraging (high density prey)	Likely to occur

Scientific Name	Behaviour	Presence
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Significant habitat	Known to occur
Sousa chinensis Indo-Pacific Humpback Dolphin [50]	Significant habitat - unknown behaviour	Likely to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Calving	Known to occur
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur
Dugong		
Dugong dugon Dugong [28]	Breeding	Known to occur
Dugong dugon Dugong [28]	Calving	Known to occur
Dugong dugon Dugong [28]	Foraging	Known to occur
Dugong dugon Dugong [28]	Foraging	Likely to occur
Dugong dugon Dugong [28]	Foraging (high density seagrass beds)	Known to occur
Dugong dugon Dugong [28]	Migration likely	Known to occur
Dugong dugon Dugong [28]	Nursing	Known to occur
Marine Turtles		
Caretta caretta Loggerhead Turtle [1763]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Caretta caretta Loggerhead Turtle [1763]	Internesting	Known to occur
Caretta caretta Loggerhead Turtle [1763]	Internesting buffer	Known to occur
Caretta caretta Loggerhead Turtle [1763]	Nesting	Known to occur
Chelonia mydas Green Turtle [1765]	Aggregation	Known to occur
Chelonia mydas Green Turtle [1765]	Basking	Known to occur
Chelonia mydas Green Turtle [1765]	Foraging	Likely to occur
Chelonia mydas Green Turtle [1765]	Foraging	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting	Known to occur
Chelonia mydas Green Turtle [1765]	Internesting buffer	Known to occur
Chelonia mydas Green Turtle [1765]	Mating	Known to occur
Chelonia mydas Green Turtle [1765]	Migration corridor	Known to occur
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Foraging	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting	Known to occur

Scientific Name	Behaviour	Presence
Eretmochelys imbricata Hawksbill Turtle [1766]	Internesting buffer	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Mating	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Migration corridor	Known to occur
Eretmochelys imbricata Hawksbill Turtle [1766]	Nesting	Known to occur
Lepidochelys olivacea Olive Ridley Turtle [1767]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Aggregation	Known to occur
Natator depressus Flatback Turtle [59257]	Foraging	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting	Known to occur
Natator depressus Flatback Turtle [59257]	Internesting buffer	Known to occur
Natator depressus Flatback Turtle [59257]	Mating	Known to occur
Natator depressus Flatback Turtle [59257]	Migration corridor	Known to occur
Natator depressus Flatback Turtle [59257]	Nesting	Known to occur
River shark		
Pristis clavata Dwarf Sawfish [68447]	Foraging	Known to occur
Pristis clavata Dwarf Sawfish [68447]	Juvenile	Known to occur

Scientific Name	Behaviour	Presence
Pristis clavata Dwarf Sawfish [68447]	Nursing	Known to occur
Pristis clavata Dwarf Sawfish [68447]	Pupping	Known to occur
Pristis pristis Freshwater Sawfish [60756]	Foraging	Known to occur
Pristis pristis Freshwater Sawfish [60756]	Nursing	Likely to occur
Pristis pristis Freshwater Sawfish [60756]	Pupping	Likely to occur
Pristis zijsron Green Sawfish [68442]	Foraging	Known to occur
Pristis zijsron Green Sawfish [68442]	Nursing	Known to occur
Pristis zijsron Green Sawfish [68442]	Pupping	Known to occur
Seabirds		
Anous stolidus Common Noddy [825]	Foraging	Known to occur
Anous stolidus Common Noddy [825]	Foraging (provisioning young)	Known to occur
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Foraging (provisioning young)	Known to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Aggregation	Known to occur
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging (in high numbers)	Known to occur
Ardenna pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
Ardena pacifica Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur
Eudyptula minor Little Penguin [1085]	Foraging (provisioning young)	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Breeding	Known to occur
Fregata minor Greater Frigatebird [1013]	Breeding	Known to occur
Hydroprogne caspia Caspian Tern [808]	Foraging (provisioning young)	Known to occur
Larus pacificus Pacific Gull [811]	Foraging (in high numbers)	Former Range
Larus pacificus Pacific Gull [811]	Foraging (in high numbers)	Known to occur
Onychoprion anaethetus Bridled Tern [82845]	Foraging (in high numbers)	Known to occur
Onychoprion fuscata Sooty Tern [82847]	Foraging	Known to occur
Pelagodroma marina White-faced Storm petrel [1016]	Foraging (in high numbers)	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Breeding	Known to occur
Pterodroma macroptera macroptera Great-winged Petrel (macroptera race) [1035]	Foraging (provisioning young)	Known to occur

Scientific Name	Behaviour	Presence
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur
Sterna dougallii Roseate Tern [817]	Breeding	Known to occur
Sterna dougallii Roseate Tern [817]	Foraging	Known to occur
Sterna dougallii Roseate Tern [817]	Foraging (provisioning young)	Known to occur
Sterna dougallii Roseate Tern [817]	Resting	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Breeding	Known to occur
Sternula albifrons sinensis Little Tern [82850]	Resting	Known to occur
Sternula nereis Fairy Tern [82949]	Breeding	Known to occur
Sternula nereis Fairy Tern [82949]	Foraging (in high numbers)	Known to occur
Sula leucogaster Brown Booby [1022]	Breeding	Known to occur
Sula sula Red-footed Booby [1023]	Breeding	Known to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging (in high numbers)	Known to occur

Scientific Name	Behaviour	Presence
Thalasseus bengalensis Lesser Crested Tern [66546]	Breeding	Known to occur
Seals		
Neophoca cinerea Australian Sea Lion [22]	Foraging (male)	Likely to occur
Neophoca cinerea Australian Sea Lion [22]	Foraging (male and female)	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Foraging	Known to occur
Rhincodon typus Whale Shark [66680]	Foraging	Known to occur
Rhincodon typus Whale Shark [66680]	Foraging (high density prey)	Known to occur
Whales		
Balaenoptera musculus Blue and Pygmy Blue Whale [36]	Foraging (abundant food source)	Known to occur
Balaenoptera musculus Blue and Pygmy Blue Whale [36]	Foraging (high density)	Known to occur
Balaenoptera musculus Blue and Pygmy Blue Whale [36]	Foraging (on migration)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging Area (annual high use area)	Known to occur

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Calving	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Migration (south)	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Nursing	Known to occur
Megaptera novaeangliae Humpback Whale [38]	Resting	Known to occur
Physeter macrocephalus Sperm Whale [59]	Foraging (abundant food source)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	29
Listed Migratory Species:	41

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	34
Whales and Other Cetaceans:	38
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	21
Key Ecological Features (Marine):	4
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
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BIRD

Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
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Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Ardeenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardeenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	
Historic			
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place	

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	
Bird			
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	

Scientific Name	Threatened Category	Presence Text
Ardena grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		

Current Scientific Name	Status	Type of Presence
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [\[Resource Information \]](#)

Park Name	Zone & IUCN Categories
Abrolhos	Habitat Protection Zone (IUCN IV)
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
South-west Corner	Multiple Use Zone (IUCN VI)
South-west Corner	National Park Zone (IUCN II)
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)

Extra Information

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Nava-1 Cable System	2001/510	Controlled Action	Completed
Not controlled action			
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters	2017/7891	Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
search for HMAS Sydney	2006/3071	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

Grand Southern Margin 2D Marine Seismic Survey	2008/4573	Referral Decision	Completed
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Key Ecological Features

[\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Naturaliste Plateau	South-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Wallaby Saddle	North-west
Western demersal slope and associated fish communities	South-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		

Scientific Name	Behaviour	Presence
Onychoprion fuscata Sooty Tern [82847]	Foraging	Known to occur
Pelagodroma marina White-faced Storm petrel [1016]	Foraging (in high numbers)	Known to occur
Pterodroma macroptera macroptera Great-winged Petrel (macroptera race) [1035]	Foraging (provisioning young)	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	19
Listed Migratory Species:	34

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	28
Whales and Other Cetaceans:	28
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	3
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	50
Key Ecological Features (Marine):	2
Biologically Important Areas:	2
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant Petrel [1060]

Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]

Endangered

Species or species habitat may occur within area

[Pterodroma mollis](#)

Soft-plumaged Petrel [1036]

Vulnerable

Foraging, feeding or related behaviour likely to occur within area

[Sternula nereis nereis](#)

Australian Fairy Tern [82950]

Vulnerable

Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
SHARK		

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
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Migratory Marine Birds

[Anous stolidus](#)

Common Noddy [825]		Species or species habitat may occur within area
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[Calonectris leucomelas](#)

Streaked Shearwater [1077]		Species or species habitat likely to occur within area
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[Fregata ariel](#)

Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
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[Fregata minor](#)

Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
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[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
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[Phaethon lepturus](#)

White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
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[Thalassarche carteri](#)

Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
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[Thalassarche impavida](#)

Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
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Migratory Marine Species

Scientific Name	Threatened Category	Presence Text
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Reptile		
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Leioselasma czeblukovi as Hydrophis czeblukovi Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area
Whales and Other Cetaceans [Resource Information]		
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Gascoyne	Habitat Protection Zone (IUCN IV)	
Gascoyne	Multiple Use Zone (IUCN VI)	
Gascoyne	National Park Zone (IUCN II)	

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Project Highclere Cable Lay and Operation	2022/09203		Completed
Controlled action			
Develop Jansz-lo deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-	2005/2184	Controlled Action	Post-Approval
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Equus Gas Fields Development Project, Carnarvon Basin	2012/6301	Controlled Action	Completed
Gorgon Gas Development 4th Train Proposal	2011/5942	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
The Scarborough Project - FLNG & assoc subsea infrastructure, Carnarvon Basin	2013/6811	Controlled Action	Post-Approval
Not controlled action			
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Bollinger 2D Seismic Survey 200km North of North West Cape WA	2004/1868	Not Controlled Action	Completed
Cazadores 2D seismic survey	2004/1720	Not Controlled Action	Completed
Controlled Source Electromagnetic Survey	2007/3262	Not Controlled Action	Completed
Hess Exploration Drilling Programme	2007/3566	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Jansz-2 and 3 Appraisal Wells	2002/754	Not Controlled Action	Completed
Project Highclere Geophysical Survey	2021/9023	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Not controlled action (particular manner)			
2D marine seismic survey	2012/6296	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey	2008/4281	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Survey in Permit Areas WA-15-R, WA-18-R, WA-205-P, WA-253-P, WA-267-P and WA-268-P	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
3D marine seismic survey over petroleum title WA-268-P	2007/3458	Not Controlled Action (Particular Manner)	Post-Approval
3D Marine Seismic Surveys - Contos CT-13 & Supertubes CT-13, offshore WA	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic survey	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
Agrippina 3D Seismic Marine Survey	2009/5212	Not Controlled Action (Particular Manner)	Post-Approval
Aperio 3D Marine Seismic Survey, WA	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Bonaventure 3D seismic survey	2006/2514	Not Controlled Action (Particular Manner)	Post-Approval
CGGVERITAS 2010 2D Seismic Survey	2010/5714	Not Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		(Particular Manner)	
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Drilling Program	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Drilling 35-40 offshore exploration wells in deep water	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
Eendracht Multi-Client 3D Marine Seismic Survey	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
Exmouth West 2D Marine Seismic Survey	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
Foxhound 3D Non-Exclusive Marine Seismic Survey	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
Geco Eagle 3D Marine Seismic Survey	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
Glencoe 3D Marine Seismic Survey WA-390-P	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
Guacamole 2D Marine Seismic Survey	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
Honeycombs MC3D Marine Seismic Survey	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Leopard 2D marine seismic survey	2005/2290	Not Controlled Action (Particular Manner)	Post-Approval
Lion 2D Marine Seismic Survey	2007/3777	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
Sovereign 3D Marine Seismic Survey	2011/5861	Not Controlled Action (Particular Manner)	Post-Approval
Warramunga Non-Inclusive 3D Seismic Survey	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
3D Seismic Survey	2008/4219	Referral Decision	Completed
Rose 3D Seismic acquisition survey	2008/4220	Referral Decision	Completed

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	North-west
Exmouth Plateau	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	19
Listed Migratory Species:	34

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	63
Whales and Other Cetaceans:	26
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	3
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	25
Key Ecological Features (Marine):	2
Biologically Important Areas:	5
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Anous tenuirostris melanops](#)

Australian Lesser Noddy [26000]

Vulnerable

Species or species habitat may occur within area

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847]

Critically Endangered

Species or species habitat may occur within area

[Papasula abbotti](#)

Abbott's Booby [59297]

Endangered

Species or species habitat may occur within area

[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]

Endangered

Species or species habitat may occur within area

FISH

Scientific Name	Threatened Category	Presence Text
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Congregation or aggregation known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Congregation or aggregation known to occur within area
Fish		
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Leioselasma czeblukovi as Hydrophis czeblukovi Fine-spined Seasnake, Geometrical Seasnake [87374]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [\[Resource Information \]](#)

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	
Argo-Rowley Terrace	Special Purpose Zone (Trawl) (IUCN VI)	

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Browse to North West Shelf Development, Indian Ocean, WA	2018/8319		Approval
Controlled action			
Development of Browse Basin Gas Fields (Upstream)	2008/4111	Controlled Action	Completed
Not controlled action			
Cazadores 2D seismic survey	2004/1720	Not Controlled Action	Completed
Controlled Source Electromagnetic Survey	2007/3262	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
WA-295-P Kerr-McGee Exploration Wells	2001/152	Not Controlled Action	Completed
Not controlled action (particular manner)			
3D Marine Seismic Survey (WA-482-P, WA-363-P), WA	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Klimt 2D Marine Seismic Survey	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
Mariner Non-Exclusive 2D Seismic Survey	2011/6172	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Canning Multi Client 2D Marine Seismic Survey	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
Offshore Fibre Optic Cable Network Construction & Operation, Port Hedland WA to Darwin NT	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
Outer Canning exploration drilling program off NW coast of WA	2012/6618	Not Controlled Action (Particular Manner)	Post-Approval
Repsol 3d & 2D Marine Seismic Survey	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
Rose 3D Seismic Program	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Zeemeermin MC3D seismic survey, Browse Basin, Offshore WA	2009/5023	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision			
3D Seismic Survey	2008/4219	Referral Decision	Completed
Rose 3D Seismic acquisition survey	2008/4220	Referral Decision	Completed

Key Ecological Features [[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Continental Slope Demersal Fish Communities	North-west
Exmouth Plateau	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
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Seabirds

[Phaethon lepturus](#)

White-tailed Tropicbird [1014] Breeding Known to occur

[Sternula albifrons sinensis](#)

Little Tern [82850] Resting Known to occur

Sharks

[Rhincodon typus](#)

Whale Shark [66680] Foraging Known to occur

Whales

[Balaenoptera musculus brevicauda](#)

Pygmy Blue Whale [81317] Distribution Known to occur

[Balaenoptera musculus brevicauda](#)

Pygmy Blue Whale [81317] Migration Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	7
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	36
Listed Migratory Species:	42

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	88
Commonwealth Heritage Places:	21
Listed Marine Species:	76
Whales and Other Cetaceans:	25
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	2
Australian Marine Parks:	6
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	3
EPBC Act Referrals:	94
Key Ecological Features (Marine):	1
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Hosnies spring	Within Ramsar site
Pulu keeling national park	Within Ramsar site
The dales	Within Ramsar site

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
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BIRD

[Accipiter hiogaster natalis](#)

Christmas Island Goshawk [82408]	Endangered	Species or species habitat known to occur within area
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[Anous tenuirostris melanops](#)

Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
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Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Chalcophaps indica natalis Christmas Island Emerald Dove, Emerald Dove (Christmas Island) [67030]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Hypotaenidia philippensis andrewsi Buff-banded Rail (Cocos (Keeling) Islands), Ayam Hutan [88994]	Endangered	Species or species habitat known to occur within area
Ninox natalis Christmas Island Hawk-Owl, Christmas Boobook [66671]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat known to occur within area
Turdus poliocephalus erythropleurus Christmas Island Thrush [67122]	Endangered	Species or species habitat likely to occur within area

FISH

Scientific Name	Threatened Category	Presence Text
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Crocidura trichura Christmas Island Shrew [86568]	Critically Endangered	Species or species habitat likely to occur within area
Pteropus natalis Christmas Island Flying-fox, Christmas Island Fruit-bat [87611]	Critically Endangered	Species or species habitat known to occur within area
PLANT		
Asplenium listeri Christmas Island Spleenwort [65865]	Critically Endangered	Species or species habitat known to occur within area
Pneumatopteris truncata fern [68812]	Critically Endangered	Species or species habitat known to occur within area
Tectaria devexa Cave Fern [14767]	Endangered	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Cryptoblepharus egeriae Christmas Island Blue-tailed Skink, Blue-tailed Snake-eyed Skink [1526]	Critically Endangered	Species or species habitat likely to occur within area
Cyrtodactylus sadleiri Christmas Island Giant Gecko [86865]	Endangered	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Lepidodactylus listeri Christmas Island Gecko, Lister's Gecko [1711]	Critically Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Ramphotyphlops exocoeti Christmas Island Blind Snake, Christmas Island Pink Blind Snake [1262]	Vulnerable	Species or species habitat likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
Listed Migratory Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area

Migratory Marine Species

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat known to occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Environment and Heritage	

Commonwealth Land Name	State
Commonwealth Land - Christmas Island National Park [94105]	CI
Commonwealth Land - Christmas Island National Park [94103]	CI
Commonwealth Land - Christmas Island National Park [94101]	CI
Commonwealth Land - Christmas Island National Park [94102]	CI
Commonwealth Land - Christmas Island National Park [94104]	CI
Commonwealth Land - Pulu Keeling National Park [95001]	CKI
Commonwealth Land - Pulu Keeling National Park [95002]	CKI
Unknown	
Commonwealth Land - [94236]	CI
Commonwealth Land - [94234]	CI
Commonwealth Land - [94235]	CI
Commonwealth Land - [94238]	CI
Commonwealth Land - [94233]	CI
Commonwealth Land - [94230]	CI
Commonwealth Land - [94245]	CI
Commonwealth Land - [94239]	CI
Commonwealth Land - [94240]	CI
Commonwealth Land - [94237]	CI
Commonwealth Land - [94241]	CI
Commonwealth Land - [94246]	CI
Commonwealth Land - [96001]	CKI
Commonwealth Land - [94247]	CI
Commonwealth Land - [94243]	CI
Commonwealth Land - [94242]	CI
Commonwealth Land - [94268]	CI
Commonwealth Land - [94261]	CI
Commonwealth Land - [94269]	CI

Commonwealth Land Name	State
Commonwealth Land - [94262]	CI
Commonwealth Land - [94265]	CI
Commonwealth Land - [94260]	CI
Commonwealth Land - [94263]	CI
Commonwealth Land - [94266]	CI
Commonwealth Land - [94208]	CI
Commonwealth Land - [94209]	CI
Commonwealth Land - [94264]	CI
Commonwealth Land - [94219]	CI
Commonwealth Land - [94267]	CI
Commonwealth Land - [94244]	CI
Commonwealth Land - [94249]	CI
Commonwealth Land - [94248]	CI
Commonwealth Land - [94225]	CI
Commonwealth Land - [94224]	CI
Commonwealth Land - [94227]	CI
Commonwealth Land - [94226]	CI
Commonwealth Land - [94221]	CI
Commonwealth Land - [94220]	CI
Commonwealth Land - [94223]	CI
Commonwealth Land - [94222]	CI
Commonwealth Land - [94229]	CI
Commonwealth Land - [94231]	CI
Commonwealth Land - [94228]	CI
Commonwealth Land - [94276]	CI
Commonwealth Land - [94207]	CI
Commonwealth Land - [94206]	CI

Commonwealth Land Name	State
Commonwealth Land - [94205]	CI
Commonwealth Land - [94204]	CI
Commonwealth Land - [94202]	CI
Commonwealth Land - [94201]	CI
Commonwealth Land - [94278]	CI
Commonwealth Land - [94203]	CI
Commonwealth Land - [94270]	CI
Commonwealth Land - [94273]	CI
Commonwealth Land - [94279]	CI
Commonwealth Land - [94271]	CI
Commonwealth Land - [94274]	CI
Commonwealth Land - [94277]	CI
Commonwealth Land - [94272]	CI
Commonwealth Land - [94275]	CI
Commonwealth Land - [94280]	CI
Commonwealth Land - [94232]	CI
Commonwealth Land - [94216]	CI
Commonwealth Land - [94215]	CI
Commonwealth Land - [94214]	CI
Commonwealth Land - [94218]	CI
Commonwealth Land - [94212]	CI
Commonwealth Land - [94211]	CI
Commonwealth Land - [94210]	CI
Commonwealth Land - [94217]	CI
Commonwealth Land - [94250]	CI
Commonwealth Land - [94259]	CI
Commonwealth Land - [94252]	CI

Commonwealth Land Name	State
Commonwealth Land - [94251]	CI
Commonwealth Land - [94254]	CI
Commonwealth Land - [94253]	CI
Commonwealth Land - [94256]	CI
Commonwealth Land - [94255]	CI
Commonwealth Land - [94258]	CI
Commonwealth Land - [94257]	CI
Commonwealth Land - [94213]	CI

Commonwealth Heritage Places [[Resource Information](#)]

Name	State	Status
Historic		
Administrators House Precinct	EXT	Listed place
Bungalow 702	EXT	Listed place
Captain Ballards Grave	EXT	Listed place
Drumsite Industrial Area	EXT	Listed place
Early Settlers Graves	EXT	Listed place
Home Island Cemetery	EXT	Listed place
Home Island Foreshore	EXT	Listed place
Home Island Industrial Precinct	EXT	Listed place
Industrial and Administrative Group	EXT	Listed place
Malay Kampong Group	EXT	Listed place
Malay Kampong Precinct	EXT	Listed place
Oceania House and Surrounds	EXT	Listed place
Old Co-op Shop (Canteen)	EXT	Listed place
Phosphate Hill Historic Area	EXT	Listed place
Poon Saan Group	EXT	Listed place
Settlement Christmas Island	EXT	Listed place
Six Inch Guns	EXT	Listed place

Name	State	Status
Slipway and Tank	EXT	Listed place
South Point Settlement Remains	EXT	Listed place
Natural		
Christmas Island Natural Areas	EXT	Listed place
North Keeling Island	EXT	Listed place

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text

Bird		
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Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Fish		
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys sculptus Sculptured Pipefish [66197]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Cosmocampus maxweberi Maxweber's Pipefish [66209]		Species or species habitat may occur within area
Doryrhamphus baldwini Redstripe Pipefish [66718]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus macrorhynchus Whiskered Pipefish, Ornate Pipefish [66222]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus mataafae Samoan Pipefish [66223]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippichthys spicifer Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Leioselasma coggeri as Hydrophis coggeri Black-headed Sea Snake, Slender-necked Seasnake [87373]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Commonwealth Reserves Terrestrial			[Resource Information]
Name	State	Type	
Christmas Island	EXT	National Park (Commonwealth)	
Pulu Keeling	EXT	National Park (Commonwealth)	

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Christmas Island	Habitat Protection Zone (IUCN IV)	
Cocos (Keeling) Islands	Habitat Protection Zone (IUCN IV)	
Christmas Island	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	

Habitat Critical to the Survival of Marine Turtles		
Scientific Name	Behaviour	Presence
Dec - Jan		

Scientific Name	Behaviour	Presence
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

Nationally Important Wetlands		[Resource Information]
Wetland Name		State
"The Dales", Christmas Island		EXT
Hosine's Spring, Christmas Island		EXT
Pulu Keeling National Park		EXT

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	
Controlled action				
Breeding, husbandry, slaughter and sale of goats	2004/1895	Controlled Action	Completed	
Christmas Island Airport Expansion	2001/434	Controlled Action	Post-Approval	
Christmas Island Port Facility	2001/435	Controlled Action	Post-Approval	
Construction of mobile phone tower	2002/694	Controlled Action	Completed	
Cultural Appearance Upgrade of the Chinese Literary Association Building	2007/3568	Controlled Action	Completed	
East Christmas Island Phosphate Mines (9 sites)	2001/487	Controlled Action	Completed	
Eco quad tours for West Island visitors and tourists	2010/5749	Controlled Action	Completed	
Exploration for Mineable Phosphate, Christmas Island	2000/43	Controlled Action	Completed	
Home Island slipway & access channel from Home Island Port Facility to Directio	2009/4969	Controlled Action	Completed	

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Lily Beach Recreational Facilities	2001/395	Controlled Action	Post-Approval
Lily Beach Rock Pool Development	2001/400	Controlled Action	Completed
Nava-1 Cable System	2001/510	Controlled Action	Completed
Phosphate Mining in South Point Christmas Island	2012/6653	Controlled Action	Post-Approval
Proposed exploration drilling programme for Christmas Island	2016/7779	Controlled Action	Completed
Public Ferry Hovercraft Operation	2003/1239	Controlled Action	Post-Approval
Red-footed booby bird harvest	2002/844	Controlled Action	Referral Decision
Road Upgrade/Construction between Lily Beach Road and Port Faci	2001/436	Controlled Action	Post-Approval
Salvage, transport and processing of phosphate resource with extended airport si	2003/1217	Controlled Action	Post-Approval
Yellow Crazy Ant Biological Control	2013/6836	Controlled Action	Post-Approval
Not controlled action			
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed
96-108 Gaze Road - Residential upgrade	2006/2632	Not Controlled Action	Completed
Aerial Baiting, Yellow Crazy Ant Supercolonies, Christmas Island, WA	2019/8492	Not Controlled Action	Completed
Boat Ramp Construction	2001/237	Not Controlled Action	Completed
Buffett Close Residential Development	2004/1887	Not Controlled Action	Completed
Building of a carport adjacent to residential house	2004/1538	Not Controlled Action	Completed
Christmas Island/Construction of a double storey shed/carport at MQ387 Gaze Road	2004/1561	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Christmas Island Fuel Consolidation Project, Christmas Island	2012/6454	Not Controlled Action	Completed
Cocos (Keeling) Islands Maintenance Dredging Home Island Slipway Redevelopment, Cocos (Keeling) Isla	2014/7140	Not Controlled Action	Completed
Community Recreation Centre	2003/1279	Not Controlled Action	Completed
courtyard shower & handbasin facilities	2006/2803	Not Controlled Action	Completed
Dwelling demolition, maintenance and carpark/carport/storage shed works	2004/1837	Not Controlled Action	Completed
Extension of a Masonary Brick Wall adjacent to the Poon Saan Club by 500 mm	2004/1564	Not Controlled Action	Completed
Flying Fish Cove Christmas Island Boat Ramp Maintenance	2021/8924	Not Controlled Action	Completed
Flying Fish Cove Landslide Mitigation Project	2020/8616	Not Controlled Action	Completed
Garage and Office Facilities	2004/1919	Not Controlled Action	Completed
Housing and Garden Maintenance Works	2004/1487	Not Controlled Action	Completed
Hydroponics Research Program	2007/3338	Not Controlled Action	Completed
Identification of unmarked grave, exhumation/identification of remains which may belong to a sailor	2006/2992	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infrasound Monitoring Station	2007/3390	Not Controlled Action	Completed
Installation of a desalination plant and associated infrastructure	2013/6833	Not Controlled Action	Completed
Internal and external modifications Lot 1014 Gaze Road	2004/1807	Not Controlled Action	Completed
Light Industrial Subdivision Development	2004/1799	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lot 1056 Extensions and Alterations	2004/1801	Not Controlled Action	Completed
Maintenance of Tai Jin House, Smith Point	2009/4933	Not Controlled Action	Completed
Mobile Radio Communications System Upgrade	2002/718	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Placement of bitumen/ concrete on rail sections of heritage listed incline, Christmas Island	2013/7009	Not Controlled Action	Completed
Power Station Diesel Generator Replacement	2009/4685	Not Controlled Action	Completed
Proposed sale or lease of Crown land, 11 lots, Christmas Island	2018/8220	Not Controlled Action	Completed
Realignment of Gaze Road Service Road and Gaze Road Junction	2004/1735	Not Controlled Action	Completed
Refurbishment and Extension of Seaview Lodge	2012/6353	Not Controlled Action	Completed
renovate free-standing servant's quarters	2006/2811	Not Controlled Action	Completed
Replacement of deteriorating flat roof at rear of Mosque and extending side verandahs, Christmas Is	2013/6851	Not Controlled Action	Completed
Residential upgrade, 2 Coconut Grove	2007/3295	Not Controlled Action	Completed
Stormwater Remediation Project, Christmas Island	2019/8467	Not Controlled Action	Completed
Subdivision of Lot 571 on DP 26701	2008/4230	Not Controlled Action	Completed
Subdivision of Part 7 of Lot 1014	2009/4851	Not Controlled Action	Completed
Supermarket Extensions	2006/2515	Not Controlled Action	Completed
upgrade of House 11, William Keeling Crescent	2005/2447	Not Controlled Action	Completed
Upgrade of Residence, Coconut Grove	2006/2728	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Verandah Extension to Existing Breezeway Unit, Gaze Road	2005/1970	Not Controlled Action	Completed
Not controlled action (particular manner)			
2 (3D) Marine Seismic Surveys	2009/4994	Not Controlled Action (Particular Manner)	Completed
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
Addition of Verandah to Block of Four Units	2005/2315	Not Controlled Action (Particular Manner)	Post-Approval
Aerial Baiting of Yellow Crazy Ants	2012/6438	Not Controlled Action (Particular Manner)	Post-Approval
Asbestos Removal from Commonwealth Owned Assests including Commonwealth Heritage	2009/4873	Not Controlled Action (Particular Manner)	Post-Approval
Asbestos Removal from Various Buildings and Sites	2009/4887	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Baiting Efficacy Trial of Feral Cat Bait and PAPP Toxicant	2008/4383	Not Controlled Action (Particular Manner)	Post-Approval
Cartier East and Cartier West 3D Marine Seismic Surveys	2009/5230	Not Controlled Action (Particular Manner)	Post-Approval
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Commonwealth Marine/Flying Fish Cove Jetty Extension	2012/6675	Not Controlled Action (Particular Manner)	Post-Approval
Construction of a Power Station	2003/1177	Not Controlled Action (Particular Manner)	Post-Approval
Crazy Ant Aerial Baiting Control Program	2002/722	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Development of a small 25 bed, tented Eco Resort	2012/6284	Not Controlled Action (Particular Manner)	Post-Approval
Helicopter baiting of exotic yellow crazy ant supercolonies, Christmas Island, Indian Ocean	2009/5016	Not Controlled Action (Particular Manner)	Post-Approval
Home Island Slipway Redevelopment	2010/5511	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
New Housing Program	2011/6056	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Swimming Pool modification	2007/3312	Not Controlled Action (Particular Manner)	Post-Approval
Translocation of T.gigas for breeding and release	2005/1958	Not Controlled Action (Particular Manner)	Post-Approval
Trials of a bait delivery system for the control of Yellow Crazy Ants	2009/4763	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Water supply upgrade	2005/2269	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

Alterations and Improvements to existing residence at Lot 3015 Gaze Rd, Christmas Island	2009/5039	Referral Decision	Completed
Rocky Point Dwelling Redevelopment	2005/2203	Referral Decision	Referral Decision

Key Ecological Features

[\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Continental Slope Demersal Fish Communities	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
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Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Breeding	Known to occur
Fregata minor Greater Frigatebird [1013]	Breeding	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Breeding	Known to occur
Sula leucogaster Brown Booby [1022]	Breeding	Known to occur
Sula sula Red-footed Booby [1023]	Breeding	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	7
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	36
Listed Migratory Species:	42

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	88
Commonwealth Heritage Places:	21
Listed Marine Species:	76
Whales and Other Cetaceans:	25
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	2
Australian Marine Parks:	6
Habitat Critical to the Survival of Marine Turtles:	1

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	3
EPBC Act Referrals:	94
Key Ecological Features (Marine):	1
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [\[Resource Information \]](#)

Ramsar Site Name	Proximity
Hosnies spring	Within Ramsar site
Pulu keeling national park	Within Ramsar site
The dales	Within Ramsar site

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
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BIRD

[Accipiter hiogaster natalis](#)

Christmas Island Goshawk [82408]	Endangered	Species or species habitat known to occur within area
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[Anous tenuirostris melanops](#)

Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
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Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Chalcophaps indica natalis Christmas Island Emerald Dove, Emerald Dove (Christmas Island) [67030]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Hypotaenidia philippensis andrewsi Buff-banded Rail (Cocos (Keeling) Islands), Ayam Hutan [88994]	Endangered	Species or species habitat known to occur within area
Ninox natalis Christmas Island Hawk-Owl, Christmas Boobook [66671]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat known to occur within area
Turdus poliocephalus erythropleurus Christmas Island Thrush [67122]	Endangered	Species or species habitat likely to occur within area

FISH

Scientific Name	Threatened Category	Presence Text
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Breeding known to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Crocidura trichura Christmas Island Shrew [86568]	Critically Endangered	Species or species habitat likely to occur within area
Pteropus natalis Christmas Island Flying-fox, Christmas Island Fruit-bat [87611]	Critically Endangered	Species or species habitat known to occur within area
PLANT		
Asplenium listeri Christmas Island Spleenwort [65865]	Critically Endangered	Species or species habitat known to occur within area
Pneumatopteris truncata fern [68812]	Critically Endangered	Species or species habitat known to occur within area
Tectaria devexa Cave Fern [14767]	Endangered	Species or species habitat likely to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Cryptoblepharus egeriae Christmas Island Blue-tailed Skink, Blue-tailed Snake-eyed Skink [1526]	Critically Endangered	Species or species habitat likely to occur within area
Cyrtodactylus sadleiri Christmas Island Giant Gecko [86865]	Endangered	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Lepidodactylus listeri Christmas Island Gecko, Lister's Gecko [1711]	Critically Endangered	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Ramphotyphlops exocoeti Christmas Island Blind Snake, Christmas Island Pink Blind Snake [1262]	Vulnerable	Species or species habitat likely to occur within area
SHARK		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area
Listed Migratory Species [Resource Information]		
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area

Migratory Marine Species

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat known to occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name
Environment and Heritage

State

Commonwealth Land Name	State
Commonwealth Land - Christmas Island National Park [94105]	CI
Commonwealth Land - Christmas Island National Park [94103]	CI
Commonwealth Land - Christmas Island National Park [94101]	CI
Commonwealth Land - Christmas Island National Park [94102]	CI
Commonwealth Land - Christmas Island National Park [94104]	CI
Commonwealth Land - Pulu Keeling National Park [95002]	CKI
Commonwealth Land - Pulu Keeling National Park [95001]	CKI
Unknown	
Commonwealth Land - [94234]	CI
Commonwealth Land - [94235]	CI
Commonwealth Land - [94238]	CI
Commonwealth Land - [94239]	CI
Commonwealth Land - [94230]	CI
Commonwealth Land - [94236]	CI
Commonwealth Land - [94245]	CI
Commonwealth Land - [94237]	CI
Commonwealth Land - [94240]	CI
Commonwealth Land - [94241]	CI
Commonwealth Land - [96001]	CKI
Commonwealth Land - [94246]	CI
Commonwealth Land - [94269]	CI
Commonwealth Land - [94247]	CI
Commonwealth Land - [94243]	CI
Commonwealth Land - [94242]	CI
Commonwealth Land - [94261]	CI
Commonwealth Land - [94260]	CI
Commonwealth Land - [94268]	CI

Commonwealth Land Name	State
Commonwealth Land - [94265]	CI
Commonwealth Land - [94264]	CI
Commonwealth Land - [94263]	CI
Commonwealth Land - [94262]	CI
Commonwealth Land - [94225]	CI
Commonwealth Land - [94207]	CI
Commonwealth Land - [94208]	CI
Commonwealth Land - [94267]	CI
Commonwealth Land - [94209]	CI
Commonwealth Land - [94266]	CI
Commonwealth Land - [94244]	CI
Commonwealth Land - [94249]	CI
Commonwealth Land - [94248]	CI
Commonwealth Land - [94224]	CI
Commonwealth Land - [94227]	CI
Commonwealth Land - [94226]	CI
Commonwealth Land - [94221]	CI
Commonwealth Land - [94220]	CI
Commonwealth Land - [94223]	CI
Commonwealth Land - [94222]	CI
Commonwealth Land - [94229]	CI
Commonwealth Land - [94228]	CI
Commonwealth Land - [94276]	CI
Commonwealth Land - [94250]	CI
Commonwealth Land - [94231]	CI
Commonwealth Land - [94277]	CI
Commonwealth Land - [94206]	CI

Commonwealth Land Name	State
Commonwealth Land - [94205]	CI
Commonwealth Land - [94204]	CI
Commonwealth Land - [94202]	CI
Commonwealth Land - [94201]	CI
Commonwealth Land - [94203]	CI
Commonwealth Land - [94218]	CI
Commonwealth Land - [94271]	CI
Commonwealth Land - [94270]	CI
Commonwealth Land - [94280]	CI
Commonwealth Land - [94279]	CI
Commonwealth Land - [94275]	CI
Commonwealth Land - [94274]	CI
Commonwealth Land - [94273]	CI
Commonwealth Land - [94272]	CI
Commonwealth Land - [94232]	CI
Commonwealth Land - [94233]	CI
Commonwealth Land - [94216]	CI
Commonwealth Land - [94215]	CI
Commonwealth Land - [94214]	CI
Commonwealth Land - [94219]	CI
Commonwealth Land - [94212]	CI
Commonwealth Land - [94211]	CI
Commonwealth Land - [94210]	CI
Commonwealth Land - [94217]	CI
Commonwealth Land - [94251]	CI
Commonwealth Land - [94278]	CI
Commonwealth Land - [94253]	CI

Commonwealth Land Name	State
Commonwealth Land - [94252]	CI
Commonwealth Land - [94255]	CI
Commonwealth Land - [94254]	CI
Commonwealth Land - [94257]	CI
Commonwealth Land - [94256]	CI
Commonwealth Land - [94259]	CI
Commonwealth Land - [94258]	CI
Commonwealth Land - [94213]	CI

Commonwealth Heritage Places [[Resource Information](#)]

Name	State	Status
Historic		
Administrators House Precinct	EXT	Listed place
Bungalow 702	EXT	Listed place
Captain Ballards Grave	EXT	Listed place
Drumsite Industrial Area	EXT	Listed place
Early Settlers Graves	EXT	Listed place
Home Island Cemetery	EXT	Listed place
Home Island Foreshore	EXT	Listed place
Home Island Industrial Precinct	EXT	Listed place
Industrial and Administrative Group	EXT	Listed place
Malay Kampong Group	EXT	Listed place
Malay Kampong Precinct	EXT	Listed place
Oceania House and Surrounds	EXT	Listed place
Old Co-op Shop (Canteen)	EXT	Listed place
Phosphate Hill Historic Area	EXT	Listed place
Poon Saan Group	EXT	Listed place
Settlement Christmas Island	EXT	Listed place
Six Inch Guns	EXT	Listed place

Name	State	Status
Slipway and Tank	EXT	Listed place
South Point Settlement Remains	EXT	Listed place
Natural		
Christmas Island Natural Areas	EXT	Listed place
North Keeling Island	EXT	Listed place

Listed Marine Species	[Resource Information]	
Scientific Name	Threatened Category	Presence Text

Bird		
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Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Cecropis daurica as Hirundo daurica Red-rumped Swallow [80610]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Breeding known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat known to occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phaethon lepturus White-tailed Tropicbird [1014]		Breeding known to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat known to occur within area
Phaethon rubricauda Red-tailed Tropicbird [994]		Breeding known to occur within area
Sula dactylatra Masked Booby [1021]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Fish		
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys sculptus Sculptured Pipefish [66197]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Cosmocampus maxweberi Maxweber's Pipefish [66209]		Species or species habitat may occur within area
Doryrhamphus baldwini Redstripe Pipefish [66718]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus macrorhynchus Whiskered Pipefish, Ornate Pipefish [66222]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Halicampus mataafae Samoan Pipefish [66223]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippichthys spicifer Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Chitulia ornata as Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [87377]		Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Leioselasma coggeri as Hydrophis coggeri Black-headed Sea Snake, Slender-necked Seasnake [87373]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Commonwealth Reserves Terrestrial			[Resource Information]
Name	State	Type	
Christmas Island	EXT	National Park (Commonwealth)	
Pulu Keeling	EXT	National Park (Commonwealth)	

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Christmas Island	Habitat Protection Zone (IUCN IV)	
Cocos (Keeling) Islands	Habitat Protection Zone (IUCN IV)	
Christmas Island	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	

Habitat Critical to the Survival of Marine Turtles		
Scientific Name	Behaviour	Presence
Dec - Jan		

Scientific Name	Behaviour	Presence
Chelonia mydas Green Turtle [1765]	Nesting	Known to occur

Extra Information

Nationally Important Wetlands [\[Resource Information \]](#)

Wetland Name	State
"The Dales", Christmas Island	EXT
Hosine's Spring, Christmas Island	EXT
Pulu Keeling National Park	EXT

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Breeding, husbandry, slaughter and sale of goats	2004/1895	Controlled Action	Completed
Christmas Island Airport Expansion	2001/434	Controlled Action	Post-Approval
Christmas Island Port Facility	2001/435	Controlled Action	Post-Approval
Construction of mobile phone tower	2002/694	Controlled Action	Completed
Cultural Appearance Upgrade of the Chinese Literary Association Building	2007/3568	Controlled Action	Completed
East Christmas Island Phosphate Mines (9 sites)	2001/487	Controlled Action	Completed
Eco quad tours for West Island visitors and tourists	2010/5749	Controlled Action	Completed
Exploration for Mineable Phosphate, Christmas Island	2000/43	Controlled Action	Completed
Home Island slipway & access channel from Home Island Port Facility to Directio	2009/4969	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Lily Beach Recreational Facilities	2001/395	Controlled Action	Post-Approval
Lily Beach Rock Pool Development	2001/400	Controlled Action	Completed
Nava-1 Cable System	2001/510	Controlled Action	Completed
Phosphate Mining in South Point Christmas Island	2012/6653	Controlled Action	Post-Approval
Proposed exploration drilling programme for Christmas Island	2016/7779	Controlled Action	Completed
Public Ferry Hovercraft Operation	2003/1239	Controlled Action	Post-Approval
Red-footed booby bird harvest	2002/844	Controlled Action	Referral Decision
Road Upgrade/Construction between Lily Beach Road and Port Faci	2001/436	Controlled Action	Post-Approval
Salvage, transport and processing of phosphate resource with extended airport si	2003/1217	Controlled Action	Post-Approval
Yellow Crazy Ant Biological Control	2013/6836	Controlled Action	Post-Approval
Not controlled action			
3D marine seismic survey in WA 314P and WA 315P	2004/1927	Not Controlled Action	Completed
96-108 Gaze Road - Residential upgrade	2006/2632	Not Controlled Action	Completed
Aerial Baiting, Yellow Crazy Ant Supercolonies, Christmas Island, WA	2019/8492	Not Controlled Action	Completed
Boat Ramp Construction	2001/237	Not Controlled Action	Completed
Buffett Close Residential Development	2004/1887	Not Controlled Action	Completed
Building of a carport adjacent to residential house	2004/1538	Not Controlled Action	Completed
Christmas Island/Construction of a double storey shed/carport at MQ387 Gaze Road	2004/1561	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Christmas Island Fuel Consolidation Project, Christmas Island	2012/6454	Not Controlled Action	Completed
Cocos (Keeling) Islands Maintenance Dredging Home Island Slipway Redevelopment, Cocos (Keeling) Isla	2014/7140	Not Controlled Action	Completed
Community Recreation Centre	2003/1279	Not Controlled Action	Completed
courtyard shower & handbasin facilities	2006/2803	Not Controlled Action	Completed
Dwelling demolition, maintenance and carpark/carport/storage shed works	2004/1837	Not Controlled Action	Completed
Extension of a Masonary Brick Wall adjacent to the Poon Saan Club by 500 mm	2004/1564	Not Controlled Action	Completed
Flying Fish Cove Christmas Island Boat Ramp Maintenance	2021/8924	Not Controlled Action	Completed
Flying Fish Cove Landslide Mitigation Project	2020/8616	Not Controlled Action	Completed
Garage and Office Facilities	2004/1919	Not Controlled Action	Completed
Housing and Garden Maintenance Works	2004/1487	Not Controlled Action	Completed
Hydroponics Research Program	2007/3338	Not Controlled Action	Completed
Identification of unmarked grave, exhumation/identification of remains which may belong to a sailor	2006/2992	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Infrasound Monitoring Station	2007/3390	Not Controlled Action	Completed
Installation of a desalination plant and associated infrastructure	2013/6833	Not Controlled Action	Completed
Internal and external modifications Lot 1014 Gaze Road	2004/1807	Not Controlled Action	Completed
Light Industrial Subdivision Development	2004/1799	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Lot 1056 Extensions and Alterations	2004/1801	Not Controlled Action	Completed
Maintenance of Tai Jin House, Smith Point	2009/4933	Not Controlled Action	Completed
Mobile Radio Communications System Upgrade	2002/718	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Placement of bitumen/ concrete on rail sections of heritage listed incline, Christmas Island	2013/7009	Not Controlled Action	Completed
Power Station Diesel Generator Replacement	2009/4685	Not Controlled Action	Completed
Proposed sale or lease of Crown land, 11 lots, Christmas Island	2018/8220	Not Controlled Action	Completed
Realignment of Gaze Road Service Road and Gaze Road Junction	2004/1735	Not Controlled Action	Completed
Refurbishment and Extension of Seaview Lodge	2012/6353	Not Controlled Action	Completed
renovate free-standing servant's quarters	2006/2811	Not Controlled Action	Completed
Replacement of deteriorating flat roof at rear of Mosque and extending side verandahs, Christmas Is	2013/6851	Not Controlled Action	Completed
Residential upgrade, 2 Coconut Grove	2007/3295	Not Controlled Action	Completed
Stormwater Remediation Project, Christmas Island	2019/8467	Not Controlled Action	Completed
Subdivision of Lot 571 on DP 26701	2008/4230	Not Controlled Action	Completed
Subdivision of Part 7 of Lot 1014	2009/4851	Not Controlled Action	Completed
Supermarket Extensions	2006/2515	Not Controlled Action	Completed
upgrade of House 11, William Keeling Crescent	2005/2447	Not Controlled Action	Completed
Upgrade of Residence, Coconut Grove	2006/2728	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Verandah Extension to Existing Breezeway Unit, Gaze Road	2005/1970	Not Controlled Action	Completed
Not controlled action (particular manner)			
2 (3D) Marine Seismic Surveys	2009/4994	Not Controlled Action (Particular Manner)	Completed
2D seismic survey in permit areas WA-274P and WA-281P	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
3D Seismic Survey, Browse Basin, WA	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
Addition of Verandah to Block of Four Units	2005/2315	Not Controlled Action (Particular Manner)	Post-Approval
Aerial Baiting of Yellow Crazy Ants	2012/6438	Not Controlled Action (Particular Manner)	Post-Approval
Asbestos Removal from Commonwealth Owned Assests including Commonwealth Heritage	2009/4873	Not Controlled Action (Particular Manner)	Post-Approval
Asbestos Removal from Various Buildings and Sites	2009/4887	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Baiting Efficacy Trial of Feral Cat Bait and PAPP Toxicant	2008/4383	Not Controlled Action (Particular Manner)	Post-Approval
Cartier East and Cartier West 3D Marine Seismic Surveys	2009/5230	Not Controlled Action (Particular Manner)	Post-Approval
Caswell MC3D Marine Seismic Survey	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Commonwealth Marine/Flying Fish Cove Jetty Extension	2012/6675	Not Controlled Action (Particular Manner)	Post-Approval
Construction of a Power Station	2003/1177	Not Controlled Action (Particular Manner)	Post-Approval
Crazy Ant Aerial Baiting Control Program	2002/722	Not Controlled Action (Particular Manner)	Post-Approval
Deep Water Northwest Shelf 2D Seismic Survey	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
Development of a small 25 bed, tented Eco Resort	2012/6284	Not Controlled Action (Particular Manner)	Post-Approval
Helicopter baiting of exotic yellow crazy ant supercolonies, Christmas Island, Indian Ocean	2009/5016	Not Controlled Action (Particular Manner)	Post-Approval
Home Island Slipway Redevelopment	2010/5511	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Kingtree & Ironstone-1 Exploration Wells	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
Kraken, Lusca & Asperus 3D Marine Seismic Survey	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
New Housing Program	2011/6056	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
Swimming Pool modification	2007/3312	Not Controlled Action (Particular Manner)	Post-Approval
Translocation of T.gigas for breeding and release	2005/1958	Not Controlled Action (Particular Manner)	Post-Approval
Trials of a bait delivery system for the control of Yellow Crazy Ants	2009/4763	Not Controlled Action (Particular Manner)	Post-Approval
Vampire 2D Non Exclusive Seismic Survey, WA	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
Water supply upgrade	2005/2269	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

Alterations and Improvements to existing residence at Lot 3015 Gaze Rd, Christmas Island	2009/5039	Referral Decision	Completed
Rocky Point Dwelling Redevelopment	2005/2203	Referral Decision	Referral Decision

Key Ecological Features

[\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Continental Slope Demersal Fish Communities	North-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
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Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Fregata ariel Lesser Frigatebird [1012]	Breeding	Known to occur
Fregata minor Greater Frigatebird [1013]	Breeding	Known to occur
Phaethon lepturus White-tailed Tropicbird [1014]	Breeding	Known to occur
Sula leucogaster Brown Booby [1022]	Breeding	Known to occur
Sula sula Red-footed Booby [1023]	Breeding	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

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Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

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[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	None
Listed Migratory Species:	None

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	None
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	None
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Other Matters Protected by the EPBC Act

Extra Information

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

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This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

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Report created: 11-Sep-2023

[Summary](#)

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[Matters of NES](#)

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[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	16
Listed Migratory Species:	28

Other Matters Protected by the EPBC Act

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A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	25
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	2
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	5
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name

Threatened Category

Presence Text

BIRD

[Calidris canutus](#)

Red Knot, Knot [855]

Endangered

Species or species habitat may occur within area

[Calidris ferruginea](#)

Curlew Sandpiper [856]

Critically Endangered

Species or species habitat may occur within area

[Fregata andrewsi](#)

Christmas Island Frigatebird, Andrew's Frigatebird [1011]

Endangered

Foraging, feeding or related behaviour known to occur within area

[Papasula abbotti](#)

Abbott's Booby [59297]

Endangered

Species or species habitat may occur within area

[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]

Endangered

Species or species habitat likely to occur within area

FISH

[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]

Conservation Dependent

Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
-----------------	---------------------	---------------

MAMMAL

[Balaenoptera borealis](#)

Sei Whale [34]

Vulnerable

Species or species habitat likely to occur within area

[Balaenoptera musculus](#)

Blue Whale [36]

Endangered

Species or species habitat likely to occur within area

[Balaenoptera physalus](#)

Fin Whale [37]

Vulnerable

Species or species habitat likely to occur within area

REPTILE

[Caretta caretta](#)

Loggerhead Turtle [1763]

Endangered

Species or species habitat likely to occur within area

[Chelonia mydas](#)

Green Turtle [1765]

Vulnerable

Species or species habitat likely to occur within area

[Dermochelys coriacea](#)

Leatherback Turtle, Leathery Turtle, Luth [1768]

Endangered

Species or species habitat likely to occur within area

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]

Vulnerable

Species or species habitat likely to occur within area

[Lepidochelys olivacea](#)

Olive Ridley Turtle, Pacific Ridley Turtle [1767]

Endangered

Species or species habitat likely to occur within area

[Natator depressus](#)

Flatback Turtle [59257]

Vulnerable

Species or species habitat likely to occur within area

SHARK

[Carcharodon carcharias](#)

White Shark, Great White Shark [64470]

Vulnerable

Species or species habitat may occur within area

Listed Migratory Species

[\[Resource Information \]](#)

Scientific Name

Threatened Category

Presence Text

Migratory Marine Birds

Scientific Name	Threatened Category	Presence Text
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Foraging, feeding or related behaviour known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Migratory Marine Species		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Fregata andrewsi Christmas Island Frigatebird, Andrew's Frigatebird [1011]	Endangered	Foraging, feeding or related behaviour known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat likely to occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Christmas Island	National Park Zone (IUCN II)	
Cocos (Keeling) Islands	National Park Zone (IUCN II)	

Extra Information

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Nava-1 Cable System	2001/510	Controlled Action	Completed
Not controlled action			
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Not controlled action (particular manner)			
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

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Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 11-Sep-2023

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	3
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	29
Listed Migratory Species:	41

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	34
Whales and Other Cetaceans:	38
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	7
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	21
Key Ecological Features (Marine):	4
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
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BIRD

Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
FISH		
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
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Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places			[Resource Information]
Name	State	Status	
Historic			
HMAS Sydney II and HSK Kormoran Shipwreck Sites	EXT	Listed place	

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	
Bird			
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	

Scientific Name	Threatened Category	Presence Text
Ardena grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat may occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Onychoprion anaethetus as Sterna anaethetus Bridled Tern [82845]		Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Onychoprion fuscatus as Sterna fuscata Sooty Tern [90682]		Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Phaethon lepturus fulvus Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or related behaviour known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat likely to occur within area

Whales and Other Cetaceans		[Resource Information]
Current Scientific Name	Status	Type of Presence
Mammal		

Current Scientific Name	Status	Type of Presence
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia sima Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [\[Resource Information \]](#)

Park Name	Zone & IUCN Categories
Abrolhos	Habitat Protection Zone (IUCN IV)
Carnarvon Canyon	Habitat Protection Zone (IUCN IV)
Gascoyne	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
South-west Corner	Multiple Use Zone (IUCN VI)
South-west Corner	National Park Zone (IUCN II)
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)

Extra Information

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Nava-1 Cable System	2001/510	Controlled Action	Completed
Not controlled action			
APX-West Fibre-optic telecommunications cable system, WA to Singapore	2013/7102	Not Controlled Action	Completed
Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters	2017/7891	Not Controlled Action	Completed
Geo-science Investigations	2005/2069	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
INDIGO West Submarine Telecommunications Cable, WA	2017/8126	Not Controlled Action	Completed
Oman Australia Cable Installation, WA	2021/8922	Not Controlled Action	Completed
Oman Australia Cable - Marine Route Survey	2020/8731	Not Controlled Action	Completed
Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin	2004/1700	Not Controlled Action	Completed
Not controlled action (particular manner)			
2D seismic survey	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval
Acheron Non-Exclusive 2D Seismic Survey	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
Australia to Singapore Fibre Optic Submarine Cable System	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
Grand Southern Margin 2D Marine Seismic Survey	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
Marine reconnaissance survey	2008/4466	Not Controlled Action (Particular Manner)	Post-Approval
Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
search for HMAS Sydney	2006/3071	Not Controlled Action (Particular Manner)	Post-Approval
Westralia SPAN Marine Seismic Survey, WA & NT	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

Grand Southern Margin 2D Marine Seismic Survey	2008/4573	Referral Decision	Completed
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Key Ecological Features

[\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Naturaliste Plateau	South-west
Perth Canyon and adjacent shelf break, and other west coast canyons	South-west
Wallaby Saddle	North-west
Western demersal slope and associated fish communities	South-west

Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		

Scientific Name	Behaviour	Presence
Onychoprion fuscata Sooty Tern [82847]	Foraging	Known to occur
Pelagodroma marina White-faced Storm petrel [1016]	Foraging (in high numbers)	Known to occur
Pterodroma macroptera macroptera Great-winged Petrel (macroptera race) [1035]	Foraging (provisioning young)	Known to occur
Pterodroma mollis Soft-plumaged Petrel [1036]	Foraging (in high numbers)	Known to occur
Puffinus assimilis tunneyi Little Shearwater [59363]	Foraging (in high numbers)	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Migration	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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APPENDIX D CULTURAL HERITAGE SEARCHES

List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

No Aboriginal Cultural Heritage (ACH) Directory in Shapefile - New NY OA. Warning: Search area complex so results may be inaccurate. Contact DPLH for assistance.

Disclaimer

The *Aboriginal Cultural Heritage Act 2021 (Act)* recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported to the ACH Council or exists on the Directory.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at AboriginalHeritage@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

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Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

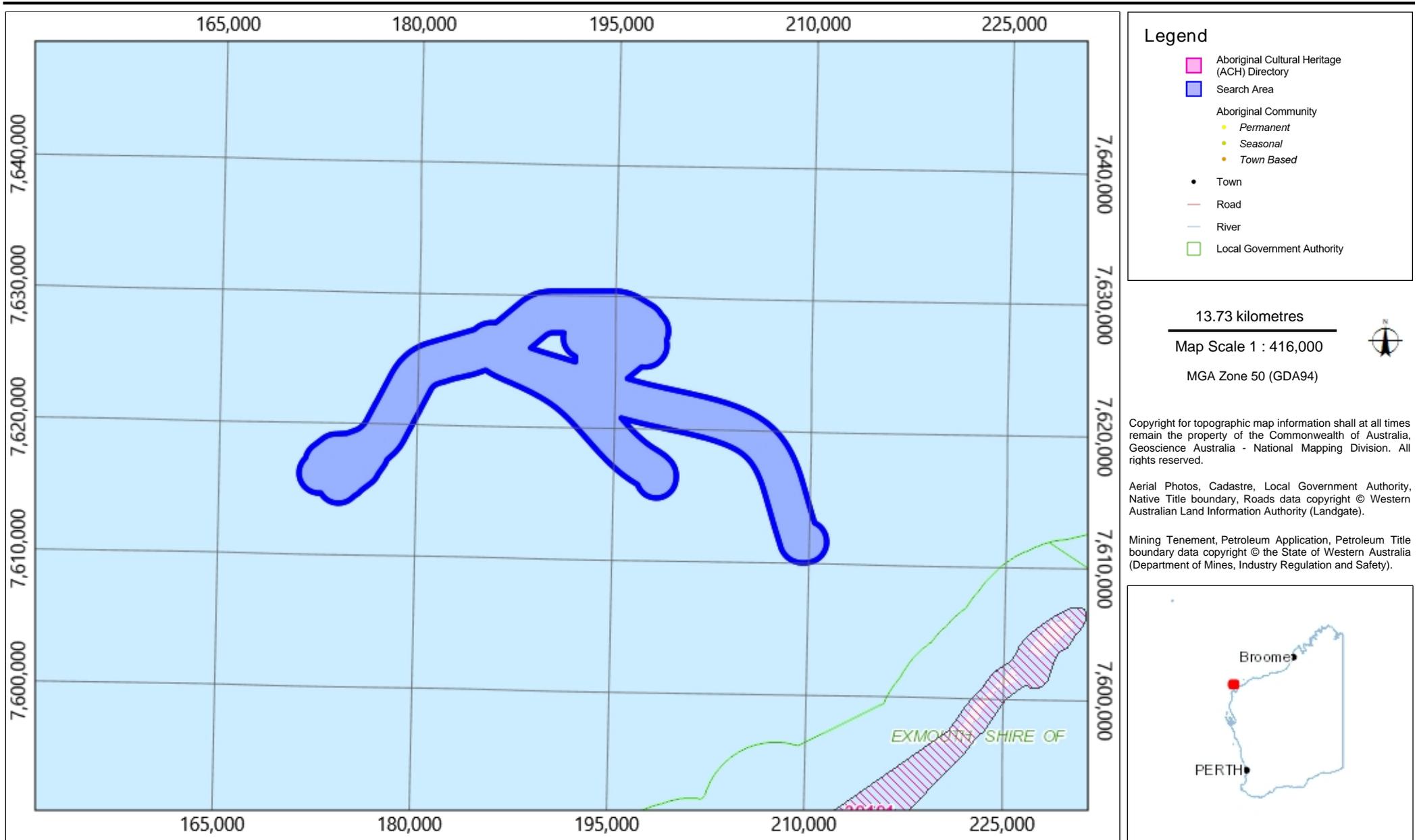
Map was created using ArcGIS software by Esri. ArcGIS and ArcMap are the intellectual property of Esri and are used herein under license. Copyright © Esri. All rights reserved. For more information about Esri software, please visit www.esri.com.

Satellite, Hybrid, Road basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, HERE, DeLorme, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community.

Topographic basemap sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.

Aboriginal Cultural Heritage Inquiry System

Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

105 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_1. Warning: Search area complex so results may be inaccurate. Contact DPLH for assistance.

Disclaimer

The Aboriginal Cultural Heritage Act 2021 (Act) recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether the location and extent of the ACH boundary is considered reliable.
- Boundary Restricted = No: ACH location is shown as accurately as the information submitted allows.
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Culturally Sensitive = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- Culturally Sensitive = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact AboriginalHeritage@dplh.wa.gov.au.
- Culturally Sensitive Nature:
 - No Gender / Initiation Restrictions: Anyone can view the information.
 - Men only: Only males can view restricted information.
 - Women only: Only females can view restricted information.

Status:

- ACH Directory: Aboriginal cultural heritage place or cultural landscape.
- Pending: Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- Cultural Landscape: a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- Place: an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous Aboriginal Heritage Act 1972:

- Registered Site: the place was assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Lodged: Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the Aboriginal Heritage Act 1972.
- Stored Data/Not a Site: The place was assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

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Satellite, Hybrid, Road basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, HERE, DeLorme, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community.

Topographic basemap sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
12176	IRVINE ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Registered Site	K00056
12177	IRVINE ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00057
12178	BATHURST ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00058
12179	BATHURST ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	K00059
12181	UNNAMED ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Registered Site	K00061
12195	WAILALKUNYA, SLATE ISLANDS	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	K00023
12196	LANGAWARRU	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Lodged	K00024
12199	WODANGU	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Artefacts / Scatter; Ritual / Ceremonial; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00027
12230	BARINBAR, SWAN POINT	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial	*Registered Knowledge Holder names available from DPLH	Registered Site	K00005
12387	BOONGINJ-GOON	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Registered Site	K02850
12659	BERNOUILLI ISLAND NORTH	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02548
12660	BERNOUILLI ISLAND NORTHEAST	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02549



Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
12661	DESFONTAINES ISLAND WEST	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02550
12662	DESFONTAINES ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02551
12667	MACLEAY ISLANDS 3	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02556
12668	KING ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02557
12673	DESAIX ISLANDS NORTH	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02562
12677	HEYWOOD ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02566
12702	BUFFON ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02538
12703	DESFONTAINES ISLAND NORTH	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02539
12704	FONTANES ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02540
12705	BIGGE ISLAND	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K02541
12706	BIGGE ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02542
12707	EAST MONTALIVET ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02543

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
12708	KERAUDREN ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02544
12709	MALBY ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02545
12719	DULI COVE CAVES.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Other	*Registered Knowledge Holder names available from DPLH	Lodged	K02502
12720	DULI CAVE.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp; Ritual / Ceremonial; Creation / Dreaming Narrative; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	K02503
12722	DIDJI POINT.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02505
12725	DIDJI WELLS.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	K02508
12726	CASSINI STONE LINE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02509
12727	CASSINI STONE CIRCLES	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02510
12790	BATHURST ISLAND ARRANGEMENT	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K02414
13032	HIGH CLIFFY IS: SHELTER 1.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Camp; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K02172
13033	HIGH CLIFFY IS: STRUCTURE.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Camp; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K02173
13034	HIGH CLIFFY IS: OPEN CAMP.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp	*Registered Knowledge Holder names available from DPLH	Registered Site	K02174

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
13035	HIGH CLIFFY IS: SHELTER 2	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K02175
13036	HIGH CLIFFY IS: SHELTER 3	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K02176
13306	DJADJUG.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Registered Site	K01913
13307	IRVINE ISLAND: ROCKSHELTER	Yes	No	Yes	Men only	ACH Directory	Place	Creation / Dreaming Narrative; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K01914
13308	IRVINE ISLAND: WATERHOLE.	Yes	No	Yes	Men only	ACH Directory	Place	Water Source	*Registered Knowledge Holder names available from DPLH	Lodged	K01915
13309	IRVINE ISLAND: BURIAL 1	Yes	No	Yes	Men only	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	K01916
13310	IRVINE ISLAND: BURIAL 2	Yes	No	Yes	Men only	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	K01917
13311	WINDJIMIR.	Yes	No	Yes	Men only	ACH Directory	Place	Burial; Camp; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	K01918
13312	IRVINE ISLAND: STONEMOUND 1	Yes	No	Yes	Men only	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K01919
13313	IRVINE ISLAND: STONEMOUND 2	Yes	No	Yes	Men only	ACH Directory	Place	Burial; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K01920
13314	IRVINE ISLAND: CAMP 1.	Yes	No	Yes	Men only	ACH Directory	Place	Camp; Hunting Place	*Registered Knowledge Holder names available from DPLH	Registered Site	K01921
13315	IRVINE ISLAND: CAMP 2.	Yes	No	Yes	Men only	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Registered Site	K01922

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
13316	MAROLORR.	Yes	No	Yes	Men only	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Registered Site	K01923
13317	IRVINE ISLAND: MYTH	Yes	No	Yes	Men only	ACH Directory	Place	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Registered Site	K01924
13318	IRVINE ISLAND: DEPRESSIONS	Yes	No	Yes	Men only	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Lodged	K01925
13341	SLATE ISLAND	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Lodged	K01891
13389	IRVINE ISLAND: MIDDEN	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Midden; Other	*Registered Knowledge Holder names available from DPLH	Registered Site	K01778
13390	IRVINE ISLAND: BARK BURIAL	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	K01779
13394	MACLEAY ISLANDS 2.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Traditional Structure; Other; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	K01783
13462	DESAIX ISLANDS SOUTH	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K01691
13466	WONGANIN/BATHURST & IRVINE.	Yes	Yes	Yes	Men only	ACH Directory	Place	Burial; Creation / Dreaming Narrative; Hunting Place; Traditional Structure; Other; Plant Resource	*Registered Knowledge Holder names available from DPLH	Registered Site	K01695
13501	NGALANGURU	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Traditional Structure; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	K01675
13502	VINEY ISLAND	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Artefacts / Scatter; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K01676



Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
13524	MARDUNGU	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	K01642
13589	MACLEAY ISLANDS 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K01600
13888	MWARNGUN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place		*Registered Knowledge Holder names available from DPLH	Lodged	K01204
13889	DJUGOGUN	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place		*Registered Knowledge Holder names available from DPLH	Lodged	K01205
13938	NIMAMARA	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place		*Registered Knowledge Holder names available from DPLH	Lodged	K01199
13939	GUNDALMARA	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place		*Registered Knowledge Holder names available from DPLH	Lodged	K01200
14610	NILAGUN, SUNDAY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00439
14611	NGOLORON, BUCCANEER ARCHIP.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00440
14612	GAWURGUN, SUNDAY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00441
14613	BILINJBILINJ, SUNDAY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00442
14614	NGALUN, SUNDAY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00443
14615	UMBINAR, SUNDAY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00444

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
14642	GADIMAN, DAMPIERLAND.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00422
14656	DJALAN, BUCCANEER ARCHIP.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00436
14658	BULNGINJI, BUCCANEER ARCHIP.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Other	*Registered Knowledge Holder names available from DPLH	Lodged	K00438
14796	ECLIPSE ISLANDS	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	K00265
14797	SIR GRAHAM MOORE ISLANDS	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K00266
14816	GURARINGAI.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00232
14839	TROUGHTON ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00255
14867	MALAPURU, PARRY HARBOUR.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00229
14869	DAIBI, PARRY HARBOUR.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp	*Registered Knowledge Holder names available from DPLH	Lodged	K00231
14891	SWAN POINT.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Creation / Dreaming Narrative; Hunting Place; Traditional Structure; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	K00091
14929	ALBERT ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	K00131

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
14930	SOUTH MARET ISLAND	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K00132
14934	WEST MONTALIVET ISLAND	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Traditional Structure; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00136
14935	PRUDHOE ISLAND.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative; Engraving; Hunting Place	*Registered Knowledge Holder names available from DPLH	Registered Site	K00137
14936	EAST MONTALIVET ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K00138
14937	EAST MONTALIVET ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K00139
14938	WOLLASTON ISLAND.	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Creation / Dreaming Narrative; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00140
14939	KATERS ISLAND	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	K00141
14952	CASSINI ISLAND	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K00154
14976	MONTGOMERY ISLANDS	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Artefacts / Scatter; Creation / Dreaming Narrative; Traditional Structure; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00178
14977	CHAMPAGNY ISLANDS	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00179
14978	CHAMPAGNY ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	K00180

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
14979	BYAM MARTIN ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Fish Trap	*Registered Knowledge Holder names available from DPLH	Registered Site	K00181
14980	DECEPTION BAY	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00182
14982	AUGUSTUS ISLAND 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	K00184
14989	JACKSON ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure; Painting	*Registered Knowledge Holder names available from DPLH	Registered Site	K00191
16709	Hidden Island Burial Site	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	
20288	Sunday Island Mission Cemeteries	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	
24152	Saltwater Country - reef sites and fish traps (Maret Island)	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Camp; Ritual / Ceremonial; Creation / Dreaming Narrative; Fish Trap; Historical; Hunting Place; Meeting Place; Landscape / Seascape Feature; Ochre; Plant Resource; Rock Shelter; Shell; Water Source	*Registered Knowledge Holder names available from DPLH	Lodged	
24153	Jaradanyingga - Jaajaal	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Camp; Ritual / Ceremonial; Historical; Hunting Place; Meeting Place; Landscape / Seascape Feature; Ochre; Plant Resource; Quarry; Rock Shelter; Shell; Water Source	*Registered Knowledge Holder names available from DPLH	Lodged	
24575	Irvine Island Ledge Burial	Yes	No	Yes	Men only	ACH Directory	Place	Burial; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	



Aboriginal Cultural Heritage Inquiry System

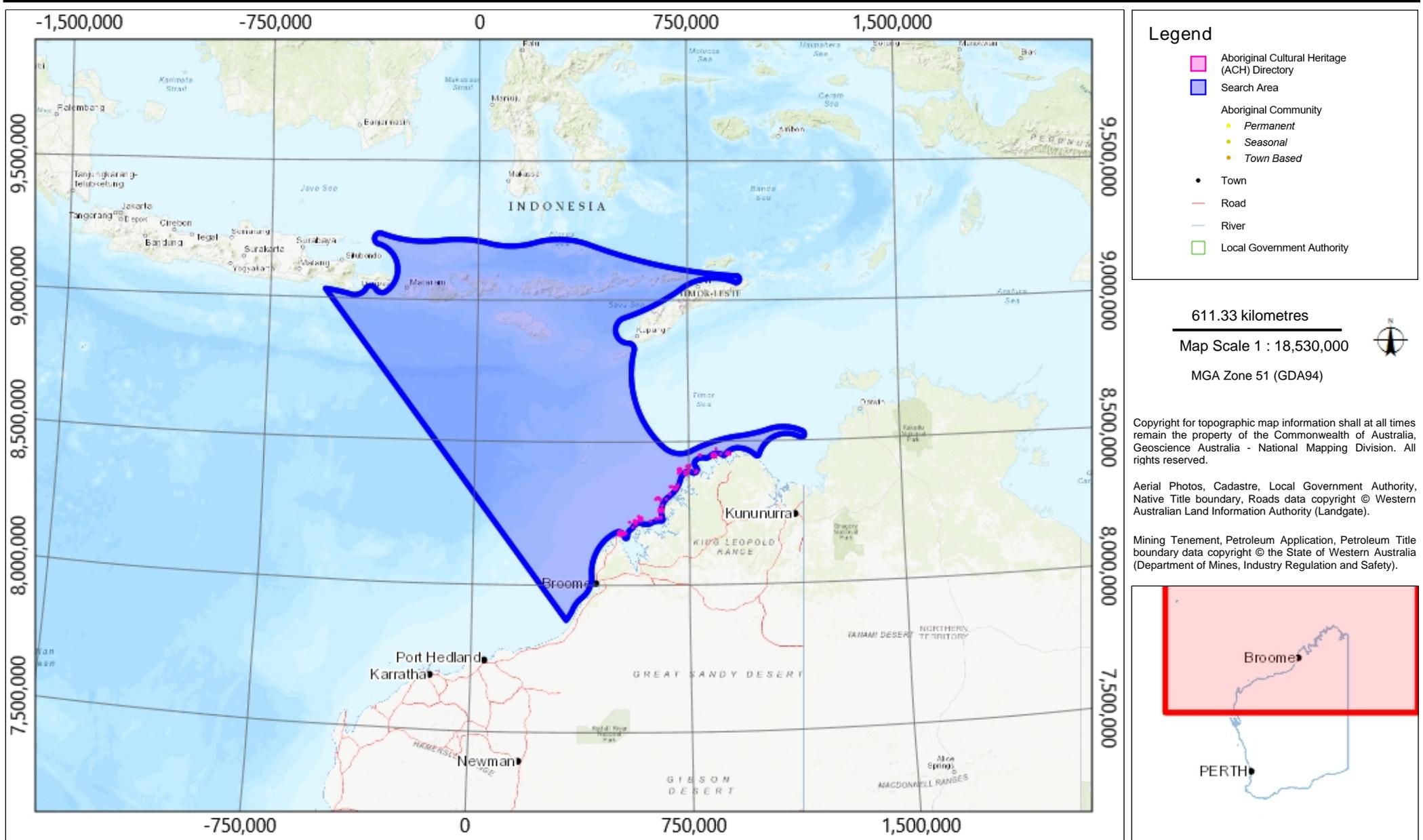
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
24759	Striated Stone (Stone in the valley)	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	
24760	Irvine Island Rockshelter	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Lodged	
34562	Wary Bay Bigge Island	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Painting	*Registered Knowledge Holder names available from DPLH	Lodged	

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

106 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_2

Disclaimer

The Aboriginal Cultural Heritage Act 2021 (Act) recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported to the ACH Council or exists on the Directory.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at AboriginalHeritage@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether the location and extent of the ACH boundary is considered reliable.
- Boundary Restricted = No: ACH location is shown as accurately as the information submitted allows.
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Culturally Sensitive = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- Culturally Sensitive = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact AboriginalHeritage@dplh.wa.gov.au.
- Culturally Sensitive Nature:
 - No Gender / Initiation Restrictions: Anyone can view the information.
 - Men only: Only males can view restricted information.
 - Women only: Only females can view restricted information.

Status:

- ACH Directory: Aboriginal cultural heritage place or cultural landscape.
- Pending: Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- Cultural Landscape: a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- Place: an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous Aboriginal Heritage Act 1972:

- Registered Site: the place was assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Lodged: Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the Aboriginal Heritage Act 1972.
- Stored Data/Not a Site: The place was assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

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Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
919	ENDERBY IS.27: GOODWYN VIEW	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07279
927	ENDERBY IS.16: WHITE BASIN	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07233
937	ENDERBY IS.26: NORTH POINT	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07243
966	ROSEMARY IS.11: CHOOKIE BAY	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07219
967	ROSEMARY IS.12: CHOOKIE BAY	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07220
968	ROSEMARY IS.13	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Grinding areas / Grooves; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07221
969	ROSEMARY IS.14	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Grinding areas / Grooves; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07222
970	ROSEMARY IS.15: AIRSTRIP	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Grinding areas / Grooves; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07223
971	ROSEMARY IS.16: AIRSTRIP	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07224
972	ROSEMARY IS.17: AIRSTRIP	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07225
973	ROSEMARY IS.18: DEEP WATER	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07226
974	ROSEMARY IS.19: CHITON	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07227

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
975	ROSEMARY IS.20: HALFWAY CK	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07228
976	ROSEMARY IS.21: HALFWAY CK	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	P07229
977	ROSEMARY IS.22	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P07230
978	ROSEMARY IS.23: WADJURU R/H	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Grinding areas / Grooves; Traditional Structure; Midden; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P07231
979	ROSEMARY IS.24: HUNGERFORD	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07232
1062	LEGENDRE 11	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	P07204
1103	LEGENDRE HILL	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07193
1104	LEGENDRE 01.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Shell; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P07194
1105	LEGENDRE 02	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07195
1106	LEGENDRE 03.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P07196
1109	LEGENDRE 06.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P07199
1110	LEGENDRE 07.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P07200

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
1111	LEGENDRE 08.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Traditional Structure; Shell	*Registered Knowledge Holder names available from DPLH	Lodged	P07201
1112	LEGENDRE 09.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P07202
1113	LEGENDRE 10.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Rock Shelter; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P07203
5946	WEST INTERCOURSE ISLAND 11	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07153
5999	WEST INTERCOURSE ISLAND 09.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P07151
6000	WEST INTERCOURSE ISLAND 10	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07152
6078	ROSEMARY ISLAND 10	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07019
6079	ENDERBY ISLAND 12	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P07020
6080	ENDERBY ISLAND 13	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07021
6081	ENDERBY ISLAND 14	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07022
6082	ENDERBY ISLAND 15	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07023
6182	EAST LEWIS ISLAND: SW.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Engraving; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06915

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6183	EAST LEWIS ISLAND: NE.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Engraving; Grinding areas / Grooves; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P06916
6184	ENDERBY ISLAND 09: SE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Fish Trap; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06917
6185	ENDERBY ISLAND 10: N.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Engraving; Midden; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P06918
6186	ENDERBY ISLAND 11: NE.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Ritual / Ceremonial; Engraving; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06919
6227	MALUS ISLAND.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Engraving; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06908
6228	WEST LEWIS ISLAND: SW.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Grinding areas / Grooves; Midden; Other; Quarry; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P06909
6229	WEST LEWIS ISLAND: NW ARM 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Ritual / Ceremonial; Engraving; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06910
6230	WEST LEWIS ISLAND: NW ARM 2	Yes	Yes	Yes	Men only	ACH Directory	Place	Artefacts / Scatter; Ritual / Ceremonial; Engraving; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06911
6231	WEST LEWIS ISLAND: NE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Fish Trap; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06912

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6232	WEST LEWIS ISLAND: N	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06913
6233	EAST LEWIS ISLAND: S.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Camp; Engraving; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06914
6325	COWERIE WELL	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P06642
6966	ENDERBY ISLAND 08	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P05955
7866	EAST LEWIS MIDDEN 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P04966
7899	MALUS ISLAND	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	P04947
7906	DELAMBRE ISLAND SOUTH.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P04954
7907	ROE POINT, EAST LEWIS	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P04955
7908	EAST LEWIS ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P04956
7914	EAST LEWIS MIDDEN 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P04962
9736	PASTORAL SETTLEMENT	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P02448
11328	GAP WELL	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00836



Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
11648	DOLPHIN ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00512
11698	ANGELA COVE	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00457
11714	GIDLEY ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00474
11715	RIM ROCK GORGE.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp; Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00475
11729	NGARLUMA POINT, GIDLEY IS.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P00434
11730	MORS HILL, GIDLEY ISLAND.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial; Artefacts / Scatter; Engraving; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	P00435
11744	EAST LEWIS 5	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00395
11745	EAST LEWIS 6	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00396
11746	EAST LEWIS 7	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00397
11747	EAST LEWIS 8	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00398
11748	EAST LEWIS 9	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00399
11749	EAST LEWIS 4	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00400

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
11750	EAST LEWIS 3	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00401
11752	EAST LEWIS 2	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00403
11753	EAST LEWIS 1	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00404
11759	WEST LEWIS ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00410
11767	FISH POINT, GIDLEY ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00418
11771	ENDERBY ISLAND 05	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00368
11772	ROSEMARY ISLAND 09	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P00369
11773	ROSEMARY ISLAND 08	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Grinding areas / Grooves; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P00370
11774	ROSEMARY ISLAND 07	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00371
11775	ROSEMARY ISLAND 06	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00372
11776	ROSEMARY ISLAND 04.	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp; Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00373
11777	ROSEMARY ISLAND 03	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00374

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
11789	ROSEMARY ISLAND 01	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Midden; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P00386
11790	WEST INTERCOURSE ISLAND 06	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00387
11791	WEST INTERCOURSE ISLAND 07	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00388
11792	WEST INTERCOURSE ISLAND 02	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00389
11793	WEST INTERCOURSE ISLAND 03	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00390
11794	WEST INTERCOURSE ISLAND 04	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00391
11795	WEST INTERCOURSE ISLAND 05	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00392
11796	WEST INTERCOURSE ISLAND 01	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00393
11818	ROSEMARY ISLAND 02	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00362
11819	ROSEMARY ISLAND 05	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00363
11820	ENDERBY ISLAND 01	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00364
11823	ENDERBY ISLAND 04	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P00367

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
15726	EAST INTERCOURSE ISLAND 01	Yes	Yes	Yes	Men only	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P07942
16216	North West Intercourse Island Site 13	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Grinding areas / Grooves; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	
16217	North West Intercourse Island Site 36	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Grinding areas / Grooves; Other; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	
16235	North West Intercourse Island Site 4	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	
16247	North West Intercourse Island Site 13	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving; Grinding areas / Grooves; Midden; Shell	*Registered Knowledge Holder names available from DPLH	Registered Site	
16263	North West Intercourse Island Site 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	
16269	North West Intercourse Island Site 12	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Grinding areas / Grooves	*Registered Knowledge Holder names available from DPLH	Registered Site	
16270	North West Intercourse Island Site 14	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	
16271	North West Intercourse Island Site 15	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Grinding areas / Grooves	*Registered Knowledge Holder names available from DPLH	Registered Site	
20621	Bedout Island	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative; Landscape / Seascape Feature; Other	*Registered Knowledge Holder names available from DPLH	Lodged	
21500	Gidley Island RAMMC2	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Lodged	
21503	Gidley Island RAMMC9	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Lodged	



Aboriginal Cultural Heritage Inquiry System

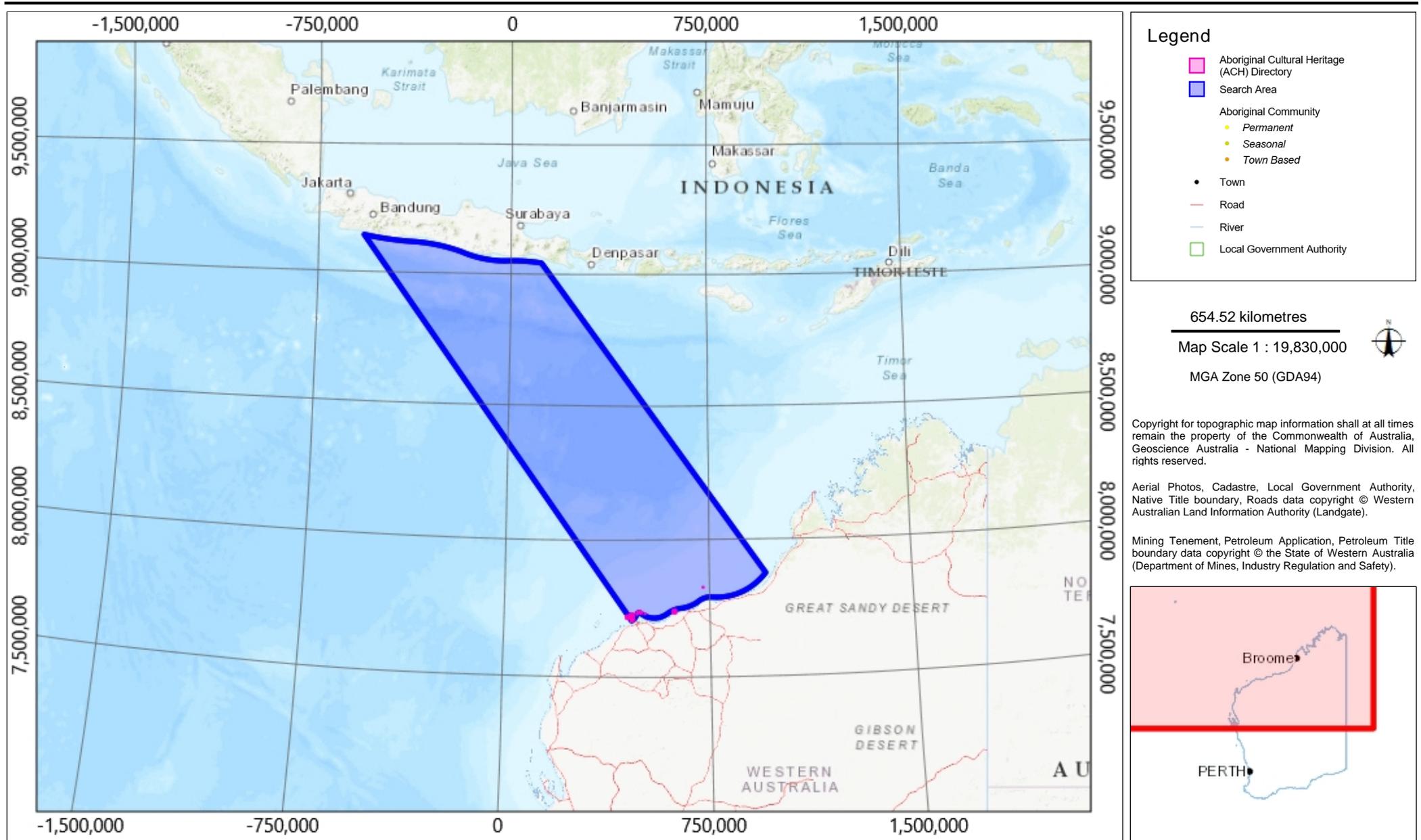
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
38533	Cape Bruguieres Channel	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	

Aboriginal Cultural Heritage Inquiry System

For further important information on using this information please see the Department of Planning, Lands and Heritage's Disclaimer statement at <https://www.wa.gov.au/disclaimer>

Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

61 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_3. Warning: Search area complex so results may be inaccurate. Contact DPLH for assistance.

Disclaimer

The Aboriginal Cultural Heritage Act 2021 (Act) recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported to the ACH Council or exists on the Directory.

The information provided is made available in good faith and is predominately based on the information provided to the Department of Planning, Lands and Heritage by third parties. The information is provided solely on the basis that readers will be responsible for making their own assessment as to the accuracy of the information. If you find any errors or omissions in our records, including our maps, it would be appreciated if you email the details to the Department at AboriginalHeritage@dplh.wa.gov.au and we will make every effort to rectify it as soon as possible.

Copyright

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether the location and extent of the ACH boundary is considered reliable.
- Boundary Restricted = No: ACH location is shown as accurately as the information submitted allows.
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Culturally Sensitive = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- Culturally Sensitive = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact AboriginalHeritage@dplh.wa.gov.au.
- Culturally Sensitive Nature:
 - No Gender / Initiation Restrictions: Anyone can view the information.
 - Men only: Only males can view restricted information.
 - Women only: Only females can view restricted information.

Status:

- ACH Directory: Aboriginal cultural heritage place or cultural landscape.
- Pending: Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- Cultural Landscape: a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- Place: an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous Aboriginal Heritage Act 1972:

- Registered Site: the place was assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Lodged: Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the Aboriginal Heritage Act 1972.
- Stored Data/Not a Site: The place was assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

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Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
873	MONTEBELLO IS: NOALA CAVE.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	P07287
883	BARROW ISLAND 01	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07291
884	BARROW ISLAND 02	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07292
885	BARROW ISLAND 03	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07293
886	BARROW ISLAND 04	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07294
887	BARROW ISLAND 05	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07295
888	BARROW ISLAND 06 A-F	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07296
889	BARROW ISLAND 07	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07297
890	BARROW ISLAND 08	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07298
891	BARROW ISLAND 09	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07299
892	BARROW ISLAND 10	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07300
893	BARROW ISLAND 11	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07301

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
894	BARROW ISLAND 12	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	P07302
926	MONTEBELLO IS: HAYNES CAVE.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Midden; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Registered Site	P07286
929	ENDERBY IS.18: MANGROVE CK	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07235
930	ENDERBY IS.19: MANGROVE CK	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	P07236
931	ENDERBY IS.20: MANGROVE CK	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07237
932	ENDERBY IS.21: BACK QUARRY	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P07238
933	ENDERBY IS.22: TEREBRALIA	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07239
934	ENDERBY IS.23: GRINDING	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Grinding areas / Grooves	*Registered Knowledge Holder names available from DPLH	Registered Site	P07240
935	ENDERBY IS.24: LIMESTONE	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	P07241
936	ENDERBY IS.25: DINGHY MIDDEN	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P07242
6184	ENDERBY ISLAND 09: SE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Fish Trap; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06917
6575	JINTA 1 MIDDEN	Yes	No	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P06370

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6618	DEW TALU.	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P06363
6619	JINTA 1.	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Water Source	*Registered Knowledge Holder names available from DPLH	Registered Site	P06364
6965	ENDERBY ISLAND 07	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Midden	*Registered Knowledge Holder names available from DPLH	Lodged	P05954
9737	ENDERBY ISLAND 06: BOILER B	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	P02449
11790	WEST INTERCOURSE ISLAND 06	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00387
11791	WEST INTERCOURSE ISLAND 07	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00388
11820	ENDERBY ISLAND 01	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00364
11821	ENDERBY ISLAND 02	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Midden	*Registered Knowledge Holder names available from DPLH	Registered Site	P00365
11822	ENDERBY ISLAND 03	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	P00366
17640	West Intercourse Island	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Engraving	*Registered Knowledge Holder names available from DPLH	Registered Site	
19171	Ceremonial Ground	Yes	Yes	Yes	Men only	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative; Engraving	*Registered Knowledge Holder names available from DPLH	Lodged	
22943	Flacourt Bay 01	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Rock Shelter	*Registered Knowledge Holder names available from DPLH	Lodged	

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List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
29549	Boodie Soak	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
31762	Site 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
31763	Site 2	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36199	Boodie Cave	No	Yes	No		ACH Directory	Place	Artefacts / Scatter; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Lodged	
36200	John Wayne Country Rockshelter	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Rock Shelter	*Registered Knowledge Holder names available from DPLH	Lodged	
36234	South End structures, Barrow Island.	No	No	No		ACH Directory	Place	Historical; Traditional Structure	*Registered Knowledge Holder names available from DPLH	Lodged	
36261	G-13-S0001	No	Yes	No		ACH Directory	Place	Quarry	*Registered Knowledge Holder names available from DPLH	Lodged	
36262	H-24-S0001	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36263	H-24-S0002	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36264	I-23-S0001	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36265	I-23-S0002	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36266	I-24-S0003	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
36267	J-23-S0001	No	Yes	No		ACH Directory	Place	Grinding areas / Grooves	*Registered Knowledge Holder names available from DPLH	Lodged	
36268	J-23-S0002	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36269	J-23-S0003	No	Yes	No		ACH Directory	Place	Modified Tree	*Registered Knowledge Holder names available from DPLH	Lodged	
36270	M-03-S0001	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36271	N-02-S0001	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36272	O-02-S0002	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36273	O-05-S0003	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36344	N-05-S0002	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36345	N-05-S0001	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36346	O-05-S0001	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36347	O-05-S0002	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
36348	P-04-S0001	No	Yes	No		ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	



Aboriginal Cultural Heritage Inquiry System

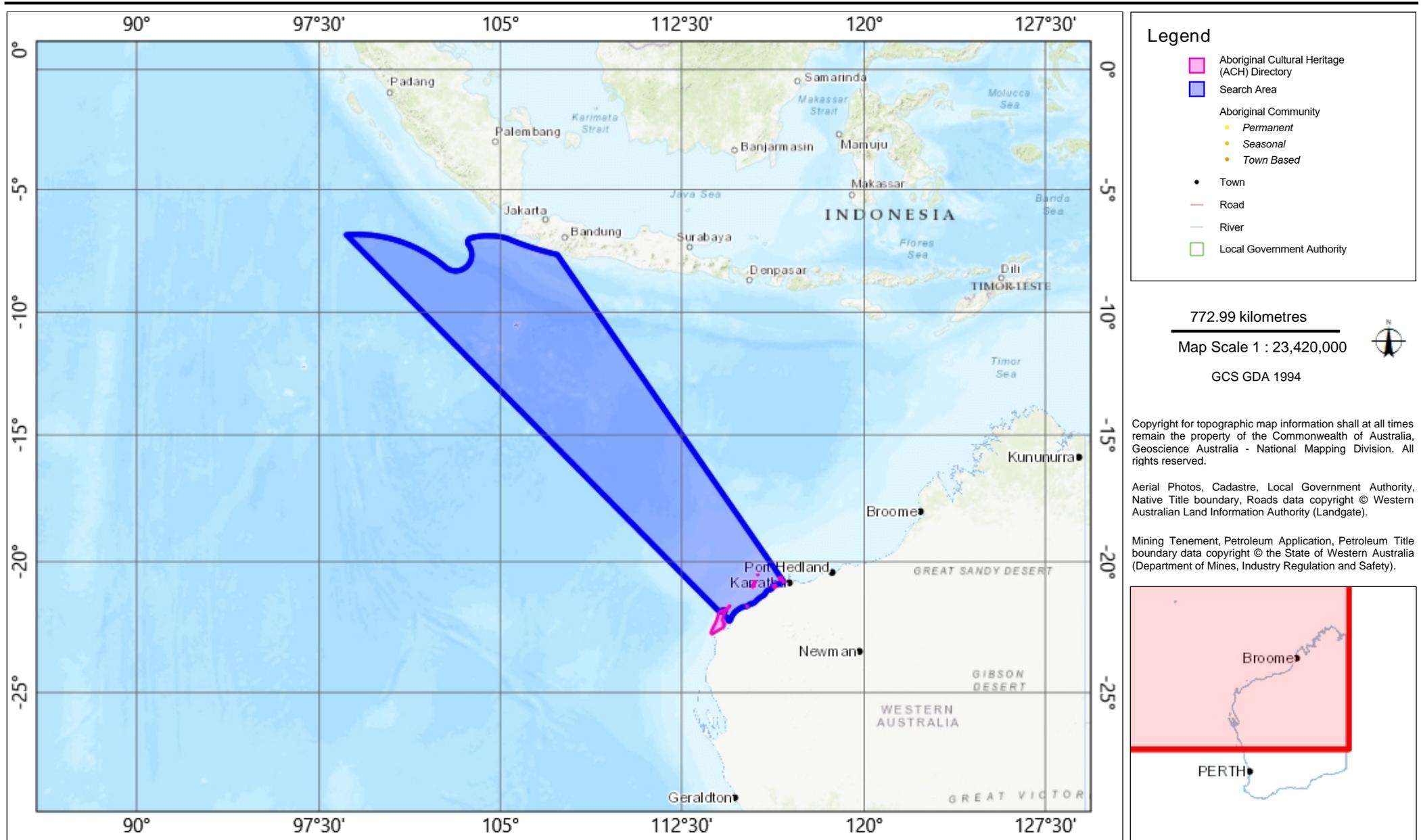
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
39191	Warnangura (Cape Range) Cultural Precinct	No	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Ritual / Ceremonial; Creation / Dreaming Narrative; Engraving; Midden; Rock Shelter; Water Source	*Registered Knowledge Holder names available from DPLH	Lodged	

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

1 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_4

Disclaimer

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Copyright

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether the location and extent of the ACH boundary is considered reliable.
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- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
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- Culturally Sensitive Nature:
 - No Gender / Initiation Restrictions: Anyone can view the information.
 - Men only: Only males can view restricted information.
 - Women only: Only females can view restricted information.

Status:

- ACH Directory: Aboriginal cultural heritage place or cultural landscape.
- Pending: Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- Cultural Landscape: a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- Place: an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous Aboriginal Heritage Act 1972:

- Registered Site: the place was assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Lodged: Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the Aboriginal Heritage Act 1972.
- Stored Data/Not a Site: The place was assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

Map coordinates are based on the GDA 94 Datum.

Basemap Copyright

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Satellite, Hybrid, Road basemap sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, HERE, DeLorme, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community.

Topographic basemap sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.



Aboriginal Cultural Heritage Inquiry System

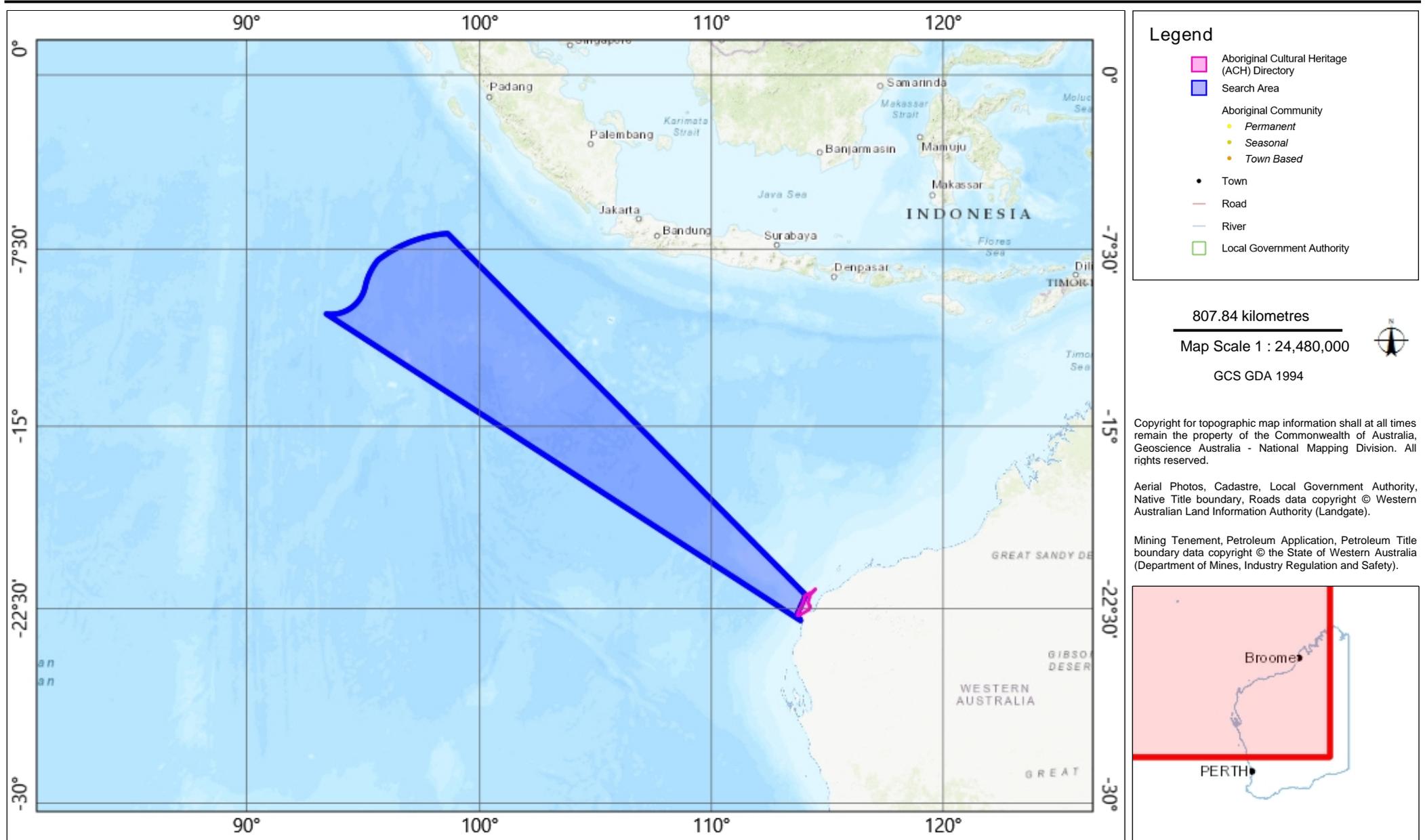
List of Aboriginal Cultural Heritage (ACH) Directory

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Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



Search Criteria

1 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_5

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

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 - Women only: Only females can view restricted information.

Status:

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- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

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Coordinates

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Aboriginal Cultural Heritage Inquiry System

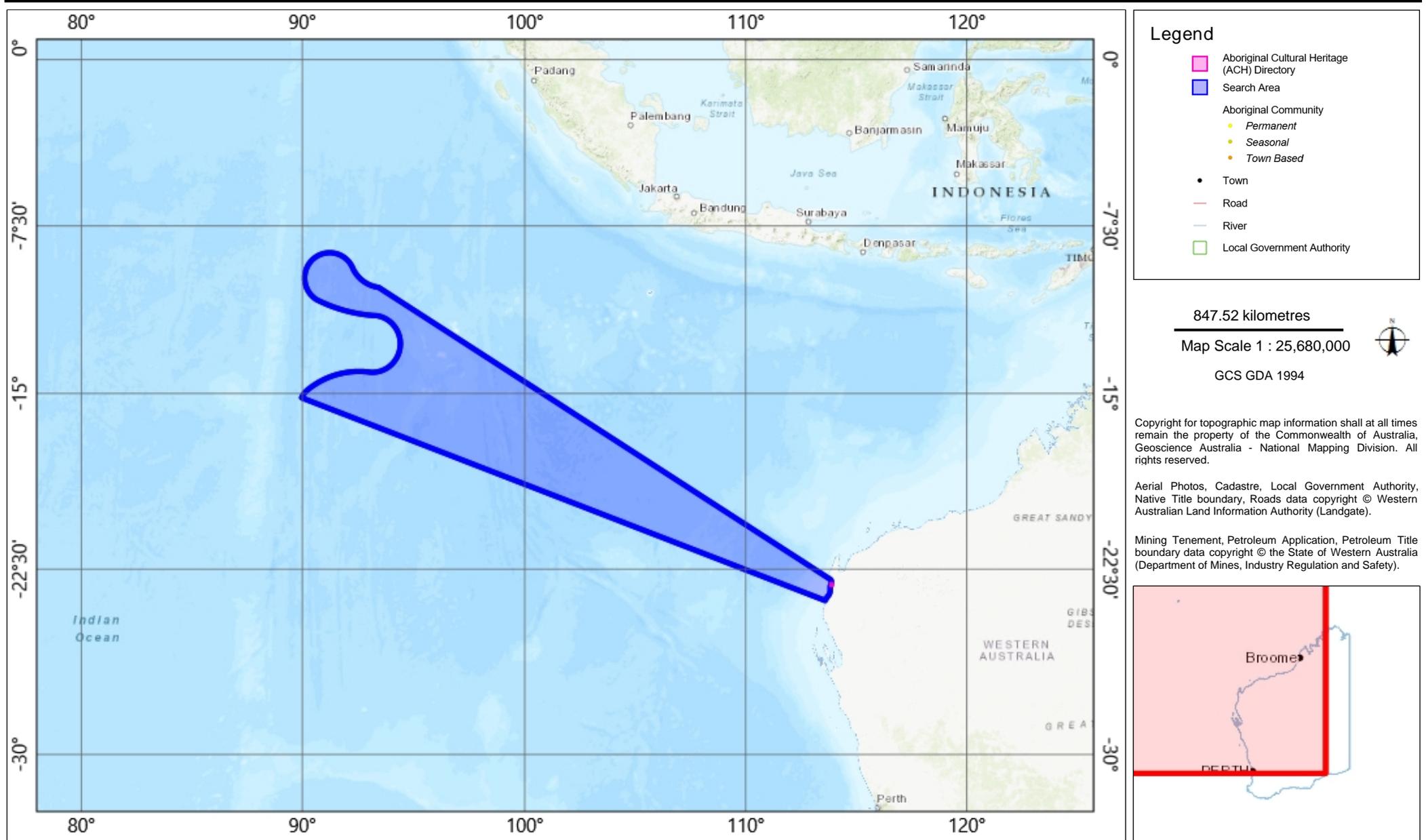
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
6827	CORAL BAY SKELETON	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P06132

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



Search Criteria

3 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_6

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List of Aboriginal Cultural Heritage (ACH) Directory

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Coordinates

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Aboriginal Cultural Heritage Inquiry System

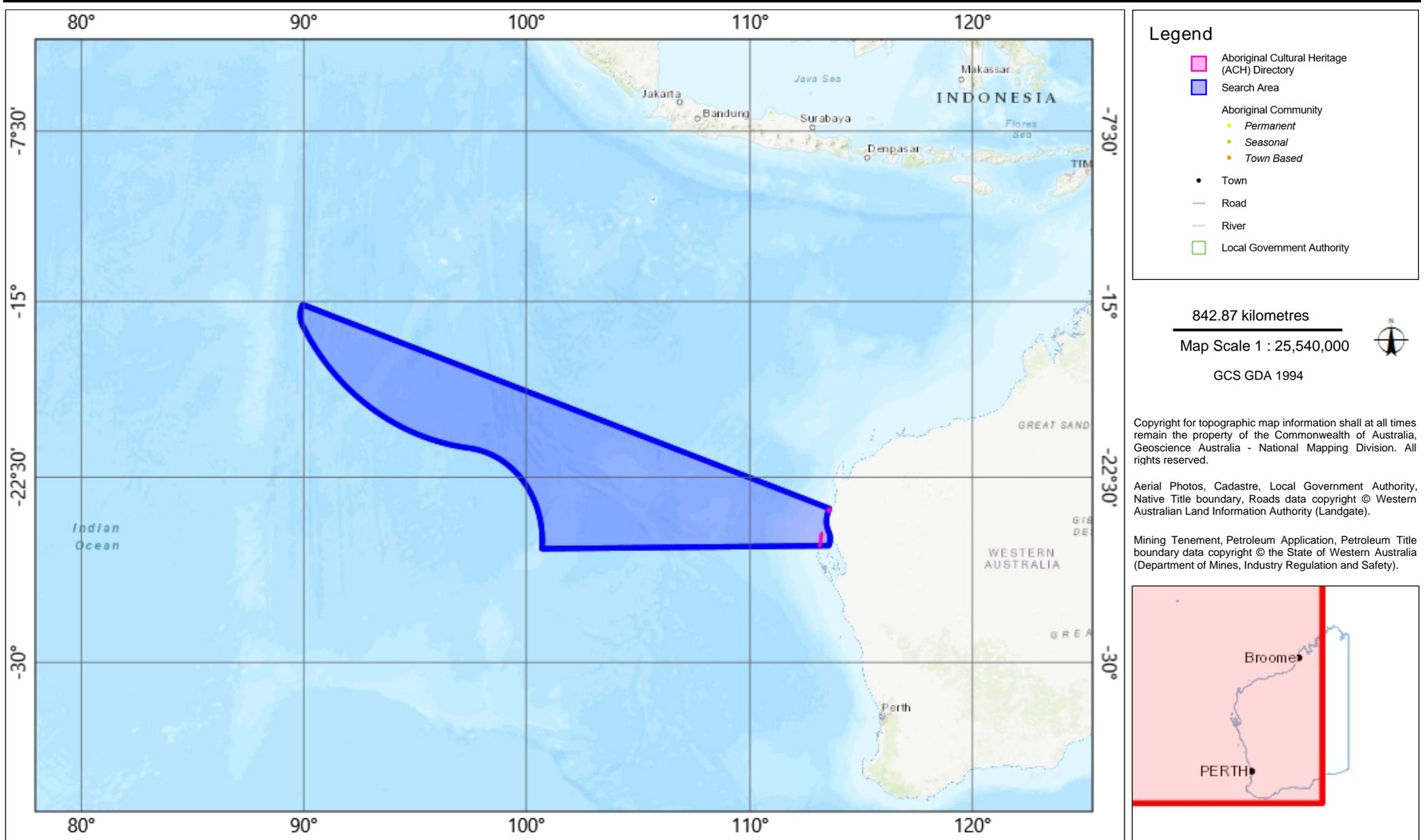
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
7123	BERNIER ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P05789
7124	DORRE ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P05790
10100	GNARALOO BAY	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Lodged	P02065

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

27 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_7. Warning: Search area complex so results may be inaccurate. Contact DPLH for assistance.

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South West Settlement ILUA Disclaimer

Your heritage enquiry is on land within or adjacent to the following Indigenous Land Use Agreement(s): Wagyl Kaip & Southern Noongar Indigenous Land Use Agreement, Gnaala Karla Booja Indigenous Land Use Agreement, South West Boojarah #2 Indigenous Land Use Agreement, Yued Indigenous Land Use Agreement, Whadjuk People Indigenous Land Use Agreement.

On 8 June 2015, six identical Indigenous Land Use Agreements (ILUAs) were executed across the South West by the Western Australian Government and, respectively, the Yued, Whadjuk People, Gnaala Karla Booja, Ballardong People, South West Boojarah #2 and Wagyl Kaip & Southern Noongar groups, and the South West Aboriginal Land and Sea Council (SWALSC).

The ILUAs bind the parties (including 'the State', which encompasses all State Government Departments and certain State Government agencies) to enter into a Noongar Standard Heritage Agreement (NSHA) when conducting Aboriginal Heritage Surveys in the ILUA areas, unless they have an existing heritage agreement. It is also intended that other State agencies and instrumentalities enter into the NSHA when conducting Aboriginal Heritage Surveys in the ILUA areas. It is recommended a NSHA is entered into, and an 'Activity Notice' issued under the NSHA, if there is a risk that an activity will 'impact' (i.e. by excavating, damaging, destroying or altering in any way) an Aboriginal heritage site. The Aboriginal Heritage Due Diligence Guidelines, which are referenced by the NSHA, provide guidance on how to assess the potential risk to Aboriginal heritage.

Likewise, from 8 June 2015 the Department of Mines, Industry Regulation and Safety (DMIRS) in granting Mineral, Petroleum and related Access Authority tenures within the South West Settlement ILUA areas, will place a condition on these tenures requiring a heritage agreement or a NSHA before any rights can be exercised.

If you are a State Government Department, Agency or Instrumentality, or have a heritage condition placed on your mineral or petroleum title by DMIRS, you should seek advice as to the requirement to use the NSHA for your proposed activity. The full ILUA documents, maps of the ILUA areas and the NSHA template can be found at <https://www.wa.gov.au/organisation/department-of-the-premier-and-cabinet/south-west-native-title-settlement>.

Further advice can also be sought from the Department of Planning, Lands and Heritage at AboriginalHeritage@dplh.wa.gov.au.

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

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Access and Restrictions:

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Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
3399	ROTTNEST: LITTLE ARMSTRONG.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	S02775
3418	ROTTNEST: PEACOCK HILL	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	S02700
3440	ROTTNEST: CYCLEWAY	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	S02750
3467	ROTTNEST: TRANSIT CELL	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	S02698
3468	ROTTNEST: OLD HOSPITAL	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	S02699
3540	ROTTNEST: LODGE/QUAD.	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Historical; Repository / Storage Place	*Registered Knowledge Holder names available from DPLH	Registered Site	S02555
3780	ROTTNEST: LONGREACH BAY	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	S02116
3781	Wadjemup Aboriginal Prisoners Cemetery (ROTTNEST)	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	S02118
3782	ROTTNEST: GOLF COURSE	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	S02119
3784	ROTTNEST: STABLES	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	S02121
3829	ROTTNEST: FISH HOOK BAY	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Engraving	*Registered Knowledge Holder names available from DPLH	Lodged	S02099
6498	DIRK HARTOG ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Traditional Structure	*Registered Knowledge Holder names available from DPLH	Registered Site	P06448

Aboriginal Cultural Heritage Inquiry System

List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
7124	DORRE ISLAND	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Burial	*Registered Knowledge Holder names available from DPLH	Registered Site	P05790
20592	Bathurst Point Lighthouse Site	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Other	*Registered Knowledge Holder names available from DPLH	Lodged	
23867	Bathurst Point Artefact	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Lodged	
31746	Golf Course South Glass Artefact Scatter	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	
31747	Golf Course Northeast Site Glass Artefact Scatter	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	
31748	Golf Course Isolated Finds	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Other	*Registered Knowledge Holder names available from DPLH	Lodged	
38004	Rottneest Island Wadjemup	No	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Fish Trap	*Registered Knowledge Holder names available from DPLH	Lodged	
39235	WAD-2021-001	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	
39236	WAD-2021-003	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	
39237	WAD-2021-002	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	
39238	WAD-2021-004	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	
39239	SSPAA-2017-01	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Sub surface cultural material; Artefacts / Scatter; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	

Aboriginal Cultural Heritage Inquiry System

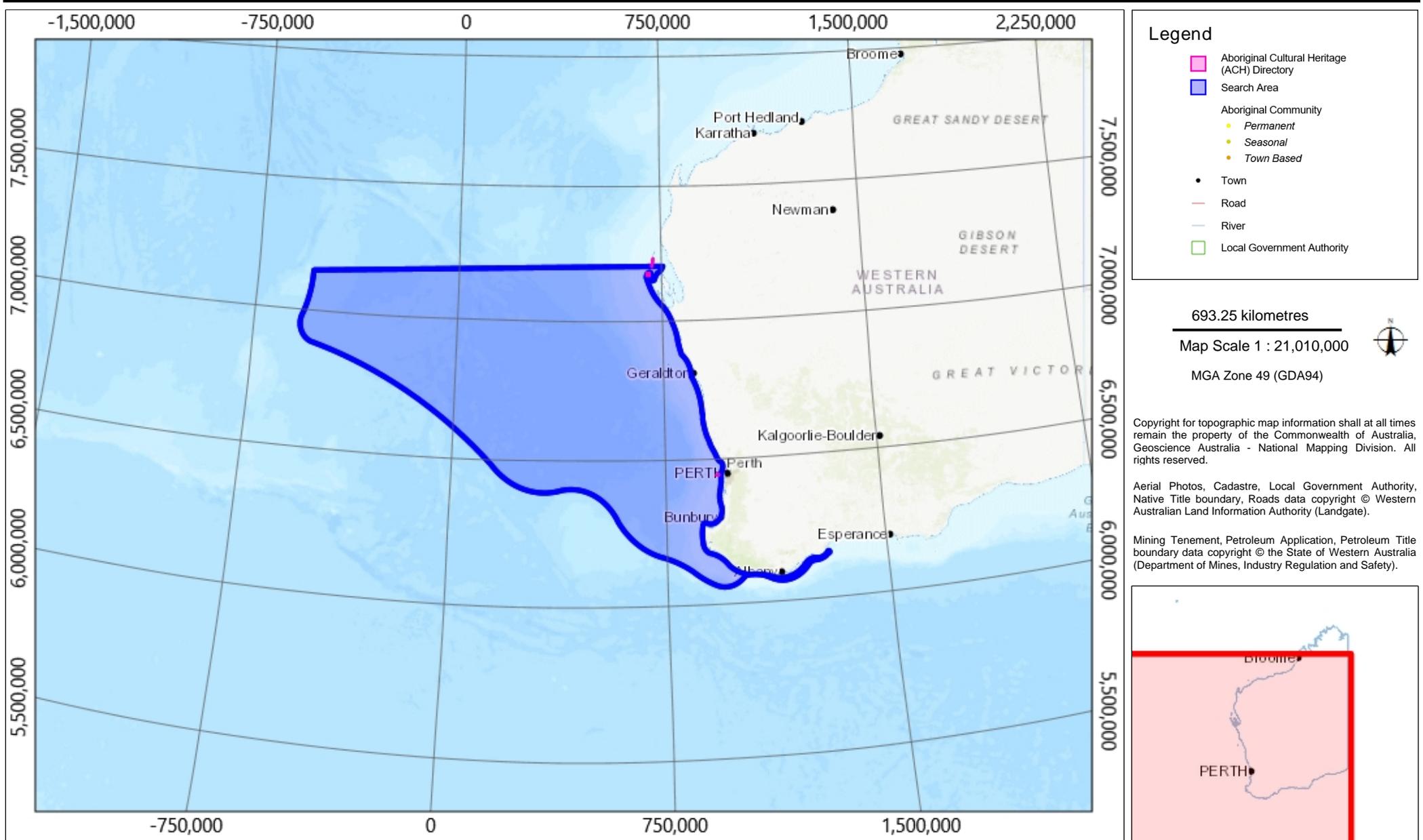
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
39352	WH22-002	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Ritual / Ceremonial; Creation / Dreaming Narrative; Historical; Landscape / Seascape Feature; Other	*Registered Knowledge Holder names available from DPLH	Lodged	
39353	WH22-001	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Other	*Registered Knowledge Holder names available from DPLH	Lodged	
39697	SM22-A-01	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter; Historical; Other; Quarry	*Registered Knowledge Holder names available from DPLH	Registered Site	

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

11 Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_8

Disclaimer

The Aboriginal Cultural Heritage Act 2021 (Act) recognises, protects, conserves, and preserves Aboriginal cultural heritage (ACH), and recognises the fundamental importance of ACH to Aboriginal people and its role in Aboriginal communities past, present and future. The Act recognises the value of ACH to Aboriginal people as well as to the wider Western Australian community.

Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported to the ACH Council or exists on the Directory.

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List of Aboriginal Cultural Heritage (ACH) Directory

Terminology

ID: Reported ACH is assigned a unique ID by the Department of Planning, Lands and Heritage using the format: ACH-00000001. For ACH places on the former Register the ID numbers remain unchanged and use the new format. For example the ACH ID of the place Swan River was previously '3536' and is now 'ACH-00003536'.

Access and Restrictions:

- Boundary Reliable (Yes/No): Indicates whether the location and extent of the ACH boundary is considered reliable.
- Boundary Restricted = No: ACH location is shown as accurately as the information submitted allows.
- Boundary Restricted = Yes: To preserve confidentiality the exact location and extent of the place is not displayed on the map. However, the shaded region (generally with an area of at least 4km²) provides a general indication of where the ACH is located. If you are a landowner and wish to find out more about the exact location of the place, please contact the Department of Planning, Lands and Heritage.
- Culturally Sensitive = No: Availability of information that the Department of Planning, Lands and Heritage holds in relation to the ACH is not restricted in any way.
- Culturally Sensitive = Yes: Some of the information that the Department of Planning, Lands and Heritage holds in relation to the ACH is restricted if it is considered culturally sensitive information. This information will only be made available if the Department of Planning, Lands and Heritage receives written approval from the people who provided the information. To request access please contact AboriginalHeritage@dplh.wa.gov.au.
- Culturally Sensitive Nature:
 - No Gender / Initiation Restrictions: Anyone can view the information.
 - Men only: Only males can view restricted information.
 - Women only: Only females can view restricted information.

Status:

- ACH Directory: Aboriginal cultural heritage place or cultural landscape.
- Pending: Aboriginal cultural heritage place or cultural landscape with information in a verification stage.
- Historic: Aboriginal heritage places determined to not meet the criteria of Section 5 of the Aboriginal Heritage Act 1972. Includes places that no longer exist as a result of land use activities with existing approvals.

ACH Type:

- Cultural Landscape: a group of areas interconnected through the tangible elements of Aboriginal culture heritage present.
- Place: an area in which tangible elements of Aboriginal cultural heritage are present.

Place Type: The type of Aboriginal cultural heritage place. For example an artefact scatter place or engravings place.

Legacy Place Status: A status determined under the previous Aboriginal Heritage Act 1972:

- Registered Site: the place was assessed as meeting Section 5 of the Aboriginal Heritage Act 1972.
- Lodged: Information was received in relation to the place, but an assessment was not completed to determine if it met section 5 of the Aboriginal Heritage Act 1972.
- Stored Data/Not a Site: The place was assessed as not meeting Section 5 of the Aboriginal Heritage Act 1972.

Legacy ID: This is the former unique number that the former Department of Aboriginal Sites assigned to the place.

Coordinates

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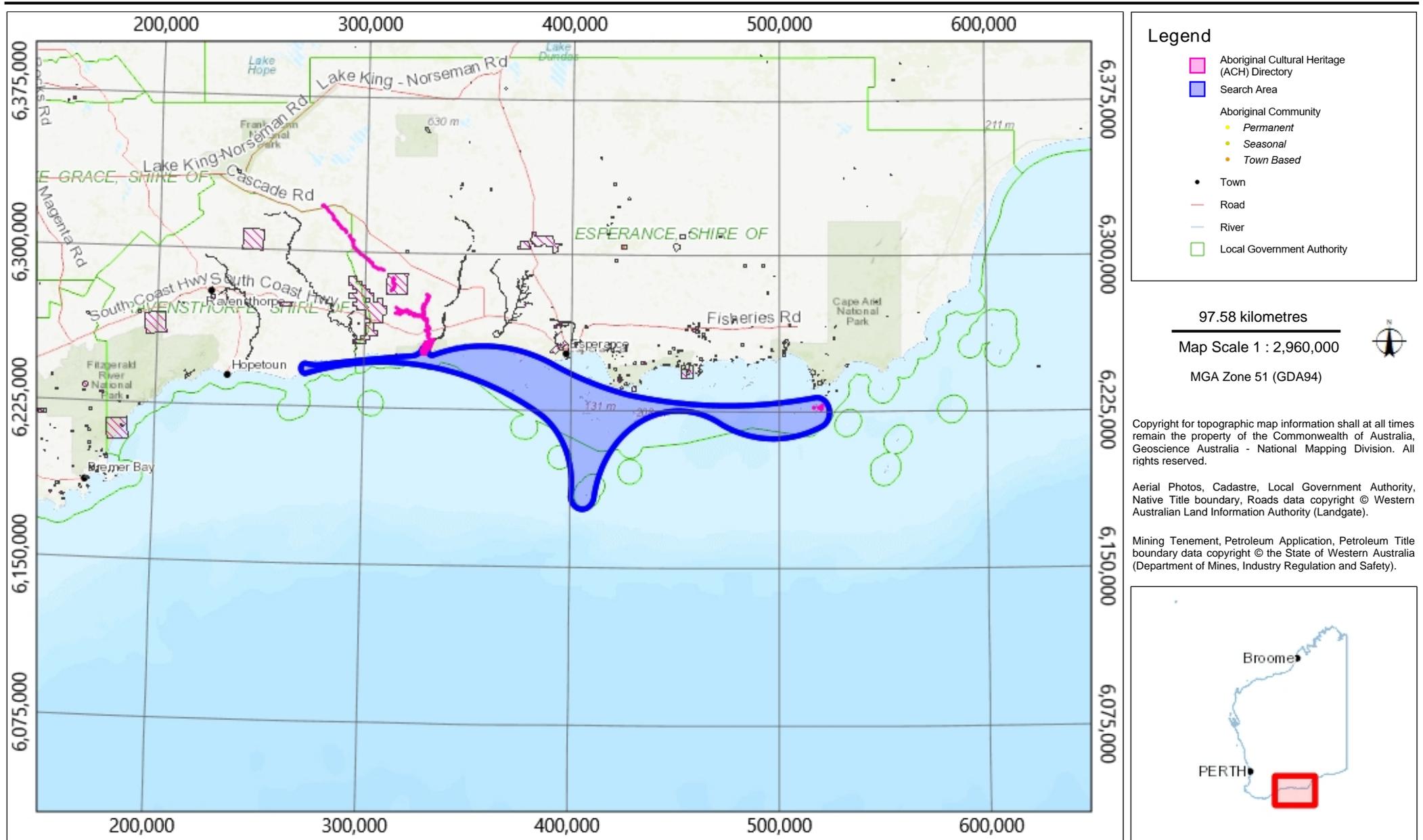
List of Aboriginal Cultural Heritage (ACH) Directory

ID	Name	Boundary Restricted	Boundary Reliable	Culturally Sensitive	Culturally Sensitive Nature	Status	ACH Type	Place Type	Knowledge Holders	Legacy Place Status	Legacy ID
490	MIDDLE ISLAND 9	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W02248
1636	WALITCH BENWENERUP	Yes	Yes	Yes	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Registered Site	W01540
1712	FANNY COVE	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Camp; Historical	*Registered Knowledge Holder names available from DPLH	Registered Site	W01455
1714	MIDDLE ISLAND 1	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01457
1715	MIDDLE ISLAND 2	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01458
1716	MIDDLE ISLAND 3	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01459
1717	MIDDLE ISLAND 4	No	No	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01460
1718	MIDDLE ISLAND 5	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01461
1719	MIDDLE ISLAND 6	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01462
1720	MIDDLE ISLAND 7	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Artefacts / Scatter	*Registered Knowledge Holder names available from DPLH	Registered Site	W01463
26264	Young River	No	Yes	No	No Gender / Initiation Restrictions	ACH Directory	Place	Creation / Dreaming Narrative	*Registered Knowledge Holder names available from DPLH	Registered Site	

Aboriginal Cultural Heritage Inquiry System

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Map of Aboriginal Cultural Heritage (ACH) Directory



List of Aboriginal Cultural Heritage (ACH) Directory

Search Criteria

No Aboriginal Cultural Heritage (ACH) Directory in Shapefile - 20230830_NY_ConsultationArea_PMST_9

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List of Aboriginal Cultural Heritage (ACH) Directory

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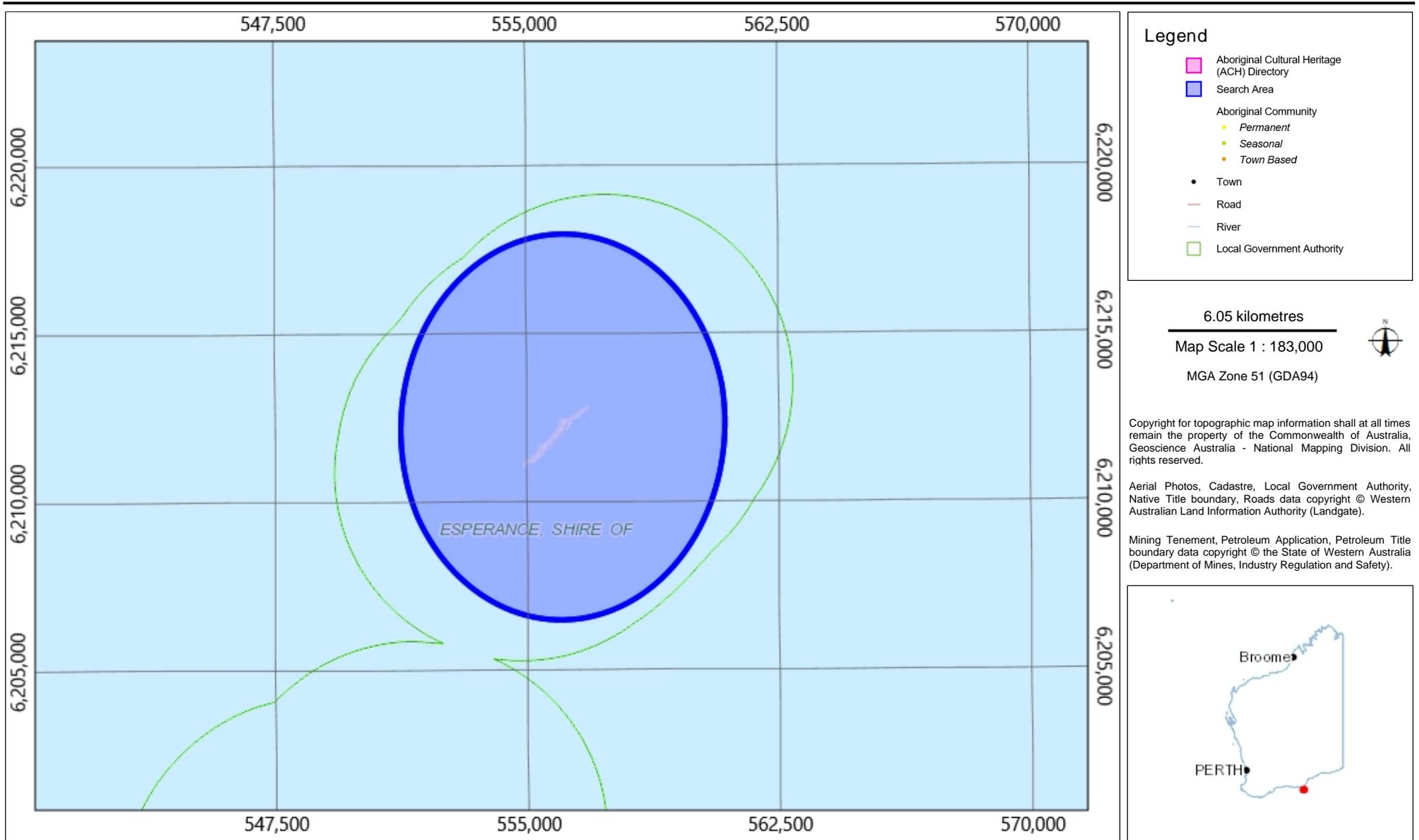
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Aboriginal Cultural Heritage Inquiry System

Map of Aboriginal Cultural Heritage (ACH) Directory



APPENDIX E NATIONAL OFFSHORE PETROLEUM SAFETY AND ENVIRONMENTAL MANAGEMENT AGENCY REPORT FORM

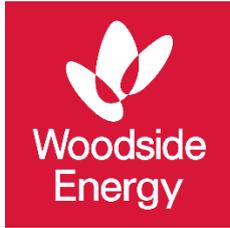
NOPSEMA Recordable Environmental Incident Monthly Reporting Form:

<https://www.nopsema.gov.au/assets/Forms/A198750.doc>

Report of an accident, dangerous occurrence or environmental incident

<https://www.nopsema.gov.au/assets/Forms/N-03000-FM0831-Report-of-an-Accident-Dangerous-Occurrence-or-Environmental-Incident-Rev-8-Jan-2015-MS-Word-2010.docx>

APPENDIX F CONSULTATION



Appendix F

Ngujima-Yin Floating Production Storage and Offloading Facility Operations Environment Plan

- **Table 1: Assessment of Relevance**
- **Consultation Activities**
- **Table 2: Consultation Report with Relevant Persons or Organisations**
- **Table 3: Engagement Report with Persons or Organisations Assessed as Not Relevant**
- **Record of Consultation**

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RELEVANCY ASSESSMENT

Assessment of Relevant Persons for the Proposed Activity

The result of Woodside’s assessment of relevant persons in accordance with regulation 25(1) of the Environment Regulations is outlined below at **Table 1** and **Table 2**.

Persons or organisations that Woodside assessed as not relevant but nonetheless chose to contact at its discretion in accordance with **Section 5.3.4** or self-identified and Woodside assessed as not relevant are summarised below at **Table 1** and **Table 3**.

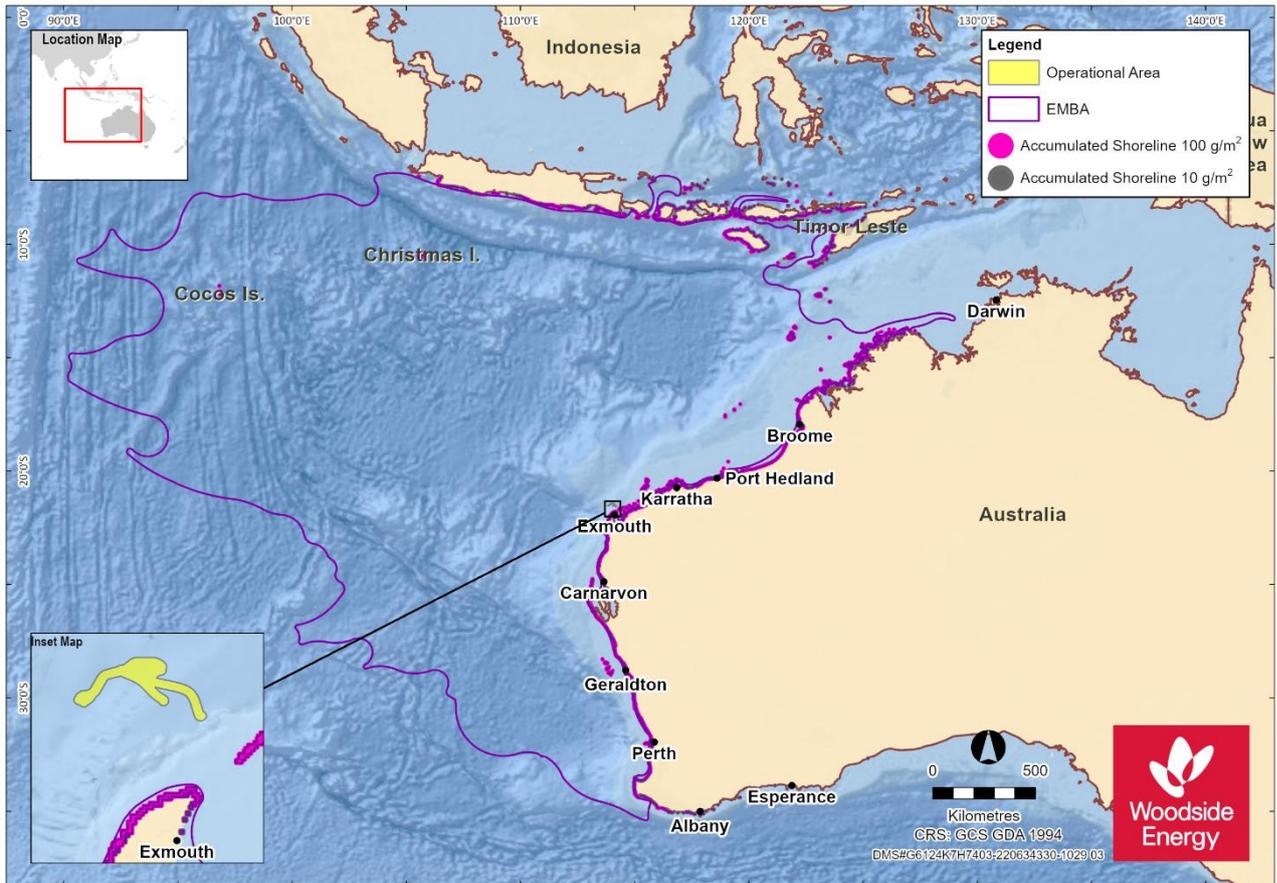


Figure 1: Ngujima-Yin Operational Area and EMBA for this EP.

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Table 1: Assessment of Relevancy

Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
<i>Commonwealth, Western Australia and Northern Territory Government Departments or Agencies – Marine</i>			
Australian Border Force (ABF)	Responsible for coordinating maritime security	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations. ABF’s responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes
Department of Foreign Affairs and Trade (DFAT)	Responsible for promoting and protecting Australia’s interests internationally and contributes to global stability and economic growth. DFAT manages Australia’s relationships and interaction with the governments of our neighbouring countries.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations. DFAT has no direct role in the management of the Commonwealth marine area, but has an interest in ensuring that consultation with foreign entities, both private and government, is effective and is aligned with Australia’s interests. DFAT manages Australia’s relationships and interaction with the governments of our neighbouring countries. The proposed activity has the potential to impact DFAT’s functions, interests or activities as the EMBA overlaps Indonesian and Timor Leste waters.	Yes
Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA)	Responsible for managing fisheries within 12 nm of Christmas Island and Cocos (Keeling) Island	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations. The Christmas Island Line Fishery and Cocos (Keeling) Island Marine Aquarium Fishery are active in the EMBA. DITRDCA’s responsibilities may be relevant to the activity as the Christmas Island Line Fishery and Cocos (Keeling) Island Marine Aquarium Fishery are active in the EMBA.	Yes
Australian Fisheries Management Authority (AFMA)	Responsible for managing Commonwealth fisheries	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>No Commonwealth fisheries are active in the Operational Area. The North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p> <p>AFMA's responsibilities may be relevant to the activity as the North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p>	
Australian Hydrographic Office (AHO)	Responsible for maritime safety and Notices to Mariners	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations.</p> <p>AHO's responsibilities may be relevant to the activity as there are proposed vessel activities.</p>	Yes
Australian Maritime Safety Authority (AMSA) – Marine Safety	Statutory agency for vessel safety and navigation	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations</p> <p>AMSA – Marine Safety's responsibilities may be relevant to the activity as there are proposed vessel activities.</p>	Yes
Australian Maritime Safety Authority (AMSA) – Marine Pollution	Legislated responsibility for oil pollution response in Commonwealth waters	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations.</p> <p>AMSA – Marine Pollution's responsibilities may be relevant to the activity as the proposed activity has a hydrocarbon spill risk which may require AMSA response in Commonwealth waters.</p>	Yes
Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries	Responsible for implementing Commonwealth policies and programs to support agriculture, fishery, food and forestry industries	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations.</p> <p>No Commonwealth fisheries are active in the Operational Area. The North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p> <p>DAFF – Fisheries responsibilities may be relevant to the activity as the North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p>	
Department of Defence (DoD)	Responsible for defending Australia and its national interests.	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations.</p> <p>DoD's responsibilities may be relevant to the activity as defence training areas lie within the EMBA.</p>	Yes
Department of Primary Industries and Regional Development (DPIRD)	Responsible for managing State fisheries	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations.</p> <p>The Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery are active in the Operational Area.</p> <p>The Abalone Managed Fishery, Abrolhos Islands and Mid West Trawl Managed Fishery, Broome Prawn Managed Fishery, Cockburn Sound (Fish Net) Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Kimberley Prawn Managed Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Open Access in the North Coast, Gascoyne Coast, Pearl Oyster Managed Fishery, Pearl Oyster Managed</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Beach Seine and Mesh Net Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South West Trawl Fishery, Specimen Shell Managed Fishery, Trochus Fishery, Warnbro Sound Crab Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery have been active in the EMBA within the last 5 years.</p> <p>DPIRD's responsibilities may be relevant to the activity as the government department responsible for State fisheries.</p>	
Department of Transport (DoT)	Legislated responsibility for oil pollution response in State waters	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations.</p> <p>The proposed activity has a hydrocarbon spill risk, which may require DoT response in State waters.</p>	Yes
Department of Planning, Lands and Heritage (DPLH)	Responsible for state level land use planning and management, and oversight of Aboriginal cultural heritage and built heritage matters.	<p>Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations.</p> <p>There is known Maritime Cultural Heritage overlapping the EMBA.</p>	Yes
Western Australian Museum	Manages 200 shipwreck sites of the 1,500 known to be located off the Western Australian coast.	Woodside has applied its methodology for 'Historical cultural heritage groups or organisations' under regulation 25(1)(b) of the Environment Regulations.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		There are known shipwrecks overlapping the EMBA which the Western Australian Museum may be responsible for.	
Pilbara Ports Authority	Responsible for the operation of the Port of Dampier and Port of Port Hedland.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Pilbara Ports Authority's responsibilities as the EMBA overlaps the Pilbara Ports Authority's area of responsibility.	Yes
Kimberley Ports Authority	Responsible for the operation of the Port of Broome.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Kimberley Ports Authority's responsibilities as the EMBA overlaps Kimberley Ports Authority's area of responsibility.	Yes
Mid West Ports Authority	Responsible for the operation of the Port of Geraldton.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Mid West Ports Authority's responsibilities as the EMBA overlaps Mid West Ports Authority's area of responsibility.	Yes
Fremantle Port Authority	Responsible for the operation of Port of Fremantle.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Fremantle Port Authority's responsibilities as the EMBA overlaps Fremantle Port Authority's area of responsibility.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Southern Ports	Responsible for the operation of the Port of Albany and Port of Bunbury.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Southern Ports' responsibilities as the EMBA overlaps Southern Ports' area of responsibility.	Yes
Port of Christmas Island	Responsible for the operation of the Port of Christmas Island.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Port of Christmas Island's responsibilities as the EMBA overlaps Port of Christmas Island's area of responsibility.	Yes
Port of Cocos (Keeling) Island	Responsible for the operation of the Port of Cocos (Keeling) Island.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has the potential to impact Port of Cocos (Keeling) Island's responsibilities as the EMBA overlaps Port of Cocos (Keeling) Island's area of responsibility.	Yes
Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel)	DAFF administers, implements and enforces the Biosecurity Act 2015. The Department requests to be consulted where an activity has the potential to transfer marine pests. DAFF also has inspection and reporting requirements to ensure that all conveyances (vessels, installations and aircraft) arriving in Australian territory comply with international health regulations and that any biosecurity risk is managed.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DAFF – Biosecurity's responsibilities may be relevant to the proposed activities in the EMBA in the prevention of introduced marine species.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
	The Department requests to be consulted where an activity involves the movement of aircraft or vessels between Australia and offshore petroleum activities either inside or outside Australian territory.		
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Responsible for implementing Commonwealth policies and programs to support climate change, sustainable energy use, water resources, the environment and our heritage. <i>Administers the Underwater Cultural Heritage Act 2018 in collaboration with the States, Northern Territory and Norfolk Island, which is responsible for the protection of shipwrecks, sunken aircraft and other types of underwater heritage and their associated artefacts in Commonwealth waters.</i>	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DCCEEW's responsibilities may be relevant to the proposed activities in the EMBA as there are potential environmental impacts from the proposed activity. There is known Maritime Cultural Heritage overlapping the EMBA.	Yes
Director of National Parks (DNP)	Responsible for the management of Commonwealth parks and conservation zones.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DNP's responsibilities may be relevant to the activity as DNP requires an awareness of activities that occur within AMPs, and an understanding of potential impacts and risks to the values of parks (NOPSEMA guidance note: N-04750-GN1785 A620236, June 2020). Titleholders are required to consult DNP on offshore petroleum and greenhouse gas exploration activities if they occur in, or may impact on the values of marine parks, including where potential spill response activities may occur in the event of a spill (i.e. scientific monitoring).	Yes
Ningaloo Coast World Heritage Advisory Committee (NCWHAC)	Supports the DBCA to manage the Ningaloo Coast World Heritage Area.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. The NCWHAC's responsibilities may be relevant to the activity as the EMBA overlaps the Ningaloo Marine Park.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Department of Biodiversity, Conservation and Attractions (DBCA)	Responsible for managing WA's parks, forests and reserves to achieve wildlife conservation and provide sustainable recreation and tourism opportunities.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. The DBCA's responsibilities may be relevant to the activity as EMBA overlaps WA parks, forests or reserves. Activities have the potential to impact marine tourism in the EMBA.	Yes
Northern Territory Department of Industry, Tourism and Trade (DITT) – NT Fisheries	Responsible for managing State fisheries in the Northern Territory.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations. The Northern Territory Aquarium Fish/Display Fish Fishery, Northern Territory Spanish Mackerel Fishery, Northern Territory Offshore Net & Line Fishery, Northern Territory Demersal Fishery, Northern Territory Mud Crab Fishery, Northern Territory Mollusc Fishery, Northern Territory Aquaculture Fishery overlap the EMBA but have not been active in the EMBA in the past 5 years. Under regulation 25(1)(e) of the Environment Regulations, Woodside at its discretion has chosen to assess NT Fisheries as a relevant person.	Yes
Northern Territory Department of Industry, Tourism and Trade (DITT) (Aquatic Biosecurity)	Monitors and manages the risk of new marine pests arriving in the Northern Territory.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. As the EMBA overlaps Northern Territory waters, DITT – Aquatic Biosecurity's responsibilities may overlap with potential risks and impacts specific to the proposed petroleum activity in the EMBA.	Yes
Northern Territory Department of Environment, Parks and Water Security (DEPWS)	Responsible for managing the Northern Territory's policies to protect the environment and natural resources.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. As the EMBA overlaps Northern Territory waters, DEPWS's responsibilities may overlap with potential risks and impacts specific to the proposed petroleum activity in the EMBA.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Northern Territory Environment Protection Agency (NTEPA)	Responsible for promoting the ecologically sustainable development of the Northern Territory.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. The proposed activity has a hydrocarbon spill risk, which may require NTEPA response in State waters as the EMBA overlaps Northern Territory waters.	Yes
Northern Territory Department of Infrastructure, Planning and Logistics (DIPL) (Marine Safety)	Responsible for marine safety in Northern Territory waters.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. As the EMBA overlaps Northern Territory waters, DIPL – Marine Safety's responsibilities may overlap with potential risks and impacts specific to the proposed petroleum activity in the EMBA.	Yes
Department of Territory Families, Housing and Communities (Heritage Branch)	Responsible for working with the community to preserve the heritage of the Northern Territory, including maritime heritage.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(b) of the Environment Regulations. There is no known Maritime Cultural Heritage overlapping the EMBA in Northern Territory waters. Woodside chose to contact Department of Territory Families, Housing and Communities (Heritage Branch) in line with Section 5.3.4 of the EP.	No
Commonwealth and State Government Departments or Agencies – Industry			
Department of Industry, Science and Resources (DISR)	Department of relevant Commonwealth Minister.	Required to be consulted under regulation 25(1)(a) of the Environment Regulations.	Yes
Department of Mines, Industry Regulation and Safety (DEMIRS)	Department of relevant State Minister	Required to be consulted under regulation 25(1)(c) of the Environment Regulations.	Yes
Northern Territory Department of Industry,	Department of relevant State Minister.	Required to be consulted under regulation 25(1)(c) of the Environment Regulations.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
Tourism and Trade (DITT) (Mining and Energy)			

Commonwealth Commercial fisheries and representative bodies			
North West Slope and Trawl Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Although the fishery overlaps the Operational Area, the fishery has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes
Southern Bluefin Tuna Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Woodside does not consider that the proposed activity will present a risk to licence holders, given since 1992, the majority of Australian catch has concentrated in south-eastern Australia. (Patterson et al., 2022). In addition, given fishing methods by licence holders for species fished in this fishery (Australia has a 35% share of total global allowable catch of Southern Bluefin Tuna, which is value-added through tuna ranching near Port Lincoln (South Australia), or fishing effort in New South Wales (Australian Southern Bluefin Tuna Industry Association).</p>	No
Western Deepwater Trawl Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes

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Western Skipjack Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Woodside does not consider that the activity will present a risk to licence holders, given the fishery spans the Australian Fishing Zone west of Victoria and the Torres Strait. The Fishery is not currently active and no fishing has occurred since 2009 (Patterson et al., 2022). In addition, interactions are not expected given the species' pelagic distribution fishing methods for species fished by licence holders.</p>	No
Western Tuna and Billfish Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Although the fishery overlaps the Operational Area, the fishery has not been active in the Operational Area within the last 5 years. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes
Northern Prawn Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes
Christmas Island Line Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes
Cocos (Keeling) Islands Marine Aquarium Fishery	Commonwealth commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(a) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the last 5 years.</p>	Yes

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Commonwealth Fisheries Association (CFA)	Represents the interests of commercial fishers with licences in Commonwealth waters	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>No Commonwealth fisheries are active in the Operational Area. The North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p> <p>CFA's functions may be relevant to the activity as the North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, and Cocos (Keeling) Islands Marine Aquarium Fishery are active in the EMBA.</p>	Yes
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Represents the interests of the Southern Bluefin Tuna Fishery and Western Skipjack Fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Southern Bluefin Tuna Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Southern Bluefin Tuna Fishery, the ASBTIA has also been assessed as not relevant.</p> <p>Woodside has provided information to the ASBTIA at its discretion in line with Section 5.3.4 on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.</p>	No
Tuna Australia	Represents the interests of the Western Tuna and Billfish Fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Western Tuna and Billfish Fishery is active within the EMBA.</p> <p>Tuna Australia's functions may be relevant to the activity as the Western Tuna and Billfish Fishery is active in the EMBA.</p>	Yes
Pearl Producers Association (PPA)	Peak representative organisation of The Australian South Sea Pearling Industry, with members in Western Australia and the Northern Territory	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Pearl Oyster Managed Fishery is active within the EMBA.</p>	Yes

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		PPA's functions may be relevant to the activity as the Pearl Oyster Managed Fishery is active in the EMBA.	
Northern Prawn Fishery Industry Pty Ltd	Represents the interests of the Northern Prawn Fishery	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Northern Prawn Fishery is active within the EMBA. Northern Prawn Fishery Industry Pty Ltd's functions may be relevant to the activity as the Northern Prawn Fishery is active within the EMBA.	Yes
State Commercial fisheries and representative bodies			
Western Australian Fishing Industry Council (WAFIC)	Represents the interests of commercial fishers with licences in State waters.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery are active in the Operational Area. The Abalone Managed Fishery, Abrolhos Islands and Mid West Trawl Managed Fishery, Broome Prawn Managed Fishery, Cockburn Sound (Fish Net) Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Kimberley Prawn Managed Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Pearl Oyster Managed Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Beach Seine and Mesh Net Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean	Yes

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		<p>Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South West Trawl Fishery, Specimen Shell Managed Fishery, Trochus Fishery, Warnbro Sound Crab Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery have been active in the EMBA within the last 5 years.</p> <p>WAFIC's functions may be relevant to the activity as the peak representative body for State fisheries.</p> <p>Under fee for service WAFIC issued consultation materials to relevant commercial fisheries licence holders.</p> <p>Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting, via WAFIC, fisheries that are assessed as having a potential for interaction in the Operational Area.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would be undertaken only in the event of an unplanned emergency scenario.</p>	
Marine Aquarium Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>While Woodside assessed the fishery as relevant in the Operational Area, under the fee-for-service agreement between WAFIC and Woodside, WAFIC has advised there is no need to consult this fishery given the proposed activities operate in depths ~180-850m which is outside the depth of the hand collection and diving methods used by this fishery.</p>	No

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South West Coast Salmon Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area within the last 5 years. The fishery has been active in the EMBA within the last 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Mackerel Managed Fishery (Area 1, 2 and 3)	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery Area 2 overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years.</p> <p>The fishery Areas 1 and 3 do not overlap the Operational Area. The fishery areas overlap the EMBA and have been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting, via WAFIC, fisheries that are assessed as having a potential for interaction in the Operational Area.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	Yes (Area 2)
Pilbara Crab Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area within the last 5</p>	No

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		<p>years. The fishery has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	
West Coast Deep Sea Crustacean Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.</p> <p>Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting, via WAFIC, fisheries that are assessed as having a potential for interaction in the Operational Area.</p>	Yes
Specimen Shell Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Abalone Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p>	No

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		As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.	
Pearl Oyster Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Land Hermit Crab Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 251(d) of the Environment Regulations.</p> <p>Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area within the last 5 years. The fishery has been active in the EMBA within the last 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Onslow Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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		<p>past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	
Western Australian Sea Cucumber Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Exmouth Gulf Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Gascoyne Demersal Scalefish Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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West Coast Demersal Scalefish Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
West Coast Rock Lobster Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Nickol Bay Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Shark Bay Crab Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Shark Bay Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Shark Bay Scallop Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Kimberley Crab Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
FBL Condition 74 Fish Trapping	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d).</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Kimberley Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Kimberley Gillnet and Barramundi Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Northern Demersal Scalefish Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Developmental Octopus Interim Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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West Coast Demersal Gillnet & Demersal Longline Interim Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
West Coast (Beach Bait Fish Net) Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
West Coast Estuarine Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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West Coast Purse Seine Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Abrolhos Islands and Mid West Trawl Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Broome Prawn Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Cockburn Sound (Fish Net) Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Cockburn Sound (Line and Pot) Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
West Australian Sea Cucumber Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Pilbara Fish Trawl (Interim) Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Shark Bay Beach Seine and Mesh Net Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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South Coast Crustacean Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
South Coast Estuarine Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
South Coast Purse-Seine Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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South West Trawl Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
South Coast Salmon Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Warnbro Sound Crab Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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Trochus Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
South West Coast Beach Net Fishery (Order)	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Mandurah to Bunbury Developing Crab Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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		<p>past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	
South Coast Line and Fish Trap Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
South Coast Nearshore Net Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Exmouth Gulf Beach Seine and Mesh Net Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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		<p>past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	
Open Access in the North Coast, Gascoyne Coast and West Coast Bioregions	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
WA North Coast Shark Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Demersal Scalefish Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the</p>	No

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		<p>past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	
Pilbara Trawl Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p>	No
Pilbara Trap Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not need to consult fisheries in the EMBA.</p> <p>As per WAFIC's Commercial Fishing Consultation Framework for the Offshore Oil and Gas Sector and Consultation Approach for Unplanned Events, consultation with State fisheries relevant to the EMBA of the proposed activity would however be undertaken only in the event of an unplanned emergency scenario.</p> <p>Woodside chose to contact Pilbara Trap Fishery, via WAFIC, at its discretion in line with Section 5.3.4 as consultation for this EP was combined with a separate EP.</p>	No

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Pilbara Line Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.</p> <p>Woodside acknowledges WAFIC's consultation guidance and has applied this by consulting, via WAFIC, fisheries that are assessed as having a potential for interaction in the Operational Area.</p>	Yes
Western Rock Lobster Council	Represents the interests of the Western Rock Lobster Managed Fishery.	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The West Coast Rock Lobster Managed Fishery is active within the EMBA.</p> <p>The Western Rock Lobster Council's functions may be relevant to the activity as the West Coast Rock Lobster Managed Fishery is active in the EMBA.</p>	Yes
<i>Northern Territory Commercial fisheries and representative bodies</i>			
Northern Territory Seafood Council (NTSC)	Represents the NT seafood industry	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Northern Territory Aquarium Fish/Display Fish Fishery, Northern Territory Spanish Mackerel Fishery, Northern Territory Offshore Net & Line Fishery, Northern Territory Demersal Fishery, Northern Territory Mud Crab Fishery, Northern Territory Mollusc Fishery, Northern Territory Aquaculture Fishery overlap the EMBA but have not been active in the EMBA in the past 5 years.</p> <p>Woodside chose to contact Northern Territory Seafood Council at its discretion in line with Section 5.3.4.</p>	No
Northern Territory Aquarium Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p>	No

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		<p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Aquarium Managed Fishery at its discretion in line with Section 5.3.4.</p>	
Northern Territory Spanish Mackerel Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Spanish Mackerel Managed Fishery at its discretion in line with Section 5.3.4.</p>	No
Northern Territory Offshore Net and Line Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Offshore Net and Line Managed Fishery at its discretion in line with Section 5.3.4.</p>	No
Northern Territory Demersal Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Demersal Managed Fishery at its discretion in line with Section 5.3.4.</p>	No
Northern Territory Mud Crab Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p>	No

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		<p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Mud Crab Managed Fishery at its discretion in line with Section 5.3.4.</p>	
Northern Territory Mollusc Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Mollusc Managed Fishery at its discretion in line with Section 5.3.4.</p>	No
Northern Territory Aquaculture Managed Fishery	State commercial fishery	<p>Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The fishery does not overlap the Operational Area. The fishery overlaps the EMBA but has not been active in the EMBA within the last 5 years.</p> <p>Woodside chose to contact Northern Territory Aquarium Managed Fishery at its discretion in line with Section 5.3.4.</p>	No
Recreational marine users and representative bodies			
Exmouth Recreational Marine Users	Exmouth-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Andro Maritime Services Australia, Aquatic Adventure Exmouth, Birds Eye View, Blue Horizon Charters, Blue Lightning Charters, Cape Immersion Tours, Coastal Adventure Tours, Coral Bay Ecotours, Cruise Ningaloo, Dampier Island Tourism, Dive Ningaloo, Evolution Fishing Charters, Exmouth Adventure Co., Exmouth Dive Centre, Exmouth Fly Fishing, Exmouth Game Fishing Club, Indian Chief Charters, Innkeeper Sport Fishing Charter, Kings Ningaloo Reef Tours, Live Ningaloo, Mahi Fishing Charters, Montebello Island Safaris, Ningaloo Aviation, Ningaloo Blue, Ningaloo Coral Bay Boats, Ningaloo Discovery, Ningaloo</p>	Yes

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		<p>Ecology Cruises, Ningaloo Fly Fishing, Ningaloo Marine Interaction, Ningaloo Reef Dive, Ningaloo Reef to Range Tours, Ningaloo Safari Tours, Ningaloo Sportfishing Charters, Ningaloo Whaleshark n Dive, Ningaloo Whaleshark Swim, Ocean Eco Adventures, On Strike Charters, Peak Sportfishing Charters, Pelican Charters, Sail Ningaloo, Sea Force Charters, Set the Hook, The Mobile Observatory, Three Islands, Top Gun Charters, Ultimate WaterSports, Venture Ningaloo, View Ningaloo, Warrior Princess Charters, Yardi Creek Boat Tours (email)</p> <p>Activities have the potential to impact Exmouth-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	
Gascoyne Recreational Marine Users	Gascoyne-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Silverado Charters Pty Ltd, Reel Force Charters Pty Ltd, D & N Nominees Pty Ltd, Lyons Family Super Pty Ltd, Seafresh Holdings Pty Ltd, Eco-Abrolhos Pty Ltd, C Emery Fishing Pty Ltd, On Strike Charters (Wa) Pty Ltd, Melkit Pty Ltd, Maritime Engineering Services Pty Ltd, G. C. Bass Nominees Pty Ltd, Brefjen Nominees Pty Ltd, W.A Maritime Investments Pty Ltd, Blue Juice Tours Pty Ltd, Surefire Marine Services Pty Ltd, Makalee Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Kw Marine Pty Ltd, Shark bay Charters Pty Ltd, Bluecity Enterprises Pty Ltd, Jostan Holdings Pty Ltd, Monkey Mia Yacht Charters Pty Ltd, On Strike Charters (Wa) Pty Ltd, Rainfield Pty Ltd, Monster Sportfishing Adventures Pty Ltd, Lulamanzi Investments Pty Ltd, Millennial Charters Pty Ltd, Chapel Nominees Pty Ltd, Regalchoice Holdings Pty Ltd, Fawesome Expeditions Pty Ltd, On Strike Charters (Wa) Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Fire Tiger Pty Ltd (letter)</p> <p>Activities have the potential to impact Gascoyne-based dive, tourism and charter operators functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes

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Pilbara/Kimberley Recreational Marine Users	Pilbara/Kimberley-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Willie Creek Pearl Farm Pty Ltd, Super Yachts Perth Pty Ltd, Silverado Charters Pty Ltd, Bloor Street Investments Pty Ltd, Lugger Enterprises Pty Ltd, Eco-Abrolhos Pty Ltd, C Emery Fishing Pty Ltd, Discovery Holiday Parks Pty Limited, Kimberley Marine Pty Ltd, Coral Princess Cruises (Nq) Pty Ltd, Marine Agents Australia Pty Ltd, Maritime Engineering Services Pty Ltd, G. C. Bass Nominees Pty Ltd, Coastway Investments Pty Ltd, Kcc Group Pty Ltd, Cm Ventures Pty Ltd, Lombadina Aboriginal Corporation, Australian Port And Marine Services Pty Ltd, Hartley Motorcycles Pty Ltd, Humbug Fishing Pty Ltd, Brefjen Nominees Pty Ltd, Melkit Pty Ltd, W.A Maritime Investments Pty Ltd, Blue Juice Tours Pty Ltd, Kw Marine Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Lake Argyle Cruises Pty Ltd, Sealife Charters Pty Ltd, Mal Miles Adventures Pty Ltd, Mackerel Islands Pty Ltd, Diversity Charter Company Wa Pty Ltd, Split Tide Pty Ltd, Broome Tours Pty Ltd, North Star Cruises Australia Pty Ltd, Charter Express Pty Ltd, Sea 2 Pty Ltd, Hotel And Resort Investments Pty Ltd, L & S Family Holdings Pty Ltd, Down The Line Charters Pty Ltd, Kingfisher Island Resort Pty Ltd, Rstg Pty Limited, Sealife Charters Pty Ltd, Coral Princess Cruises (Nq) Pty Ltd, Kimberley Quest Adventures Pty Ltd, Monster Sportfishing Adventures Pty Ltd, Ocean Charters Pty Ltd, Lulamanzi Investments Pty Ltd, Millennial Charters Pty Ltd, Chapel Nominees Pty Ltd, Fawesome Expeditions Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Kimberley Getaway Cruises Pty Ltd, King Sound Resort Hotel Pty (letter)</p> <p>Activities have the potential to impact Pilbara/Kimberley-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	Yes
Karratha Recreational Marine Users	Karratha-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Nickol Bay Sport Fishing Club, Archipelago Adventures, Hampton Harbour Boat & Sailing Club, King Bay Game Fishing Club, Marine</p>	Yes

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		<p>Rescue Dampier, Port Walcott Volunteer Marine Rescue, Port Walcott Yacht Club, Reef Seeker Charters, West Pilbara Volunteer Sea Search and Rescue Group (email)</p> <p>Activities have the potential to impact Karratha-based dive, tourism and charter operators' functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.</p>	
West Coast Recreational Marine Users	West Coast-based dive, tourism and charter operators	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Alltric Pty Ltd & Bluecity Enterprises Pty Ltd, Timberlane Nominees Pty Ltd Trading As Generation Fisheries, Perth Diving Academy Pty Ltd, Reel Force Charters Pty Ltd, Westerner Corporation Pty Ltd, Lugger Enterprises Pty Ltd, D & N Nominees Pty Ltd, Riverblitz Pty Ltd, Third Reef Pty Ltd, Southern Salt Holdings Pty Ltd, Blue Water Adventure Charters Pty Ltd, Timberlane Nominees Pty Ltd, Allegretta Holdings Pty Ltd, Maritime Engineering Services Pty Ltd, Kempton Fisheries Pty Ltd, Latitude Fisheries Pty Ltd, Quay Ventures Pty Ltd, Breffen Nominees Pty Ltd, Boarbarrell Pty Ltd, W.A Maritime Investments Pty Ltd, Porlock Investments Pty Ltd, Makalee Pty Ltd, Indi Blue Pty Ltd, Crenot Nominees Pty Ltd, Blue Juice Tours Pty Ltd, Surefire Marine Services Pty Ltd, Kw Marine Pty Ltd, Viency Pty Ltd, L & S Family Holdings Pty Ltd, Bondall Pty Ltd, Bluecity Enterprises Pty Ltd, Pine Dene Nominees Pty Ltd, Perth Diving Academy, Hillarys Pty Ltd, G. C. Bass Nominees Pty Ltd, Sharkbay Charters Pty Ltd, North Star Cruises Australia Pty Ltd, Western Blue Dive Pty Ltd, Biwal Pty Ltd Trading As Wallabi Carting, El Alauron Pty Ltd, Bondall Marketing Pty Ltd, Jostan Holdings Pty Ltd, Johnson Nominees Super Pty Ltd, Avanova Pty Ltd, Discovery Iii Pty Ltd, Abbey Bay Pty Ltd, Petara Pty Ltd, Rogue Seas Pty Ltd, R & J Glass Pty Ltd, Lulamanzi Investments Pty Ltd, Reefwalker Pty Ltd, Millennial Charters Pty Ltd, Quay Ventures Pty Ltd, Chapel Nominees Pty Ltd, Aquatic Adventures (Wa) Pty Ltd, The Great Escape Charter Company Pty Ltd, Aoa International Pty Ltd, Punchline Pty Ltd Trading As Karma Charters & Dorre Island Fishing Company, Jayson Fishing Company (Wa) Pty Ltd, Kybret Pty Ltd, Temshore Pty Ltd, Eco-Abrolhos Pty Ltd (letter)</p>	Yes

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		Activities have the potential to impact West Coast-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.	
South West Recreational Marine Users	South West-based dive, tourism and charter operators	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Temshore Pty Ltd, Eco-Abrolhos Pty Ltd, Hulson Pty Ltd (letter) Activities have the potential to impact South Coast-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
Christmas Island Recreational Marine Users	Christmas Island-based dive, tourism and charter operators	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Fish Christmas Island, Freedive Christmas Island, Christmas Island Fishing and Charter (email), Shorefire Christmas Island (letter) Activities have the potential to impact Christmas Island-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
Shark Bay marine users	Shark Bay-based dive and charter operators	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Mac Attack Fishing Charters, Perfect Nature Cruises, Tidal Moon, Ocean Park (email). The Shire of Shark Bay identified these Shark Bay marine operators as potentially relevant persons. Woodside chose to contact the Shark Bay marine operators at its discretion in line with Section 5.3.4.	No
Recfishwest	Represents the interests of recreational fishers in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.	Yes

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		Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	
Marine Tourism WA	Represents the interests of marine tourism in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities have the potential to impact recreational fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
WA Game Fishing Association	Represents the interests of game fishers in WA.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities have the potential to impact game fishers' functions, interests or activities due to the location offshore and there has been recorded charter effort in the EMBA in the past 5 years.	Yes
Amateur Fishermen's Association of the NT	Represents the interests of recreational fishers in NT.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities do not have the potential to impact recreational fishers' functions, interests or activities due to the location and limited portion of NT waters in the EMBA. Woodside chose to contact the Amateur Fishermen's Association of the NT at its discretion in line with Section 5.3.4.	No
Northern Territory Guided Fishing Industry Association (NTGFIA)	Represents professional fishing guides and operators in the NT.	Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Activities do not have the potential to impact NTGFIA's functions, interests or activities, based on advice from NTGFIA regarding the very limited portion of NT waters in the EMBA and the unlikelihood of its members operating in those areas. Woodside chose to contact NTGFIA at its discretion in line with Section 5.3.4.	No

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Titleholders and Operators			
Chevron Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Osaka Gas Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Tokyo Gas Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
JERA Gorgon	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Western Gas	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Exxon Mobil Australia Resources Company	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Shell Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
BP Developments Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations.	Yes

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		Titleholder or Operator's permit areas overlaps the EMBA.	
Carnarvon Energy	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
PE Wheatstone	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Kyushu Electric Wheatstone	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Eni Australia	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Fugro Exploration	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas do not overlap the EMBA.	No
Finder Energy (Finder No 16)	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Jadestone	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes

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KUFPEC	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Santos NA Energy Holdings / Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos (BOL) / Santos WA PVG Santos Browse	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Coastal Oil and Gas	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Bounty Oil and Gas	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
OMV Australia / Sapura OMV Upstream	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
KATO Energy / KATO Corowa / KATO NWS / KATO Amulet	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
INPEX Alpha	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes

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JX Nippon O&G Exploration (Australia)	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Vermilion Oil & Gas	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
3D Oil Ltd	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
AGI Tubridgi P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Allasso Energy P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
AWE Perth P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Good Earth Energy Corporation	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes

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Pathfinder Energy P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
PBE Operations P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Pilot Energy Ltd	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Petro China International Investment	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Skye Napoleon; Petroleum; Resources	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Triangle Energy	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
VRX Silica Ltd	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Beach Energy	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes

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NZOG Compass	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Origin Energy Browse	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Mid West Geothermal Power P/L	Titleholder or Operator	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
Peak Industry Representative bodies			
Australian Energy Producers (AEP)	Represents the interests of oil and gas explorers and producers in Australia.	Woodside has applied its methodology for 'Peak Industry Representative bodies' under regulation 25(1)(d) of the Environment Regulations. AEP's responsibilities are identified as having an intersect with Woodside's planned activities in the EMBA.	Yes
National Energy Resources Australia (NERA)	Not-for-profit organisation working with partners in government, research, science and industry to help decarbonise Australia's energy sector.	Woodside has applied its methodology for 'Peak Industry Representative bodies' under regulation 25(1)(d) of the Environment Regulations. Woodside chose to contact NERA at its discretion in line with Section 5.3.4 however the organisation has since disbanded.	No
Traditional Custodians and nominated representative corporations			
Murujuga Aboriginal Corporation (MAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. MAC is the Nominated Representative Corporation under the Burrup and Maitland Industrial Estates Agreement (BMIEA). MAC was established to represent the members of competing Native Title claims over Murujuga, collectively known as the Ngarda Ngarli and comprising Mardudhunera, Ngarluma,	Yes

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		<p>Yaburara, Yindjibarndi and Wong-Goo-Tt-Oo people. The determination of the competing Native Title claims resulted in no native title being found over the lands subject to the BMIEA or below the low water mark.</p> <p>MAC also owns and co-manages the Murujuga National Park, is responsible for the Dampier Archipelago National Heritage Place and is progressing the World Heritage nomination of the Murujuga Cultural Landscape.</p>	
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim, the determination of which the Baiyungu, Thalanyji and Yinggarda people are party to, overlaps the EMBA. The NTGAC and YAC are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people.</p> <p>The NTGAC is also party, with the WA State Government, to the Ningaloo Conservation Estate Indigenous Land Use Agreement (the ILUA), which is coastally adjacent to the EMBA.</p> <p>The NTGAC is responsible for the joint management of the inner Ningaloo Marine Park (State Waters), the Cape Range National Park and new conservation areas extending along the Ningaloo Coast, which runs in parallel to the outer Ningaloo Marine Park in Commonwealth waters.</p> <p>The NTGAC is also party to the Gnaraloo ILUA, which is coastally adjacent to the EMBA.</p> <p>The NTGAC's nominated representative is the Yamatji Marlpa Aboriginal Corporation (YMAC) and the NTGAC executive officer and contact officer pursuant to the Corporations (Aboriginal and Torres Strait Islander) Act 2006 is employed by YMAC. Woodside has therefore consulted the NTGAC, via YMAC.</p>	Yes
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p>	Yes

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		<p>The Thalanyji native title claim, which BTAC is the Registered Native Title Body Corporate for, overlaps the EMBA.</p> <p><i>BTAC is also party to the Macedon ILUA which overlaps the EMBA.</i></p>	
Yinggarda Aboriginal Corporation (YAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim, the determination of which the Baiyungu, Thalanyji and Yinggarda people are party to, overlaps the EMBA. The NTGAC and YAC are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people.</p> <p>The YAC is party to the Brickhouse and Yinggarda Aboriginal Corporation ILUA and Quobba – Yinggarda Pastoral ILUA which overlap the EMBA.</p> <p>The Yinggarda Aboriginal Corporations nominated representative is Gumala Aboriginal Corporation.</p>	Yes
Kariyarra Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Kariyarra native title claim, for which the Kariyarra Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Kariyarra Aboriginal Corporation <i>is also party to the Kariyarra and State ILUA, which overlaps the EMBA.</i></p>	Yes
Wirrawandi Aboriginal Corporation (WAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Yaburara & Mardudhunera People native title determination, for which WAC is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>WAC is party to the Cape Preston Project Deed (YM Mardie ILUA), Cape Preston West Export Facility and KM & YM Indigenous Land Use Agreement 2018 which overlap the EMBA.</p>	Yes

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Robe River Kuruma Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Robe River Kuruma Aboriginal Corporation is party to the RTIO Kuruma Marthudunera People ILUA and KM & YM Indigenous Land Use Agreement 2018 which overlap the EMBA.</p>	Yes
Ngarluma Aboriginal Corporation (NAC)	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Ngarluma People native title determination area, for which NAC is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The historical Ngarluma/Yindjibarndi People native title claim overlaps the EMBA.</p> <p>NAC is also party to the Anketell Port, Infrastructure Corridor and Industrial Estates Agreement and RTIO Ngarluma Indigenous Land Use Agreement (Body Corporate Agreement) which overlap the EMBA.</p>	Yes
Yindjibarndi Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Ngarluma/Yindjibarndi People native title claim, for which NAC and the Yindjibarndi Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.</p>	Yes
Wanparta Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Ngarla and Ngarla #2 (Determination Area A) native title claim, for which the Wanparta Aboriginal Corporation is the Registered Native Title Body Corporate overlaps the EMBA.</p> <p>The Wanparta Aboriginal Corporation is party to the Mayala Country Marine Park Indigenous Land Use Agreement, Ngarla Pastoral ILUA and Ngarla PBC KSCS ILUA which overlap the EMBA.</p>	Yes

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		The EMBA overlaps the Eighty Mile Beach Marine Park, over which the Eighty Mile Beach Marine Park management plan 2014-2024 specifies Karajarri Traditional Lands Association, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation and Nyangumarta Karajarri Aboriginal Corporation as representing people who may have cultural interests in the marine park.	
Malgana Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Malgana Part A native title claim, for which the Malgana Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Nanda People Part B, Malgana 2 and Malgana 3 native title claim, for which the Malgana Aboriginal Corporation and Nanda Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.</p> <p>The Malgana Aboriginal Corporation is also party to the Malgana Tamala Pastoral Lease Agreement, which overlaps the EMBA.</p>	Yes
Nanda Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Nanda People and Nanda #2 native title claim, for which the Nanda Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Nanda People Part B, Malgana 2 and Malgana 3 native title claim, for which the Malgana Aboriginal Corporation and Nanda Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.</p>	Yes
Gogolanyngor Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Jabirr Jabirr/Ngumbarl native title claim, for which the Gogolanyngor Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p>	Yes

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		The Bindunbur native title claim, for which the Gogolanyngor Aboriginal Corporation, Nimanburr Aboriginal Corporation and Nyul Nyul PBC Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.	
Nimanburr Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Bindunbur native title claim, for which the Gogolanyngor Aboriginal Corporation, Nimanburr Aboriginal Corporation and Nyul Nyul PBC Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.	Yes
Nyul Nyul PBC Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Bindunbur native title claim, for which the Gogolanyngor Aboriginal Corporation, Nimanburr Aboriginal Corporation and Nyul Nyul PBC Aboriginal Corporation are the Registered Native Title Body Corporates, overlaps the EMBA.	Yes
Wanjina-Wunggurr (Native Title) Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Dambimangari native title claim, Unguu – Area B, Unguu Part A and Wanjina - Wunggurr Wilinggin Native Title Determination No 1, for which the Wanjina-Wunggurr (Native Title) Aboriginal Corporation is the Registered Native Title Body Corporate, overlap the EMBA. The Wanjina-Wunggurr (Native Title) Aboriginal Corporation is also party to Dambimangari Country Marine Park Indigenous Land Use Agreement and Dambimangari KSCS Marine Parks ILUA which overlap the EMBA and the Cockatoo Island Co-Existence Indigenous Land Use Agreement which is coastally adjacent to the EMBA.	Yes
Karajarri Traditional Lands Association (Aboriginal Corporation)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.	Yes

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		<p>The Karajarri People (Area A) and Karajarri People (Area B) native title claim, for which the Karajarri Traditional Lands Association (Aboriginal Corporation) is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Karajarri Traditional Lands Association (Aboriginal Corporation) is also party to the Great Sandy Desert Project ILUA – Infrastructure and Karajarri Traditional Lands Association KSCS Eighty Mile Beach ILUA which overlap the EMBA.</p> <p>The EMBA overlaps the Eighty Mile Beach Marine Park, over which the Eighty Mile Beach Marine Park management plan 2014-2024 specifies Karajarri Traditional Lands Association, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation and Nyangumarta Karajarri Aboriginal Corporation as representing people who may have cultural interests in the marine park.</p>	
Mayala Inninalang Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Mayala People native title determination, for which the Mayala Inninalang Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Mayala #2 native title determination is coastally adjacent to the EMBA, for which the Mayala Inninalang Aboriginal Corporation is the Registered Native Title Body Corporate.</p> <p>The Mayala Inninalang Aboriginal Corporation is also party to the Mayala Country Marine Park Indigenous Land Use Agreement which overlaps the EMBA.</p>	Yes
Nyangumarta Warrarn Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Nyangumarta People (Part A) native title determination, for which the Nyangumarta Warrarn Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Nyangumarta Warrarn Aboriginal Corporation is also party to the Nyangumarta PBC KSCS ILUA, Nyangumarta Warrarn Aboriginal Corporation & Mandora Pastoral Lease ILUA and</p>	Yes

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		<p>Nyangumarta Warrarn Aboriginal Corporation & Wallal Downs Pastoral Lease ILUA which overlap the EMBA.</p> <p>The EMBA overlaps the Eighty Mile Beach Marine Park, over which the Eighty Mile Beach Marine Park management plan 2014-2024 specifies Karajarri Traditional Lands Association, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation and Nyangumarta Karajarri Aboriginal Corporation as representing people who may have cultural interests in the marine park.</p>	
Nyangumarta Karajarri Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Nyangumarta-Karajarri Overlap Proceeding (Yawinya) native title claim, for which the Nyangumarta Karajarri Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Nyangumarta Karajarri Aboriginal Corporation is party to the NKAC KSCS Eighty Mile Beach ILUA, Nyangumarta Karajarri and Anna Plains Station ILUA and Nyangumarta Karajarri and Mandora Station ILUA which overlap areas where shoreline accumulation may occur.</p> <p>The EMBA overlaps the Eighty Mile Beach Marine Park, over which the Eighty Mile Beach Marine Park management plan 2014-2024 specifies Karajarri Traditional Lands Association, Nyangumarta Warrarn Aboriginal Corporation, Wanparta Aboriginal Corporation and Nyangumarta Karajarri Aboriginal Corporation as representing people who may have cultural interests in the marine park.</p>	Yes
Yawuru Native Title Holders Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Rubibi Community native title claim, for which the Yawuru Native Title Holders Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Yawuru Native Title Holders Aboriginal Corporation is also party to the Eco Beach ILUA, Yawuru Nagulagun / Roebuck Bay</p>	Yes

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		Marine Park ILUA, and Yawuru Prescribed Body Corporate ILUA – Broome which overlap the EMBA.	
Dambimangari Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Dambimangari Aboriginal Corporation is also party to the Cockatoo Island Co-Existence Indigenous Land Use Agreement, Dambimangari Country Marine Park Indigenous Land Use Agreement, Dambimangari KSCS Marine Parks ILUA which overlaps the EMBA.</p> <p>The EMBA overlaps the Lalang-garram/Camden Sound Marine Park, Lalang-garram/Horizontal Falls Marine Park and North Lalang-garram Marine Park, over which the Lalang-gaddam Marine Park Joint Management Plan 2022 specifies Dambimangari Aboriginal Corporation as representing people who may have cultural interests in the marine park.</p>	Yes
Bardi and Jawi Niimidiman Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Bardi and Jawi Native Title Determination, for which the Bardi and Jawi Niimidiman Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Bardi and Jawi Niimidiman Aboriginal Corporation is also party to the Bardi Jawi Conservation Estate Indigenous Land Use Agreement which overlaps the EMBA.</p>	Yes
Balanggarra Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Balanggarra (Combined) native title claim, for which the Balanggarra Aboriginal Corporation is the registered Native Title Body Corporate, overlaps the EMBA.</p> <p>The Balanggarra #4 native title claim, for which the Balanggarra Aboriginal Corporation is the registered Native Title Body Corporate, is adjacent to the EMBA.</p> <p>The EMBA overlaps the North Kimberley Marine Park, over which the North Kimberley Marine Park Joint Management Plan 2016</p>	Yes

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		specifies Wunambal Gaambera Aboriginal Corporation, Balangarra Aboriginal Corporation, Wilinggin Aboriginal Corporation and Yawoorroong Miriwoong Gajirrawoong Yirrgeb Noong Dawang Aboriginal Corporation as representing people who may have cultural interests in the marine park.	
Esperance Tjaltjraak Native Title Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Esperance Nyungars native title determination, for which the Esperance Tjaltjraak Native Title Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.	Yes
Bundi Yamatji Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Yamatji Nation native title claim, for which the Bundi Yamatji Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.	Yes
Ngadju Native Title Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Ngadju native title determination, for which Ngadju Native Title Aboriginal Corporation is the Registered Native Title Body Corporate, overlaps the EMBA.	Yes
Gnaala Karla Booja Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Gnaala Karla Booja Aboriginal Corporation is a party to the Gnaala Karla Booja Indigenous Land Use Agreement which overlaps the EMBA.	Yes
Karri Karrak Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.	Yes

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		The Karri Karrak Aboriginal Corporation is a party to the South West Boojarah #2 Indigenous Land Use Agreement which overlaps the EMBA.	
Wagyl Kaip Southern Noongar Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Wagyl Kaip Southern Noongar Aboriginal Corporation is a party to the Wagyl Kaip & Southern Noongar Indigenous Land Use Agreement which overlaps the EMBA.	Yes
Whadjuk Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Whadjuk Aboriginal Corporation is a party to the Whadjuk People Indigenous Land Use Agreement which overlaps the EMBA.	Yes
Yued Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Yued Indigenous Land Use Agreement overlaps the EMBA. The Yued Aboriginal Corporation is the regional corporation established for the Yued region. The EMBA overlaps the Jurien Bay State Marine Park, over which the Jurien Bay Marine Park Management Plan 2005-2015 specifies Yued native title claimants as representing people who may have cultural interests in the marine park.	Yes
Yawoorroong Miriung Gajerrong Yirrageb Noong Dawang Aboriginal Corporation (" MG Corp ") which is also the representative of Miriung and Gajerrong #4 and Miriung and Gajerrong #1 RTNBCs – PBCs)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Miriung Gajerrong #4 native title determination, for which Miriung and Gajerrong #4 is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA. MG Corp is the Representative Aboriginal Corporation for Miriung Gajerrong #4 RNTBC.	Yes

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Mirning Traditional Lands Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The WA Mirning People native title determination, for which the Mirning Traditional Lands Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.	Yes
Kunin (Native Title) Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Rubibi Community native title determination, for which the Kunin (Native Title) Aboriginal Corporation is the Registered Native Title Body Corporate, is coastally adjacent to the EMBA.	Yes
Wilinggin Aboriginal Corporation	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. Wilinggin Aboriginal Corporation is an agent of Wanjina-Wunggurr (Native Title) Aboriginal Corporation for Ngarinyin people, and is responsible for the management of the Wilinggin Indigenous Protected Area.	Yes
Wunambal Gaambara Aboriginal Corporation (WGAC)	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. WGAC is an agent of Wanjina-Wunggurr (Native Title) Aboriginal Corporation for Wunambal and Gaambara people.	Yes
Daly River/Port Keats Aboriginal Land Trust	Representative Aboriginal Corporation	Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. The Daly River/Port Keats Aboriginal Land Trust holds land on behalf of the Wangka, Lirrga, Wulthirri and Tjanpa peoples under the <i>Aboriginal Land Rights (Northern Territory) Act 1976</i> .	Yes
Larrakia Development Corporation	Representative Aboriginal Corporation	Woodside consults with Larrakia Development Corporation as 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(e) of the Environment Regulations.	Yes

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		LDC is incorporated under ASIC and is led by the Traditional Owner group of Darwin, the Larrakia people	
Top End (Default PBC/CLA) Aboriginal Corporation	Representative Aboriginal Corporation	<p>Woodside has applied its methodology for 'Traditional Custodians and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Spirit Hills Pastoral Lease No.2 native title determination area, for which Top End (Default PBC/CLA) Aboriginal Corporation is the Registered Native Title Body Corporate, is adjacent to the EMBA.</p> <p>The Legune Pastoral Lease native title determination area, for which Top End (Default PBC/CLA) Aboriginal Corporation is the Registered Native Title Body Corporate, is adjacent to the EMBA.</p>	Yes
<i>Native Title Representative Bodies</i>			
Yamatji Marlpa Aboriginal Corporation (YMAC)	Native Title Representative Body	<p>Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>YMAC is the Native Title Representative Body for the Yamatji and Pilbara regions of Western Australia. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders.</p> <p>The NTGAC and Nanda Aboriginal Corporation's nominated representative is YMAC. Woodside has therefore consulted the NTGAC and Nanda Aboriginal Corporation via YMAC.</p> <p>Woodside contacted YMAC to seek guidance with respect to the appropriate Traditional Custodian group(s) to engage with respect to the proposed activity where this was not clear.</p> <p>YMAC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.</p>	Yes
Kimberley Land Council (KLC)	Native Title Representative Body	<p>Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>KLC is the Native Title Representative Body for the Kimberley region of Western Australia. As such, they are not a Prescribed or</p>	Yes

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		Registered Native Title Body Corporate but exist to assist native title claimants and holders. KLC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.	
Northern Land Council (NLC)	Native Title Representative Body	Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations. NLC is the Native Title Representative Body for the northern region of the Northern Territory. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders. NLC's functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.	Yes
Self-identified First Nations Groups			
Ngarluma Yindjibarndi Foundation Ltd (NYFL)	Traditional Custodian - entity	Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations. Prior to the resolution of the Ngarluma and Yindjibarndi native title claim, the Ngarluma and Yindjibarndi registered native title claimants, the NWS JVs and Woodside entered into the Northwest Shelf Agreement 1998. In 1999 the Ngarluma and Yindjibarndi native title claim was settled with the Federal Court appointing, at the request of the common law native title holders, the Ngarluma Aboriginal Corporation (NAC) as PBC to represent the communal interests of the Ngarluma people and the Yindjibarndi Aboriginal Corporation (YAC) as PBC to represent the communal interests of the Yindjibarndi people. Both NAC and YAC are relevant people. NYFL was subsequently created to act as Trustee for the Trust under the Agreement and to carry on the business of enterprise development, investment and social welfare. NYFL self-identified and has advised it is relevant for this EP.	Yes
Local government and community representative groups or organisations			

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Shire of Exmouth	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Exmouth, Learmonth and North West Cape.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Exmouth's area of responsibility overlaps the EMBA.	Yes
Shire of Ashburton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Onslow, Pannawonica, Paraburdoo and Tom Price.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Ashburton's area of responsibility overlaps the EMBA.	Yes
City of Karratha	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Baynton, Baynton West, Bulgarra, Cossack, Dampier, Gap Ridge, Karratha, Karratha Industrial Estate, Jingarri, Madigan, Millars Well, Nickol, Pegs Creek, Point Samson, Roebourne, Whim Creek and Wickham.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Karratha's area of responsibility overlaps the EMBA.	Yes
Shire of Carnarvon	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Babbage Island, Brockman, Browns Range, Carnarvon, Coral Bay, East Carnarvon, Greys Plain, Ingaarda, Kingsford, Morgantown, North Plantations, South Carnarvon, South Plantations.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Carnarvon's area of responsibility overlaps the EMBA.	Yes
Town of Port Hedland	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Cooke Point, Port Hedland, Pretty Pool, Redbank, South Hedland, Wedgefield and Yandeyarra.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Town of Port Hedland's area of responsibility overlaps the EMBA.	Yes
Shire of Wyndham-East Kimberley	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Crossing Falls, Kalumburu, Kununurra, Lake Argyle, Lakeside, Packsaddle, Wyndam	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Wyndham-East Kimberley's area of responsibility overlaps the EMBA.	Yes

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Shire of Derby/West Kimberley	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Derby, Fitzroy Crossing and Camballin	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Derby/West Kimberley's area of responsibility overlaps the EMBA.	Yes
Shire of East Pilbara	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Jigalong, Kiwirrkurra, Kunawarritji, Marble Bar, Newman, Nullagine, Parngurr, Punmu, Warralong	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of East Pilbara's area of responsibility overlaps the EMBA.	Yes
Shire of Broome	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Mile, Bilingurr, Broome, Cable Beach, Cape Leveque, Coconut Well, Djugun, Lombadina, Minyirr, Morell Park, Skuthorpe	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Broome's area of responsibility overlaps the EMBA.	Yes
Shire of Shark Bay	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Billabong, Denham, Monkey Mia, Nanga, Overlander, Useless Loop	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay's area of responsibility overlaps the EMBA.	Yes
Shire of Christmas Island	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Drumsite, Kampong, Poon Saan, Settlement, Silver City, Taman Sweetland	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Christmas Island's area of responsibility overlaps the EMBA. The Shire of Christmas Island's Fisheries Management Committee (FMC) informs and advises on fishery management issues on the island. The Christmas Island Line Fishery is active in the EMBA.	Yes

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City of Greater Geraldton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Ardingly, Beachlands Beatty, Beresford, Bluff Point, Bootenal, Bringoo, Burma Road, Cape Burney, Casuarina, Deepdale, Devils Creek, Drummond Cove, East Chapman, Ellendale, Eradu, Eradu South, Forrester Park, Georgina, Geraldton, Glenfield, Greenough, Indarra, Karloo, Kockatea, Kojarena, Mahomets Flats, Mendel, Meru, Minnenooka, Moonyoonooka, Moresby, Mullewa, Mt Hill, Mt Tarcoola, Narngulu, Northern Gully, Pindar, Rangeway, Rudds Gully, Sandsprings, South Greenough, Spalding, Strathalbyn, Sullivan, Sunset Beach, Tarcoola Beac, Tardun, Tenindewa, Tilbradden, Utakarra, Waggrakine, Walkaway, Wandina, Webberton, West End, Wicherina, Wicherina South, Wilroy, Wongoondy, Wonthella, Woorree.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Greater Geraldton's area of responsibility overlaps the EMBA.	Yes
Shire of Augusta Margaret River	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Augusta, East Augusta, Molloy Island, Prevelly, Witchcliffe, Burnside, Cowaramup, Gracetown, Forest Grove, Leeuwin, Osmington, Karridale, Kudardup, Bramley, Rosa Glen, Margaret River, Redgate, Baudin, Rosa Brook, Boranup, Warner Glen, Deepdene, Scott River, HamelinBay, Alexandra Bridge, Treeton, Gnarabup, Courtenay, Nillup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Augusta Margaret River's area of responsibility overlaps the EMBA.	Yes
Shire of Chapman Valley	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Buller, Oakajee, Howatharra, Nabawa, Nanson, Naraling, White Peak, Yetna, Yuna.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Chapman Valley's area of responsibility overlaps the EMBA.	Yes

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Shire of Dandaragan	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Badgingarra, Cervantes, Dandaragan, Jurien Bay, Regans Ford.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Dandaragan's area of responsibility overlaps the EMBA.	Yes
Shire of Gingin	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Gingin, Gingin Rural/Industrial Estate, Guilderton, Honeycomb Estate, Lancelin, Ledge Point, Marchmont Estate, Moondah Ridge, Ocean Farm, Redfield Park, Seabird, Seaview Park, Sunset Estate, Sovereign Hill, Woodridge.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Gingin's area of responsibility overlaps the EMBA.	Yes
Shire of Northampton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Ajana, Binnu, Horrocks Beach, Isseka, Kalbarri, Northampton, Port Gregory.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Northampton's area of responsibility overlaps the EMBA.	Yes
City of Albany	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Albany, Bakers Junction, Bayonet Head, Big Grove, Bornholm, Cape Riche, Centennial Park, Cheynes, Collingwood Heights, Collingwood Park, Cuthbert, Drome, Elleker, Emu Point, Frenchman Bay, Gledhow, Gnowellen, Green Range, Green Valley, Hunwick, Kalgan, King River, Kojaneerup South, Kronkup, Lange, Little Grove, Lockyer, Lower King, Lowlands, Manypeaks; Marbelup, McKail, Middleton Beach, Millbrook, Milpara, Mindijup, Mira Mar, Mount Clarence, Mount Elphinstone, Mount Melville, Nanarup, Napier, Nullaki, Orana, Palmdale, Port Albany, Redmond, Redmond, Robinson, Sandpatch, Seppings, South National Anzac Centre, Amazing	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Albany's area of responsibility overlaps the EMBA.	Yes

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	Albany Stirling, Spencer Park, Torbay, Torndirrup, Vancouver Peninsula, Walmsley, Warrenup, Wellstead, West Cape Howe, Willyung, Yakamia, Youngs Siding.		
City of Bunbury	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Bunbury, Carey Park, College Grove, Crosslands, East Bunbury, Glen Iris, Glen Padden, Grand Canals, Kinkella, Mangles, Mindalong, Mindalong Heights, Pelican Point, Picton, Rathmines, Sandridge Park, South Bunbury, Tuart Brook, Usher, Vittoria Heights, Withers, Wollaston.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Bunbury's area of responsibility overlaps the EMBA.	Yes
City of Busselton	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Abba River, Abbey, Acton Park, Ambergate, Anniebrook, Boallia, Bovell, Broadwater, Busselton, Carburnup River, Chapman Hill, Dunsborough, Eagle Bay, Geographe, Hithergreen, Jarrahood, Jindong, Kalgup, Koorup, Kealy, Ludlow, Marybrook, Metricup, Naturaliste, North Jindong, Quedjinup, Quindalup, Reinscourt, Ruabon, Sabina River, Siesta Park, Tutunup, Vasse, Walsall, West Busselton, Wilyabrup, Wonnerup, Yallingup, Yallingup Siding, Yalyalup, Yelverton, Yoganup, Yoongarillup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Christmas Island's area of responsibility overlaps the EMBA.	Yes
Town of Cambridge	Local government governed by the Local Government Act 1995 representing the suburbs and localities of City Beach, Floreat, Wembley, West Leederville, parts of Daglish, Shenton Park, Subiaco, Jolimont, Mt Claremont, Wembley Downs.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Town of Cambridge's area of responsibility overlaps the EMBA.	Yes

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Shire of Capel	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Boyanup, Capel, Capel River, Dalyellup, Elgin, Forrest Beach, Gelorup, Gwindinup, Ludlow, North Boyanup, Peppermint Grove Beach, The Plains, Stirling Estate, Stratham.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Capel's area of responsibility overlaps the EMBA.	Yes
Shire of Carnamah	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Carnamah and Eneabba.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Carnamah area of responsibility overlaps the EMBA.	Yes
City of Cockburn	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Atwell, Aubin Grove, Banjup, Beeliar, Bibra Lake, Cockburn Central, Coogee, Coolbellup, Hamilton Hill, Hammond Park, Henderson, Jandakot, Lake Coogee, Leeming, Munster, North Coogee, North Lake, South Lake, Spearwood, Success, Treeby, Wattleup, Yangebup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Cockburn's area of responsibility overlaps the EMBA.	Yes
Shire of Cocos (Keeling) Islands	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Home Island and West Island.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Cocos (Keeling) Islands' area of responsibility overlaps the EMBA.	Yes
Shire of Coorow	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Coorow, Eganu, Green Head, Gunyidi, Leeman, Marchagee, Waddy Forrest, Warradarge.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Coorow's area of responsibility overlaps the EMBA.	Yes
Shire of Denmark	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Bow Bridge, Denmark, Hay, Hazelvale, Kentdale,	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Denmark's area of responsibility overlaps the EMBA.	Yes

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	Kordabup, Mount Lindsay, Mount Romance, Nornalup, Ocean Beach, Parryville, Peaceful Bay, Scotsdale, Shadforth, Tingleddale, Trent, William Bay.		
Shire of Dundas	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Balladonia, Caiguna, Cocklebiddy, Eucla, Fraser Range, Madura Pass, Mundrabilla, Norseman.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Dundas's area of responsibility overlaps the EMBA.	Yes
Town of Cottesloe	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Cottesloe.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Town of Cottesloe's area of responsibility overlaps the EMBA.	Yes
Shire of Esperance	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Bandy Creek, Beaumont, Cascade, Castletown, Chadwick, Condingup, Coomalbidgup, Dalyup, Esperance, Gibson, Grass Patch, Nulsen, Pink Lake, Salmon Gums, Scaddan, Sinclair, West Beach, Windabout.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Esperance's area of responsibility overlaps the EMBA.	Yes
City of Fremantle	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Fremantle, North Fremantle, South Fremantle, White Gum Valley, Beaconsfield, Hilton, O'Connor, Samson.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Fremantle's area of responsibility overlaps the EMBA.	Yes
Shire of Harvey	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Australind, Beela, Benger, Binningup, Brunswick, Cookernup, Harvey, Hoffman, Leschenault, Mornington, Myalup, Parkfield, Roelands, Uduc, Warawarrup, Wellesley, Wokalup, Yarloop.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Harvey's area of responsibility overlaps the EMBA.	Yes

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Shire of Irwin	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Allanooka, Arrowsmith, Bookara, Bonniefield, Dongara, Irwin, Port Denison, Milo, Mt Adams, Mt Horner, Springfield, Yardarino.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Irwin's area of responsibility overlaps the EMBA.	Yes
Shire of Jerramungup	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Boxwood Hill, Bremer Bay, Gairdner, Jacup, Jerramungup, Needilup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Jerramungup's area of responsibility overlaps the EMBA.	Yes
City of Joondalup	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Beldon, Burns Beach, Connolly, Craigie, Currambine, Duncraig, Edgewater, Greenwood, Heathridge, Hillarys, Illuka, Joondalup, Kallaroo, Kingsley, Kinross, Marmion, Mullaloo, Ocean Reef, Padbury, Sorrento, Warwick, Woodvale (part).	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Joondalup's area of responsibility overlaps the EMBA.	Yes
City of Mandurah	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Bouvard, Clifton, Coodanup, Dawesville, Dudley Park, Erskine, Falcon, Greenfields, Halls Head, Herron, Lakelands, Madora Bay, Mandurah, Meadow Springs, Parklands, San Remo, Silver Sand, Wannanup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Mandurah's area of responsibility overlaps the EMBA.	Yes
City of Kwinana	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Anketell, Bertram, Calista, Casuarina, Hope Valley, Kwinana, Kwinana Beach, Leda, Mandogalup, Medina, Naval Base, Orelia, Parmelia, Postans, The Spectacles, Wandii, Wellard.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Kwinana's area of responsibility overlaps the EMBA.	Yes

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Shire of Manjimup	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Manjimup, Balbarrup, Deanmill, Diamond Tree, Dingup, Dixvale, Glenoran, Jardee, Lake Muir, Linfarne, Middlesex, Mordalup, Palgarup, Perup, Quinninup, Ringbark, Smithbrook, Upper Warren, Wilgarrup, Yanmah, Boorara Brook, Crowea, Meerup, Northcliffe, Shannon, Windy Harbour, Broke, North Walpole, Walpole, Beedelup, Callcup, Channybearup, Collins, Eastbrook, Pemberton, Yeagarup.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Manjimup's area of responsibility overlaps the EMBA.	Yes
Town of Mosman Park	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Mosman Park.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Town of Mosman Park's area of responsibility overlaps the EMBA.	Yes
Shire of Nannup	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Barrabup, Bidellia, Carlotta, Cundinup, Darradup, Donnelly River, East Nannup, Jalbarragup, Lake Jasper, Nannup, Nannup Brook, Peerabeelup, Scott River, Scott River East.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Nannup's area of responsibility overlaps the EMBA.	Yes
City of Nedlands	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Dalkeith, Karrakatta, Mt Claremont (part), Nedlands (part), parts of Floreat, Shenton Park, Swanbourne.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Nedlands' area of responsibility overlaps the EMBA.	Yes
City of Rockingham	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Baldivis, Cooloongup, East Rockingham, Golden Bay, Hillman, Karnup, Peron, Port Kennedy,	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Rockingham's area of responsibility overlaps the EMBA.	Yes

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	Rockingham, Safety Bay, Secret Harbour, Shoalwater, Singleton, Waikiki, Wanbro.		
Shire of Ravensthorpe	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Fitzgerald, Hopetoun, Jerdacuttup, Munglinup, Ravensthorpe.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Ravensthorpe's area of responsibility does not overlap the EMBA. Woodside chose to contact Shire of Ravensthorpe at its discretion in line with Section 5.3.4.	No
City of Stirling	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Balcatta, Balga, Carine, Churchlands, Coolbinia (part), Dianella (part), Doubleview, Glendalough (part), Gwelup, Hamersley, Herdsman, Inglewood, Innaloo, North Beach, Osborne Park, Scarborough, Stirling, Trigg, Tuart Hill, Watermans Bay, Wembley (part), Wembley Downs (part), Westminster, Woodlands, Yokine.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Stirling's area of responsibility overlaps the EMBA.	Yes
City of Wanneroo	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Alexander Heights, Alkimos, Ashby, Banksia Grove, Butler, Carabooda, Carramar, Clarkson, Darch, Eglinton, Girrawheen, Gnangara (part), Hocking, Jandabup, Jindalee, Koondoola, Landsdale, Madeley, Marangaroo, Mariginiup, Merriwa, Mindarie, Neerabup, Nowergup, Pearsall, Pinjar, Quinns Rocks, Ridgewood, Sinagra, Tamala Park, Tapping, Two Rocks, Wangara, Wanneroo, Woodvale (part), Yanchep.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The City of Wanneroo's area of responsibility overlaps the EMBA.	Yes
Shire of Waroona	Local government governed by the Local Government Act 1995 representing the suburbs and localities of Hamel, Lake	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.	Yes

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	Clifton, Nanga Brook, Preston Beach, Wagerup, Waroona.	The Shire of Waroona's area of responsibility overlaps the EMBA.	
Exmouth Community Liaison Group (CLG)	The Exmouth CLG represents the interests of a range of local government, industry and community organisations in relation to oil and gas matters in the Exmouth region.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Members are Base Marine, Bgahwan Marine, Cape Conservation Group Inc., DBCA, Department of Defence, Department of Transport, Exmouth Bus Charter, Exmouth Chamber of Commerce and Industry, Exmouth District High School, Exmouth Freight and Logistics, Exmouth Game Fishing Club, Exmouth Tackle and Camping Supplies, Exmouth Visitors Centre, Exmouth Volunteer Marine Rescue, Fat Marine, Gascoyne Development Commission, Gun Marine Services, Ningaloo Lodge, Offshore Unlimited, Shire of Exmouth, BHP Petroleum, Santos, Community Member</p> <p>The Exmouth CLG's area of responsibility under its terms of reference overlaps the EMBA.</p>	Yes
Karratha Community Liaison Group	The Karratha CLG is the recognised community group that represents the interests of a range of local government, industry and community organisations in relation to oil and gas matters in the Pilbara region.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Karratha CLG's area of responsibility under its terms of reference does not overlap the EMBA.</p> <p>Members are WA Police, Karratha Health Care, Development WA, Ngarluma Yindjibarndi Foundation Ltd (NYFL)*, Department of Education, Pilbara Ports Authority, Regional Development Australia, Pilbara Development Commission, Dampier Community Association, City of Karratha, Karratha & Districts Chamber of Commerce and Industry, Horizon Power, Murujuga Aboriginal Corporation (MAC), Department of Local Government, Sport and Cultural Industries</p> <p><i>*NYFL and MAC were consulted directly as described above.</i></p> <p>Under regulation 25(1)(e) of the Environment Regulations, Woodside, at its discretion, chose to assess the KLG as a relevant person.</p>	Yes

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Onslow Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Onslow and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Onslow Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Port Hedland Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Port Hedland and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Port Hedland Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Carnarvon Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Carnarvon and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Carnarvon Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Karratha and Districts Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Karratha and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Karratha and Districts Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Exmouth Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Exmouth and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Exmouth Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes

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East Kimberley Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of East Kimberley and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The East Kimberley Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Derby Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Derby and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.. The Derby Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Broome Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Broome and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Broome Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Mid West Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Geraldton and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Mid West Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Margaret River Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Margaret River and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Margaret River Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes

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Jurien Bay Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Jurien Bay and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Jurien Bay Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Lancelin Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Lancelin and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Lancelin Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Albany Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Albany and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.. The Albany Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Bunbury Geographe Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Bunbury and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Bunbury Geographe Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Busselton Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Busselton and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Busselton Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes

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Dunsborough Yallingup Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the towns of Dunsborough and Yallingup and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Dunsborough Yallingup Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Capel Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Capel and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Capel Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Melville Cockburn Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Melville/Cockburn and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Melville Cockburn Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Denmark Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Denmark and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Denmark Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Esperance Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Esperance and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Esperance Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes

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Fremantle Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Fremantle and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Fremantle Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Peel Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Mandurah and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Peel Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Rockingham Kwinana Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the towns of Rockingham and Kwinana and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Rockingham and Kwinana Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Manjimup Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Manjimup and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Manjimup Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Nannup Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Nannup and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Nannup Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes

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Augusta Chamber of Commerce and Industry	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the town of Augusta and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Augusta Chamber of Commerce and Industry's interests have the potential to be impacted by the proposed activities.	Yes
Christmas Island Business Association	Represents the interests of Christmas Island's business community.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under Regulation 25(1)(d) of the Environment Regulations. The Christmas Island Business Association's interests have the potential to be impacted by the proposed activities.	Yes
Indian Ocean Territories Regional Development Organisation	Responsible for supporting the economic development of Christmas and Cocos (Keeling) Islands.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under Regulation 25(1)(d) of the Environment Regulations. The Indian Ocean Territories Regional Development Organisation's interests have the potential to be impacted by the proposed activities.	Yes
RAC Monkey Mia Dolphin Resort	Accommodation provider within the Shark Bay World Heritage Area.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified RAC Monkey Mia Dolphin Resort as a potentially relevant person. Woodside chose to contact RAC Monkey Mia Dolphin Resort at its discretion in line with Section 5.3.4.	No
Dirk Hartog Island	Tourism business operating accommodation and guided tours and providing four-wheel drive access to Dirk Hartog Island.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified Dirk Hartog Island as a potentially relevant person. Woodside chose to contact Dirk Hartog Island at its discretion in line with Section 5.3.4.	No

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Malay Association of Christmas Island (MACI)	Incorporated association responsible for promoting Malay culture and heritage on Christmas Island and advocating on issues relating to the island in general.	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(d) of the Environment Regulations. to determine MACI's relevance for the proposed activity.</p> <p>The MACI is an incorporated association whose objects are to maintain and promote Malay culture and heritage on Christmas Island as well to advocate on issues relating to the opportunity and prosperity for Malay residents and the island in general.</p> <p>Woodside chose to contact MACI at its discretion in line with Section 5.3.4.</p>	No
Cocos Island Malay Community	Association responsible for promoting Malay culture and heritage on Cocos (Keeling) Island and advocating on issues relating to the island in general.	<p>Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(d) of the Environment Regulations. to determine Cocos Island Malay Community's relevance for the proposed activity.</p> <p>The Cocos Island Malay Community is responsible for promoting Malay culture and heritage on Cocos (Keeling) Keeling Island as well to advocate on issues relating to the opportunity and prosperity for Malay residents and the island in general.</p> <p>Woodside chose to contact Cocos Island Malay Community at its discretion in line with Section 5.3.4.</p>	No
Shark Bay Community Resource Centre	Not-for-profit, community owned and managed organisation which produces a monthly community newspaper.	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The Shire of Shark Bay identified Shark Bay Community Resource Centre as a potentially relevant person.</p> <p>Woodside chose to contact Shark Bay Community Resource Centre at its discretion in line with Section 5.3.4.</p>	No

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██████████	State Member for North West Central	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified ██████████ as a potentially relevant person. Woodside chose to contact ██████████ at its discretion in line with Section 5.3.4.	No
Shark Bay Aviation	Shark Bay-based business offering air services across the Gascoyne, Pilbara, Murchison and Kimberley regions	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified Shark Bay Aviation as a potentially relevant person. Woodside chose to contact Shark Bay Aviation at its discretion in line with Section 5.3.4.	No
Shark Bay Coastal Tours	Shark Bay-based tour company specialising in four-wheel drive tours.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified Shark Bay Coastal Tours as a potentially relevant person. Woodside chose to contact Shark Bay Coastal Tours at its discretion in line with Section 5.3.4.	No
Naturetime Tours	Shark Bay-based tour company offering four-wheel drive tours.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified Naturetime Tours as a potentially relevant person. Woodside chose to contact Naturetime Tours at its discretion in line with Section 5.3.4.	No
Wula Gula Nyinda Eco Cultural Tours	Shark Bay-based tour company offering tours and Indigenous experiences.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Shire of Shark Bay identified Wula Gula Nyinda Eco Cultural Tours as a potentially relevant person.	No

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		Woodside chose to contact Wula Gula Nyinda Eco Cultural Tours at its discretion in line with Section 5.3.4.	
<i>Other non-government groups or organisations</i>			
Australian Conservation Foundation (ACF)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that ACF's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact ACF at its discretion in line with Section 5.3.4.	No
Australian Marine Conservation Society (AMCS)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that AMCS's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact AMCS at its discretion in line with Section 5.3.4.	No
Conservation Council of Western Australia (CCWA)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that CCWA's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	No

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		Woodside chose to contact CCWA at its discretion in line with Section 5.3.4.	
Greenpeace Australia Pacific (GAP)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that GAP's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact GAP at its discretion in line with Section 5.3.4.	No
350 Australia (350A)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine 350A's relevance for the proposed activity. Woodside has assessed that 350A's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact 350A at its discretion in line with Section 5.3.4.	No
Sea Shepherd Australia (SSA)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that SSA's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact SSA at its discretion in line with Section 5.3.4.	No
<i>Research institutes and local conservation groups or organisations</i>			

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Cape Conservation Group (CCG)	Local conservation group focused on protecting the terrestrial and marine environment of the North West Cape	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. CCG's conservation activities have the potential to intersect with the EMBA as the EMBA overlaps North West Cape.	Yes
Protect Ningaloo	Local conservation group focused on protecting the Exmouth Gulf and Ningaloo Reef and Cape Range	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Protect Ningaloo's conservation activities have the potential to intersect with the EMBA as the EMBA overlaps North West Cape and Ningaloo Reef.	Yes
University of Western Australia (UWA)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. There is no known research being undertaken by the UWA that intersects within the EMBA. Woodside chose to contact UWA at its discretion in line with Section 5.3.4.	No
Western Australia Marine Science Institution (WAMSI)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. There is no known research being undertaken by WAMSI that intersects within the EMBA. Woodside chose to contact WAMSI at its discretion in line with Section 5.3.4.	No
Australian Institute of Marine Science (AIMS)	Research institute	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. There is no known research being undertaken by AIMS that intersects within the EMBA. Woodside chose to contact AIMS at its discretion in line with Section 5.3.4.	No

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Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Research institute	<p>Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>There is no known research being undertaken by the CSIRO that intersects within the EMBA.</p> <p>Woodside chose to contact CSIRO at its discretion in line with Section 5.3.4.</p>	No
Other			
Save Our Songlines and/ or [name redacted] and/ or [name redacted]	Non-government organisation	<p>Woodside has applied its methodology for 'Traditional Custodians and nominated representative corporations' and 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine Save Our Songlines' (SOS) and/ or [name redacted] and/ or [name redacted] relevance for the proposed activity.</p> <p>Save Our Songlines' and/ or [name redacted] and/ or [name redacted] stated interest is to stop or pause Scarborough gas and to stop new industry on the Burrup; and oppose planned expansion of the Burrup Hub industry by Woodside, Perdaman and Yara. In addition, their stated interests also include the protection of Murujuga rock art. This scope of the activity under this EP does not fall within their stated interests (see Section 6.6 in the EP).</p>	No

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CONSULTATION ACTIVITIES

Ngujima-Yin Floating Production Storage and Offloading Facility Operations EP Consultation Activities

Woodside has been conducting extensive consultation with relevant persons and other parties for this EP since September 2023 when consultation commenced with interested and affected stakeholders as part of a planned, integrated and consistent approach to stakeholder engagement for Woodside's proposed opportunities. A broad consultation process has been undertaken with relevant persons for the Ngujima-Yin Floating Production Storage and Offloading Facility Operations. Consultation aims to be inclusive, transparent, voluntary, respectful and two-way. Consultation was undertaken by email, letter, phone call and/or meeting.

- Woodside advertised the planned activities proposed for this EP in national, state and relevant local newspapers (see **Record of Consultation, reference 3.1**). Regional newspapers do not require subscription and are available (and in some cases delivered) directly to households. All communities within or adjacent to the EMBA had access to this information via this media. No direct comments or feedback were received from the advertisements.

Newspaper	Coverage	Publication dates
The Australian	National	13 September 2023
The West Australian	Regional (WA)	13 September 2023
The NT News	Regional (NT)	13 September 2023
Pilbara News	Local (WA)	13 September 2023
Midwest Times	Local (WA)	13 September 2023
North West Telegraph	Local (WA)	13 September 2023
Manjimup-Bridgetown Times	Local (WA)	13 September 2023
Kalgoorlie Miner	Local (WA)	13 September 2023
Broome Advertiser	Local (WA)	14 September 2023
South Western Times	Local (WA)	14 September 2023
Kimberley Echo	Local (WA)	14 September 2023
Albany Advertiser	Local (WA)	14 September 2023
Countryman	Local (WA)	14 September 2023
Narrogin Advertiser	Local (WA)	14 September 2023
Great Southern Herald	Local (WA)	14 September 2023

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Harvey Waroona Reporter	Local (WA)	14 September 2023
Augusta Margaret River Times	Local (WA)	15 September 2023
Busselton Dunsborough Times	Local (WA)	15 September 2023
Geraldton Guardian	Local (WA)	15 September 2023
Koori Mail	Indigenous	20 September 2023
National Indigenous Times	Indigenous	26 September 2023

- A Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (see **Section 5.3.4**), which included details such as an activity overview, maps, a summary of key risks and/or impacts and management measures (**Record of Consultation, reference 1.1**).
- Since the commencement of the initial consultation period (September 2023), the stakeholder Consultation Information Sheet (**Record of Consultation, reference 1.1**) has been available on Woodside’s website. The Woodside Consultation Information Sheets include a toll-free 1800 phone number and Woodside’s feedback email address (feedback@woodside.com.au).
- Additional targeted information was provided to relevant marine users including AHO and AMSA – Marine Safety (**Record of Consultation, reference 1.14**). This information included maps and additional information relevant to the specific category of persons. The relevant persons had a 42-day period in which to provide feedback.
- Where appropriate, Woodside conducted phone calls and meetings with relevant persons.
- Where appropriate, targeted follow-up emails were sent to relevant persons who had not provided a response prior to the close of the target feedback period.
- Woodside considered relevant person responses and assessed the merits and relevance of objections and claims about the potential adverse impact of the proposed activity set out in the EP, in accordance with the intended outcome of consultation (see **Section 5.2**).
- Consultation activities undertaken with relevant persons are summarised at **Record of Consultation, Table 2**.
- Engagement undertaken with persons or organisations Woodside assessed as not relevant but chose to contact (see **Section 5.3.4**) or self-identified and Woodside assessed as not relevant are summarised at **Record of Consultation, Table 3**.

Social media

- From 13 September 2023, Woodside commenced a sponsored social media campaign (**Record of Consultation, reference 3.2**) geotargeting local government authorities in Perth Metro, regional areas in the north of WA and regional areas in the south of WA, which are within or coastally adjacent to the EMBA for the proposed activities. The campaign had a reach of more than 1.3 million and brought the proposed activity to the attention of persons who may be interested and advised persons or organisations on how they can find out Woodside’s proposed activities by visiting Woodside’s website.

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Platform	Geotargeted Reach	Post Dates	Impact
Facebook and Instagram	Perth Metro: Users 18+ within 80km	13 September 2023 – 11 October 2023	Reach: 1,146,919 Frequency: 4.42 Impressions: 5,071,662 Clicks: 4780 Click Through Rates%: 0.09
Facebook and Instagram	Regional – North: Users 18+ located within 80km of key coastline towns plus Christmas and Cocos Islands	13 September 2023 – 11 October 2023	Reach: 295,721 Frequency: 3.19 Impressions: 942,344 Clicks: 1153 Click Through Rates%: 0.12
Facebook and Instagram	Regional – South: Users 18+ located within 80km of key coastline towns.	13 September 2023 – 11 October 2023	Reach: 226,182 Frequency: 4.46 Impressions: 1,007,884 Clicks: 1134 Click Through Rates%: 0.11

Community information sessions

- Woodside has held a number of Community Information Sessions where this EP's consultation Information Sheets were available and discussed. See tables in **Record of Consultation, Reference 3.3.1, 3.3.3, 3.3.4, 3.3.5, 3.4.1.**

Date (2023)	Location	Event (if applicable)
18, 19 and 20 September 2023	Karratha, Port Hedland and Roebourne	Community Consultation Roadshow
10 and 11 October 2023	Karratha	Pilbara Summit 2023
16 and 17 October 2023	Carnarvon and Denham	Community Consultation Roadshow
23 October 2023	Exmouth	Community Consultation Roadshow
4 November 2023	Dampier	Dampier Beachside Twilight Markets

Traditional Custodian Specific Consultation

In addition to the approaches above including community information sessions, additional activities were undertaken with relevant Traditional Custodians, which were specifically designed to provide for effective engagement with Traditional Custodians so that information was provided in a form that was readily accessible and appropriate (**Section 5.5**).

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Consultation undertaken specifically with Traditional Custodians for this Environment Plan includes:

- Direct engagement with nominated representative bodies via the contact listed on the ORIC website, requesting advice on how they would like to be engaged and asking whether other members and/or individuals should be consulted. This has resulted in:
- Meetings with directors, elders and any nominated representatives, on country or in Perth
- Requests and offers of resourcing to enable and support consultation
- Exchange of written feedback and correspondence
- Summary Consultation Information Sheet, developed and reviewed by Indigenous representatives in collaboration with technical experts to ensure content is appropriate to the intended recipients, was provided to relevant Traditional Custodian groups (**Record of Consultation, reference 1.2**) and phone calls to provide context to the consultation made.
- Ongoing efforts were made to engage and develop relationships with these bodies via a variety of means such as email, phone calls, alternative contacts, texts, social media and in some cases physical visits.
- Consultation meetings with attendees decided by Traditional Custodian groups, supported by senior Woodside representatives, subject matter experts, First Nations Relations advisers with skills and experience in community engagement. Meetings are developed through a two-way consultation process to ensure effective information sharing via:
 - Mutually agreed agenda avoiding time pressure
 - Encouraging Traditional Custodian attendees to control the pace of the meeting and pause at any time to ask questions, seek clarification or provide feedback
 - Visual aids such as posters, presentations, simplified technical videos and real-world pictures and footage
 - Emphasis on potential planned and unplanned risks and impacts of the activity
 - Ample opportunity for questions and feedback
 - Discussion about ongoing relationship development and opportunities
 - Distribution of hard-copy Consultation Information Sheets (**Record of Consultation, reference 1.1**) and Summary Consultation Information Sheets (**Record of Consultation, reference 1.2**)
 - Meeting all costs such as sitting fees, travel, legal support and executive support and other support required
- Advertising in Indigenous publications such as the Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) (**Record of Consultation, reference 3.1**).
- Woodside has a geotargeted sponsored social media campaign (**Record of Consultation, reference 3.2**) to various communities that are coastally adjacent to the EMBA for the proposed activities.
- The wide-reaching campaign brought the proposed activity to the attention of persons who may be interested and advised persons or organisations how they can find out about Woodside's proposed activities by visiting Woodside's website, which details the intent of consultation with relevant persons under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth). The campaign reached

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around 1,369,350 people and was viewed more than 7 million times across various regions as shown in **Record of Consultation, reference 3.2**.

- These social media posts were developed with input from Indigenous representatives. Social media is a highly effective means to engage Indigenous audiences as outlined in Indigenous Digital Life (Professor Carlson, 2021). Advertisements used language and information appropriate to Indigenous audiences. Feedback from community engagements indicates a high level of penetration for this technique.
- Woodside has employed a diverse range of techniques to allow relevant persons to become aware of the proposed activity and how it may affect their functions, activities or interests, and to understand their ability to provide feedback. The combination of PBC engagement meetings, traditional print media, social media and face-to face community interaction was designed with input from Indigenous representatives and adapted to the audience, so that it provides a wide-ranging opportunity to consult.

Table 2: Consultation Report with Relevant Persons or Organisations

Commonwealth and WA State Government Departments or Agencies – Marine		
Australian Border Force (ABF)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Border Force (ABF) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to ABF on 13 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided ABF with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 13 September 2023, Woodside emailed ABF advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to ABF following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate,	Woodside has addressed maritime security-related issues in Section 6 of the EP based on previous offshore activities.

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	Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.
Department of Foreign Affairs and Trade (DFAT)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DFAT for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to DFAT on 13 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided DFAT with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 13 September 2023, Woodside emailed DFAT advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to DFAT following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside notes the Australian Government is signatory to international agreements with both Timor Leste and Indonesia, which address matters relating to oil spill preparedness and response. In the event of a hydrocarbon spill that is likely to traverse international waters, Woodside will notify the following
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		<p>government agencies as referenced in the Oil Pollution First Strike Plan (Appendix I):</p> <ol style="list-style-type: none"> (1) Verbally notify AMSA and Western Australian departments responsible. Woodside will follow up its AMSA notification by way of an online report via AMSA's website. (2) Other relevant government departments as soon as practicable. These notifications include DFAT via sea.law@dfat.gov.au and globalwatchoffice@dfat.gov.au. <p>No additional measures or controls are required.</p>
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Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DITRDCA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DITRDCA on 15 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activity.
- Woodside has provided the DITRDCA with the opportunity to provide feedback over a 2-month period.

Summary of information provided and record of consultation:

- On 15 December 2023, Woodside emailed DITRDCA advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to DITRDCA following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Australian Fisheries Management Authority (AFMA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Fisheries Management Authority (AFMA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to AFMA on 20 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to AFMA over a 5-month period.

Summary of information provided and record of consultation:

- On 20 September 2023, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 1.34) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 10 October 2023, AFMA emailed to thank Woodside for the advice and:
 - (1) Advised it had no specific comments on the proposal.
 - (2) Encouraged Woodside, if it had not already done so, to engage directly with Commonwealth fishing operators in the area and included contact details for relevant industry associations.

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- On 27 October 2023, Woodside responded thanking AFMA for its email and confirmed it had provided information to relevant fishery licence holders as well as the relevant representative organisations and fishing industry associations.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) AFMA advised it had no specific comments on the proposal.</p> <p>(2) AFMA encouraged Woodside to consult directly with fishing operators who have entitlements to fish within the proposed area.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted AFMA had no comments on the proposal.</p> <p>(2) Woodside confirmed it had consulted individual Commonwealth fishing operators in the area, as well as relevant representative bodies and fishing industry associations.</p> <p>Woodside has consulted AFMA, DAFF - Fisheries, CFA, Tuna Australia, ASBTIA, Northern Prawn Fishery Industry Pty Ltd and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) Woodside has assessed the relevancy of Commonwealth fisheries issues in Section 4.10.1 of the EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional controls or measures are required.</p>

Australian Hydrographic Office (AHO)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Hydrographic Office (AHO) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to AHO on 15 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has provided AHO with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed AHO advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet, shipping lanes map (Record of Consultation, reference 1.14) and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to AHO (Record of Consultation, reference 2.1) following up on the proposed activity and provided the shipping lanes map and a link to the Consultation Information Sheet on Woodside's website.
- **(1)** On 17 October 2023, AHO responded, acknowledging receipt of Woodside's email and noting the data would be registered, assessed, prioritised and validated in preparation for updating navigational charting products.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plans
<p>(1) AHO acknowledged receipt of consultation emails.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted AHO's acknowledgement of its email and that it had no specific feedback for this EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>Woodside will notify the AHO of the location of new permanent infrastructure to enable update of maritime charts, as required, as referenced in PS 1.2 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

Australian Maritime Safety Authority (AMSA) - Marine Safety

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Maritime Safety Authority (AMSA) – Marine Safety for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley

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Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to AMSA – Marine Safety on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to AMSA – Marine Safety over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed AMSA – Marine Safety advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet, GIS shape file, shipping lanes map (Record of Consultation, reference 1.14) and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 25 September 2023, AMSA – Marine Safety thanked Woodside for its email and:
 - (1) Advised that as the infrastructure was already in place, previous advice provided by AMSA remained.
 - (2) Reminded Woodside that vessels should exhibit appropriate lights and shapes to reflect the nature of operation.
 - (3) Confirmed Woodside should evaluate and implement adequate anti-collision measures.
- On 10 October 2023, Woodside thanked AMSA – Marine Safety for its feedback. Woodside also:
 - Noted that previous advice from AMSA regarding these operations remained.
 - Confirmed vessels would exhibit appropriate lights and shapes to reflect the nature of operations and the obligation to comply with the International Rules for Preventing Collisions at Sea.
 - Advised that while Woodside did not propose to implement further anti-collision measures for this activity at this time, collision risk mitigation measures were constantly being evaluated.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
AMSA – Marine Safety provided feedback that: (1) Previous advice from AMSA regarding the operations remained. (2) Vessels should exhibit appropriate lights and shapes.	(1) Woodside noted that previous AMSA – Marine Safety advice regarding the operations remained relevant. (2) Woodside confirmed vessels would exhibit appropriate lights and shapes to reflect the nature of operations and the obligation to comply with the International Rules for Preventing Collisions at Sea.	(1) Not required. (2, 3) The EP contains a number of controls that address AMSA’s feedback on lighting and compliance with the international rule for preventing collisions at sea, specifically safety zones are established, vessels are

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<p>(3) Woodside should evaluate and implement adequate anti-collision measures. While feedback has been received, there were no objections or claims.</p>	<p>(3) Woodside advised it did not propose to implement further anti-collision measures for the activity at this time, but collision risk mitigation measures were constantly being evaluated and implemented. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).</p>	<p>required to comply with marine orders and the facility's collision prevention system will be implemented. Woodside will notify the AHO of the location of new permanent infrastructure to enable update of maritime charts, as required, as referenced in PS 1.2 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.</p>
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Australian Maritime Safety Authority (AMSA) – Marine Pollution

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Maritime Safety Authority (AMSA) – Marine Pollution for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to AMSA – Marine Pollution on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided AMSA - Marine Pollution with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed AMSA – Marine Pollution advising of the proposed activity (Record of Consultation, reference 1.15) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder email to AMSA – Marine Pollution following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. On 21 December 2023, Woodside emailed AMSA – Marine Pollution (Record of Consultation, reference 1.109) and provided a copy of the Oil Pollution First Strike Plan (FSP) (Appendix I) and invited AMSA – Marine Pollution to comment on the activity. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has addressed oil pollution planning and response in Appendix H. No additional measures or controls are required.
Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Agriculture, Fisheries and Forestry (DAFF) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to DAFF - Fisheries on 15 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided DAFF - Fisheries with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p>		

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- On 15 September 2023, Woodside emailed DAFF – Fisheries advising of the proposed activity (Record of Consultation, reference 1.33) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to DAFF – Fisheries following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has consulted AFMA, CFA and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Vessels are required to comply with the Australian Biosecurity Act 2015, specifically the Australian Ballast Water Management Requirements (as defined under the Biosecurity Act 2015) (aligned with the International Convention for the Control and Management of Ships’ Ballast Water and Sediments) to prevent introducing IMS. Vessels will be assessed and managed to prevent the introduction of invasive marine species in accordance with Woodside’s Invasive Marine Species Management Plan (see Section 6.7.4 of the EP).</p> <p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>Woodside will provide notification of significant change, as appropriate, to AFMA, DAFF – Fisheries, CFA, DPIRD, Recfishwest and WAFIC, as referenced in Section 7.10 of the EP.</p> <p>No additional measures or controls are required.</p>

Department of Defence (DoD)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Defence (DoD) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DoD on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to DoD over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed DoD advising of the proposed activity (Record of Consultation, reference 1.7) and provided a Consultation Information Sheet, defence map (Record of Consultation, reference 1.8) and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website as well as the defence map.
- On 25 October 2023, DoD thanked Woodside for its email and provided feedback regarding:
 - (1) The location of the activity areas within an exercise area and restricted airspace.
 - (2) Unexploded ordinance (UXO) that may be present on and in the seafloor, and that Woodside must inform itself as to the risks associated with conducting activities in that area, with the Commonwealth of Australia taking no responsibility for reporting the UXO in the area, identifying or removing UXO from the area, or any loss or damage suffered or incurred by Woodside or any third party arising out of, or directly related to, UXO in the area.
 - (3) DoD's notification requirements including liaison with the Australian Hydrographic Service/Office (AHS/AHO).
- On 1 November 2023, Woodside thanked DoD for its feedback and confirmed:
 - It had noted the location of activity areas and the presence of exercise areas and restricted airspace.
 - It had noted the advice regarding location, identification, removal or damage to equipment from unexploded ordinances (UXO)s.
 - The Australian Hydrographic Service/Office (AHS/AHO) had been engaged for this activity and is part of the activity notification protocols.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>DoD provided feedback on:</p> <p>(1) The location of exercise areas and restricted airspace.</p> <p>(2) The risk of unexploded ordnance (UXO) in the area.</p> <p>(3) The need for Woodside to continue liaison with AHO and ensure AHO is notified three weeks prior to the actual commencement of activities.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside assessed DoD's feedback and confirmed:</p> <p>(1) It had noted DoD's advice on the location of activity areas within an exercise area and restricted airspace.</p> <p>(2) It had noted the DoD's advice with respect to the risk, location, identification, removal or damage from UXO.</p> <p>(3) The AHO had been engaged by Woodside for these activities and was included in Woodside's activity notification protocols.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1, 2) Woodside has recorded the defence areas, facilities and UXOs overlapping the Operational Area and/or EMBA in Section 4.10.9 of the EP.</p> <p>(3) Woodside will notify the AHO of the location of new permanent infrastructure to enable update of maritime charts, as required, as referenced in PS 1.2 of this EP. Notifying the AHO provides DoD with information of the PAP through maritime safety information.</p> <p>No additional measures or controls are required.</p>
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Department of Primary Industries and Regional Development (DPIRD)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Primary Industries and Regional Development (DPIRD) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DPIRD on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside sent follow-up email seeking feedback on the proposed activities.
- Woodside has provided DPIRD with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 22 September 2023, Woodside emailed DPIRD advising of the proposed activity (Record of Consultation, reference 1.38) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to DPIRD following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has consulted DPIRD, WAFIC, and relevant individual licence holders (via WAFIC).</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Woodside has assessed the relevancy of State fisheries issues in Section 4.10.1 of the EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>Woodside will provide notification of significant change, as appropriate, to AFMA, DAFF – Fisheries, CFA, DPIRD, Recfishwest and WAFIC, as referenced in Section 7.10 of the EP.</p> <p>No additional measures or controls are required.</p>
<p>Department of Transport (DoT)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Transport (DoT) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to DoT on 13 September 2023 based on their function, interest and activities. 		

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to DoT over a 5-month period.

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed DoT advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- **(1)** On 02 October 2023, DoT responded to Woodside's email and asked to be consulted if there is a risk of a spill impacting State waters.
- On 04 October 2023, Woodside responded thanking DoT for its email and confirming DoT will be consulted if there is a risk of a spill impacting State waters from the proposed activities.
- On 21 December 2023, Woodside emailed DoT (Record of Consultation, reference 1.107) and provided a copy of the Oil Pollution First Strike Plan (FSP) (Appendix I) and invited DoT to comment on the activity.
- On 1 January 2024, DoT responded thanking Woodside for providing the Oil Pollution First Strike Plan for the Ngujima-Yin operations. DoT advised the plan had been reviewed. DoT also:
 - **(2)** Provided a comment on whether any dispersant efficacy testing had been done on the Ngujima-Yin topsides blend, and if so, what were the efficacy results.
- On 14 February 2024, Woodside responding thanking DoT for its email. Woodside:
 - Advised the topsides blend at Ngujima-Yin changed depending on which of the wells were being produced from in a greater proportion at any time.
 - Provided results of the historical dispersant efficacy testing data used for the blend.
 - Advised it was currently planning on refreshing its dispersant efficacy testing for operating assets and, at that time, would endeavour to take a sample of a "heavier" blend from Ngujima-Yin topsides for testing purposes.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) DoT requested to be consulted if there was a risk of a spill impacting State waters.</p> <p>(2) DoT commented on whether dispersant efficacy testing had been done on the Ngujima-Yin topsides blend, and what the results were.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside has addressed DoT's feedback, including confirming that if there was a risk of a spill impacting State waters, DoT would be consulted.</p> <p>(2) Woodside is currently planning to refresh its dispersant efficacy testing for operating assets. Woodside advised DoT the topsides blend at Ngujima-Yin changed depending on well production. Woodside provided results of historical dispersant efficacy testing data used for the blend.</p>	<p>(1) Woodside will consult DoT if there is a spill impacting State water from the proposed activity, as referenced in the Oil Pollution First Strike Plan (Appendix I).</p> <p>(2) Not required.</p> <p>No additional measures or controls are required.</p>

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 in this EP).</p>	
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Department of Planning, Lands and Heritage (DPLH)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Planning, Lands and Heritage (DPLH) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DPLH on 13 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to DPLH over a 5-month period.

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed DPLH advising of the proposed activity (Record of Consultation, reference 1.39) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to DPLH following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.
- On 18 October 2023, DPLH thanked Woodside for the opportunity to provide feedback and:
 - (1) Confirmed it administered Crown land within the boundaries of the State of Western Australia, including coastal waters out to three nautical miles offshore.
 - (2) Recommended consultation with the Department of Biodiversity, Conservation and Attractions (DBCA), given the proximity of the proposal to Marine Reserve 2.
 - (3) Noted that due to the proposal’s location outside of coastal waters, it had no further comment to make.

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- On 6 November 2023, Woodside responded thanking DPLH for its feedback. Woodside confirmed it had consulted DBCA for the EP and acknowledged that, due to the operation’s location outside of coastal waters, DPLH had no further comment.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) DPLH confirmed it administered Crown land in WA, including coastal waters out to three nautical miles offshore.</p> <p>(2) Due to the proximity of the proposal to Marine Reserve 2, DPLH recommended Woodside consult the Department of Biosecurity, Conservation and Attractions (DBCA).</p> <p>(3) DPLH advised it had no further comment given the operation’s location outside coastal waters.</p> <p>While feedback has been received, there have been no objections or claims.</p>	<p>(1) Woodside noted DPLH’s area of administration.</p> <p>(2) Woodside confirmed to DPLH that DBCA had also been consulted for this EP.</p> <p>(3) Woodside acknowledged that DPLH had no further comment on the proposal.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 in this EP).</p>	<p>(1) Not required.</p> <p>(2) Woodside has assessed DBCA as a relevant person for this EP (see Appendix F, Table 1) in accordance with regulation 25(1) of the Environment Regulations and consulted it alongside DPLH.</p> <p>(3) Not required.</p> <p>The Environment Plan demonstrates that there are no known underwater heritage sites or shipwrecks within the Petroleum Activities Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Sections 4.10.4 and 6.6). While impacts to underwater heritage sites or shipwrecks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 6.8.</p> <p>No additional measures or controls are required.</p>

Western Australian Museum

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with WA Museum for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

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- Consultation Information provided to WA Museum on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to WA Museum over a 5-month period.

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed WA Museum advising of the proposed activity (Record of Consultation, reference 1.10) and provided a Consultation Information Sheet, list of shipwrecks and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 October 2023, WA Museum responded thanking Woodside for the information. WA Museum:
 - **(1)** Advised that under the Underwater Heritage Act 2018, proponents should, in the first place, contact DCCEEW as the Commonwealth regulator.
 - **(2)** Directed Woodside to refer to the Commonwealth Government's Underwater Cultural Heritage Guidance for Offshore Developments regarding UCH assessments and draft Guidelines for Working in the Near and Offshore Environment to Protect Underwater Cultural Heritage.
 - **(3)** Recommended that Woodside engages a suitably qualified and experienced maritime archaeologist to undertake a UCH Desktop Assessment to identify Aboriginal and non-Aboriginal UCH within the project area.
 - **(4)** Recommended that Woodside consult with Traditional Owners where appropriate if the project involves seabed disturbance in water shallower than 130 metres.
- On 15 November 2023, Woodside responded and thanked WA Museum for its feedback. Woodside:
 - Confirmed it had consulted the Commonwealth regulator, DCCEEW, for this EP.
 - Confirmed it referred to the Commonwealth Government's Underwater Cultural Heritage Guidance for Offshore Developments regarding UCH assessments and draft Guidelines for Working in the Near and Offshore Environment to Protect Underwater Cultural Heritage.
 - Noted that as this EP involved ongoing operations, mapping and identification for non-Aboriginal UCH within the project area had previously been completed.
 - Advised that Woodside engaged a desktop review by qualified and experienced maritime archaeologists for seabed disturbing activities to a depth of approximately 130m. As the shallowest water depth for the Operational Area of this activity is 180m, Woodside considered the projects area to be beyond the depth contours for potential Aboriginal UCH.
 - Confirmed that while this activity did not involve seabed disturbance in water shallower than 130m, Woodside consulted with Traditional Owners in the course of preparing EPs and also engaged in ongoing consultation subsequent to the approval of EPs.
 - As per Woodside's ongoing consultation approach, feedback and comments received continued to be assessed and responded to, as required, through the life of an EP.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Pilbara Ports Authority on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Pilbara Ports Authority with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Pilbara Ports Authority advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Pilbara Ports Authority following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Kimberley Ports Authority

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Kimberley Ports Authority for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

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- Consultation Information provided to Kimberley Ports Authority on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Kimberley Ports Authority with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Kimberley Ports Authority advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Kimberley Ports Authority following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Mid West Ports Authority

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Mid West Ports Authority for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Mid West Ports Authority on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided the Mid West Ports Authority with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Mid West Ports Authority advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Mid West Ports Authority following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Fremantle Port Authority

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Fremantle Ports for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Fremantle Ports on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Fremantle Ports with the opportunity to provide feedback over a 5-month period.

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Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Fremantle Ports advising of the proposed activity (Record of Consultation, reference 1.36 and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Fremantle Ports following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Southern Ports – Albany and Bunbury

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Southern Ports – Albany and Bunbury for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Southern Ports – Albany and Bunbury on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Southern Ports – Albany and Bunbury with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 21 September 2023, Woodside emailed Southern Ports – Albany and Bunbury advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Southern Ports – Albany and Bunbury following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.
Port of Christmas Island		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Port of Christmas Island for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Port of Christmas Island on 15 December 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Port of Christmas Island with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p>		

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- On 15 December 2023, Woodside emailed Port of Christmas Island advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to Port of Christmas Island following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Port of Cocos (Keeling) Islands

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Port of Cocos (Keeling) Islands for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Port of Cocos (Keeling) Islands on 18 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Port of Cocos (Keeling) Islands with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 18 December 2023, Woodside emailed Port of Cocos (Keeling) Islands advising of the proposed activity (Record of Consultation, reference 1.107) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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<ul style="list-style-type: none"> On 12 January 2024, Woodside sent a reminder email to Port of Cocos (Keeling) Islands following up on the proposed activity (Record of Consultation, reference 2.21) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Commonwealth and State Government Departments or Agencies – Environment

Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Agriculture, Fisheries and Forestry (DAFF) - Biosecurity for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity on 16 October 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided DAFF - Biosecurity with the opportunity to provide feedback over a 4-month period.

Summary of information provided and record of consultation:

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- On 16 October 2023, Woodside emailed DAFF - Biosecurity advising of the proposed activity (Record of Consultation, reference 1.57) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 3 November 2023, Woodside sent a reminder email following up on the proposed activity (Record of Consultation, reference 2.15) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16). 7.1.16	Vessels are required to comply with the Australian Biosecurity Act 2015, specifically the Australian Ballast Water Management Requirements (as defined under the Biosecurity Act 2015) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent introducing IMS. Vessels will be assessed and managed to prevent the introduction of invasive marine species in accordance with Woodside's Invasive Marine Species Management Plan (see Section 6.7.4 of the EP). No additional measures or controls are required.

Department of Climate Change, Energy, the Environment and Water (DCCEEW)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Climate Change, Energy, the Environment and Water (DCCEEW) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DCCEEW on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has addressed and responded to DCCEEW over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed DCCEEW advising of the proposed activity (Record of Consultation, reference 1.9) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 October 2023, DCCEEW responded thanking Woodside for contacting the Department in relation to this EP. DCCEEW:
 - **(1)** Advised Underwater Cultural Heritage (UCH) may potentially be impacted by planned or unplanned activities or events in relation to offshore petroleum activities.
 - **(2)** Noted Woodside was already aware of the *Underwater Cultural Heritage Act 2018* (UCH Act 2018) and its requirements based on communication received during previous EP consultations.
 - **(3)** Provided a summary of legislation and protections, key requirements and obligations, and management considerations and recommendations from the UCH Act 2018.
- On 15 November 2023, Woodside responded and thanked DCCEEW for its email. Woodside:
 - Confirmed it was aware of the legislative requirements of the Underwater Cultural Heritage Act 2018.
 - Noted the Department’s summary of legislation and protections, key responsibilities and obligations for proponents, and management recommendations.
 - Confirmed it referred to the Department’s UCH Guidance for Offshore Developments document and draft Guidelines for Working in the Near and Offshore Environment to Protect Underwater Cultural Heritage.
 - Confirmed mapping and identification for non-Aboriginal UCH with the project area had previously been completed for these ongoing activities.
 - Advised the shallowest water depths in the Operational Area, at 180m, were considered beyond the 130m depth contours for potential Aboriginal UCH.
 - Confirmed it consulted with communities and Traditional Owners in the course of preparing EPs and engaged in ongoing consultation subsequent to the approval of EPs.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
DCCEEW provided feedback on: (1) UCH may potentially be impacted by planned or unplanned activities related to offshore petroleum activities. (2) It noted Woodside is already aware of the Underwater Cultural Heritage Act 2018.	(1) Woodside confirmed it referred to the Department’s UCH Guidance for Offshore Developments document and draft Guidelines for Working in the Near and Offshore Environment to Protect Underwater Cultural Heritage. Woodside also confirmed that as these are ongoing operations, mapping for non-Aboriginal UCH has previously been completed. Woodside noted that the	(1) The EP demonstrates that there are no known underwater heritage sites or shipwrecks within the Petroleum Activities Area and identifies that there are no credible impacts to the values of any underwater heritage or shipwrecks as a result of planned activities (Section 4.10.4 and Section 6.6). While impacts to underwater heritage sites or shipwrecks are possible in the event of

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<p>(3) A summary of legislation and protections, key responsibilities and obligations, and management considerations and recommendations from the UCH Act 2018.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>shallowest water depths for this activity were 180m, which is considered beyond the depth contours for potential Aboriginal UCH.</p> <p>(2) Woodside confirmed it was aware of the legislative requirements of the Underwater Cultural Heritage Act 2018.</p> <p>(3) Woodside noted the Department’s summary of key legislation and protections, responsibilities and obligations, and management considerations and recommendations from the UCH Act 2018.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Section 6.8 of this EP.</p> <p>(2, 3) Not required.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
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Director of National Parks (DNP)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Director of National Parks (DNP) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DNP on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent follow up emails seeking feedback on the proposed activities.
- Woodside has provided Director of National Parks with the opportunity to provide feedback over a 5-month period.

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Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed DNP advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to DNP following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.
- On 9 November 2023, Woodside sent a second reminder email to DNP following up on the proposed activity (Record of Consultation, reference 2.17) and included a link to the Consultation Information Sheet on Woodside’s website.
- On 7 December 2023, DNP responded to Woodside and apologised for the delayed response. DNP noted that:
 - **(1)** Based on the information provided, the planned activity did not overlap any Australian Marine Parks (AMPs) therefore there were no authorisation requirements from the DNP.
 - **(2)** To assist in the preparation of an EP for petroleum activities, NOPSEMA has worked closely with Parks Australia to develop and publish a guidance note that outlines what titleholders need to consider and evaluate. Titleholders should ensure the EP:
 - Identified and managed all impacts and risks on Australian marine park values (including ecosystem values) and had considered all options to avoid or reduce them to as low as reasonably practicable.
 - Clearly demonstrated the activity would not be inconsistent with the North-west Marine Parks Network Management Plan 2018.
 - **(3)** It did not require further notification of progress made in relation to this activity unless details regarding the activity changed and resulted in an overlap with a marine park or new impact, or for emergency responses.
- On 14 December 2023, Woodside responded thanking DNP for its email and:
 - Noted DNP’s confirmation that planned activities did not overlap any AMPs and there were no authorisation requirements.
 - Confirmed Woodside had taken into consideration the Petroleum Activities and Australian Marine Parks guidance note to ensure the EP:
 - Identified and managed all impacts and risks on AMP values (including ecosystem values) to an acceptable level.
 - Clearly demonstrated that the activities would not be inconsistent with the North-west Marine Parks Network Management Plan 2018.
 - Confirmed Woodside would notify DNP in relation to these activities if details regarding the activities changed and resulted in an overlap with or new impact to a marine park, or for emergency responses.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>DNP advised:</p> <p>(1) Planned activities do not overlap any Australian Marine Parks and there are therefore no authorisation requirements from the DNP.</p> <p>(2) Woodside should ensure EPs identify and manage all impacts and risks on AMP values, and clearly demonstrate that activities will not be inconsistent with the management plan.</p> <p>(3) It does not require further notification of progress unless details regarding the activity change and result in an overlap with a marine park or new impact, or for emergency responses.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted the DNP's confirmation that planned activities did no overlap AMPs and there are no authorisation requirements.</p> <p>(2) Woodside confirmed it had taken into consideration the Petroleum Activities and Marine Parks guidance note to ensure the EP identified and managed all risks on AMP values, and clearly demonstrated that activities will not be inconsistent with the management plan.</p> <p>(3) Woodside confirmed it would notify DNP if activities changed and resulted in an overlap with or new impact to a marine park, or for emergency responses.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) The EP demonstrates how Woodside will identify and manage all impacts and risks on Australian marine park values (including ecosystem values) to an ALARP and acceptable level and that the activity is not inconsistent with the management plan (see Section 6.8 of the EP).</p> <p>(3) Woodside will provide notification of significant change, as appropriate, to relevant persons as referenced in Section 7.10 of the EP. Woodside will ensure DNP is made aware of any incidences within a marine park for the activity, as per the commitment in the Oil Pollution First Strike Plan (Appendix I).</p> <p>No additional measures or controls are required.</p>
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Ningaloo Coast World Heritage Advisory Committee (NCWHAC)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Ningaloo Coast World Heritage Advisory Committee (NCWHAC) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to NCWHAC on 13 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent follow up emails seeking feedback on the proposed activities.

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- Woodside has provided NCWHAC with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed NCWHAC advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community.
- On 16 October 2023, Woodside sent a reminder email to NCWHAC following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.
- On 9 November 2023, Woodside sent a second reminder email to NCWHAC following up on the proposed activity (Record of Consultation, reference 2.17) and included a link to the Consultation Information Sheet on Woodside’s website. No response was received.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.

Department of Biodiversity, Conservation and Attractions (DBCA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Biodiversity, Conservation and Attractions (DBCA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DBCA on 13 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community.

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- Woodside has addressed and responded to DBCA over a 5-month period.

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed DBCA advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 23 October 2023, DBCA responded thanking Woodside for the email and consultation information. DBCA noted:
 - **(1)** The operations were in vicinity of reserves managed by DBCA under the CALM act and given the ecological importance of areas potentially affected by a hydrocarbon release from the proposed activities, it was considered important that the baseline values and state of the potentially affected environment were appropriately understood and documented prior to operations commencing.
 - **(2)** It would like to have confidence that Woodside had established appropriate baseline survey data on the current state of areas supporting important ecological values and any current contamination if present within the area of potential impact of hydrocarbon releases.
 - **(3)** It undertakes monitoring in marine parks and reserves and published monitoring reports which are available on its website, however Woodside should be aware this monitoring is targeted to inform DBCA's values and objectives and is not necessarily suitable to provide baseline information for oil spill risk assessment and management planning.
 - **(4)** It recommended Woodside refer to the Department of Climate Change, Energy, the Environment and Water's National Light Pollution Guidelines for Wildlife as a best-practice industry standard for managing potential impacts of light pollution on marine fauna.
 - **(5)** In the event of a hydrocarbon release, it was requested that Woodside notify DBCA's Pilbara regional office as soon as practicable on (08) 9182 2000.
 - **(6)** It would not implement an oiled wildlife management response on behalf of a petroleum operator except as part of a whole of government response mandated by regulatory decision makers.
 - **(7)** Woodside should refer to the Department of Transport's web content regarding marine pollution and the Offshore Petroleum Industry Guidance Note of 2020 titled Marine Oil Pollution: Response and Consultation Arrangements.
- On 31 October 2023, following feedback from the Shire of Shark Bay that the DBCA's Shark Bay office may also wish to provide feedback, Woodside emailed DBCA Shark Bay advising of the proposed activity (Record of Consultation, reference 1.61) and provided a Consultation Information Sheet. Woodside noted in the email that DBCA's main department had already provided feedback on the activity.
- On 15 November 2023, Woodside responded thanking DBCA's main department for its feedback on 23 October 2023. Woodside:
 - Confirmed it maintained knowledge and an understanding of areas of ecological importance within and adjacent to operational areas.
 - Advised its oil spill scientific monitoring program would provide for a quantitative assessment of the overall environmental impacts in the event of an unplanned hydrocarbon release.
 - Confirmed the lighting associated with the Ngujima-Yin FPSO Facility Operations EP and any associated activity vessels was required as a priority for safe operation.

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- Confirmed it had considered DCCEEW’s National Light Pollution Guidelines with respect to vessel activities. The impact assessment determined that the impacts of lighting were as low as reasonably practicable.
 - Advised it had incorporated the DBCA Pilbara regional office telephone number as part of the notifications listed in the Oil Pollution First Strike Plan, which describes the incident management structure, notification and reporting requirements, the Operational Area, activity specific credible spill scenarios, and the hydrocarbon spill response strategies available.
 - Noted that DBCA would not implement an oiled wildlife management response on behalf of a petroleum operator.
- On 15 December 2023, Woodside sent a reminder email to the DBCA’s Shark Bay office following up on the proposed activity (Record of Consultation, reference 2.19) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DBCA provided feedback related to:</p> <p>(1) Ecologically important areas including marine parks and coastal conservation reserves in the vicinity of the proposed operations.</p> <p>(2) The establishment of appropriate baseline survey data on the current state of areas.</p> <p>(3) Encouraging Woodside to acquire the necessary information to implement a Before-After Control Impact (BACI) framework.</p> <p>(4) Recommending Woodside refers to DCCEEW’s National Light Pollution Guidelines for Wildlife.</p> <p>(5) Its ‘Incidents and Emergency process, including that Woodside notify DBCA’s Pilbara office as soon as practicable in the event of a hydrocarbon release.</p> <p>(6) The implementation of an oiled wildlife management response.</p> <p>(7) Woodside should refer to the DoT’s web content on marine pollution, and the guidance note Marine Oil Pollution: Response and Consultation Arrangements.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside reaffirmed to DBCA that areas of ecological importance in the proximity of the Environment Plan Operational Areas would not be impacted by planned activities.</p> <p>(2) Woodside confirmed it maintained knowledge and an understanding of areas of ecological importance adjacent to Operational Areas.</p> <p>(3) Woodside confirmed its oil spill scientific monitoring program (SMP) would provide for a quantitative assessment of the overall environmental impacts in the event of an unplanned hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors.</p> <p>(4) Woodside confirmed it had considered DCCEEW’s National Light Pollution Guidelines for Wildlife and that lighting associated with this EP was required as a priority for safe operation.</p> <p>(5) Woodside noted DBCA’s Incidents and Emergency Response and confirmed the DBCA Pilbara number had been incorporated as part of the Oil Pollution First Strike Plan.</p>	<p>(1) The Environment Plan demonstrates that the proposed activities are outside the boundaries of a proclaimed State Marine Park and identifies that there are no credible impacts to the values of any State Marine Parks as a result of planned activities (Section 4.9.4 and Section 6.8 of the EP). While impacts to Commonwealth Marine Parks are possible in the event of an unplanned hydrocarbon spill, Woodside considers it adopts appropriate controls to prevent a hydrocarbon spill and controls to respond in the highly unlikely event of a hydrocarbon spill, as demonstrated in Sections 6.8.3-6.8.10 of the EP.</p> <p>(2, 3) Under the Oil Spill Scientific Monitoring Program preparedness, an annual review and update to environmental baseline studies database is completed and documented as described in Section 7.7.2 of this EP.</p> <p>(4) Woodside’s impact assessment for light emissions is based on recommendations of the National Light Pollution Guidelines for Wildlife (see Section 6.6.7).</p> <p>(5) DBCA’s Pilbara phone number has been incorporated into the Oil Pollution First Strike Plan for this EP (see Appendix I).</p>

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	<p>(6) Woodside noted DBCA would not implement an oiled wildlife management response on behalf of a petroleum operator.</p> <p>(7) Woodside noted DBCA's reference to DoT's marine oil pollution content.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).</p>	<p>(6) Woodside's Oiled Wildlife Response is included in the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) for this EP (see Appendix H).</p> <p>(7) Woodside refers to the specified marine oil pollution content and guidance note in its First Strike Plan for this activity (Appendix I).</p> <p>No additional measures or controls are required.</p>
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Department of Industry, Tourism and Trade (DITT) - NT Fisheries

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NT Fisheries for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to NT Fisheries on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided NT Fisheries with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed NT Fisheries advising of the proposed activity (Record of Consultation, reference 1.39) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to NT Fisheries following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP. No additional measures or controls are required.

Department of Industry, Tourism and Trade (DITT) – Aquatic Biosecurity

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DITT – Aquatic Biosecurity for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DITT – Aquatic Biosecurity on 15 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided DITT – Aquatic Biosecurity with the opportunity to provide feedback over a 2-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed DITT – Aquatic Biosecurity, advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 19 January 2024, Woodside sent a reminder email to DITT – Aquatic Biosecurity following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>No additional measures or controls are required.</p>
<p>Department of Environment, Parks and Water Security (DEPWS)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Environment, Parks and Water Security (DEPWS) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to DEPWS on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided DEWS with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 22 September 2023, Woodside emailed DEPWS advising of the proposed activity (Record of Consultation, reference 1.40) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to DEPWS following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>No additional measures or controls are required.</p>
<p>Northern Territory Environment Protection Authority (NTEPA)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Northern Territory Environment Protection Authority (NTEPA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to NTEPA on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided NTEPA with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 22 September 2023, Woodside emailed NTEPA advising of the proposed activity (Record of Consultation, reference 1.40) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to NTEPA following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	No additional measures or controls are required.
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Northern Territory Department of Infrastructure, Planning and Logistics (DIPL) – Marine Safety

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DIPL – Marine Safety for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to DIPL – Marine Safety on 15 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided DIPL – Marine Safety with the opportunity to provide feedback over a 2-month period.

Summary of information provided and record of consultation:

- On 15 December 2023, Woodside emailed DIPL – Marine Safety advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to DIPL – Marine Safety following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where	No additional measures or controls are required.

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	appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	
Commonwealth and State Government Departments or Agencies – Industry		
Department of Industry, Science and Resources (DISR)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Industry, Science and Resources (DISR) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to DISR on 13 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided DISR with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 13 September 2023, Woodside emailed DISR advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to DISR following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the	No additional measures or controls are required.

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	EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	
Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to DEMIRS on 13 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided DEMIRS with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 13 September 2023, Woodside emailed DEMIRS advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to DEMIRS following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should further feedback be received, it will be assessed and, where appropriate, Woodside will	No additional measures or controls are required.

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	<p>apply its Management of Change and Revision process (see Section 7.1.16 of the EP).</p>	
<p>Department of Industry, Tourism and Trade (DITT) – Mining and Energy</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DITT – Mining and Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to DITT – Mining and Energy on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has addressed and responded to DITT – Mining and Energy over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 22 September 2023, Woodside emailed DITT – Mining and Energy, advising of the proposed activity (Record of Consultation, reference 1.40) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to DITT – Mining and Energy following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. • (1) On 30 October 2023, DITT – Mining and Energy thanked Woodside for its email and advised it had no comment. • On 31 October 2023, Woodside responded thanking DITT – Mining and Energy for its email and noted it had no comment. • On 15 December 2023, Woodside emailed DITT – Mining and Energy to confirm whether its feedback encompassed the Aquatic Biosecurity arm of DITT. • (2) On 15 December 2023, DITT – Mining and Energy advised that Woodside should consult Aquatic Biosecurity separately. • On 15 December 2023, Woodside thanked DITT – Mining and Energy for the advice and confirmed it would contact the Aquatic Biosecurity division. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) DITT – Mining and Energy advised it had no comment.</p> <p>(2) In response to a query from Woodside, DITT – Mining and Energy confirmed Woodside should consult the Aquatic Biosecurity arm of DITT separately.</p> <p>While feedback has been received, there were no objections or comments.</p>	<p>(1) Woodside noted DITT – Mining and Energy had no comment on the proposed activity.</p> <p>(2) Woodside confirmed it would consult the Aquatic Biosecurity arm of DITT separately.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) Woodside has included DITT – Aquatic Biosecurity in its Assessment of Relevancy (See Appendix F, Table 1) based on advice from DITT – Mining and Energy.</p> <p>No additional measures or controls are required.</p>

Commonwealth Commercial fisheries and representative bodies

North West Slope and Trawl Fishery

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with North West Slope and Trawl Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to North West Slope and Trawl Fishery on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activity.
- Woodside has provided the North West Slope and Trawl Fishery with the opportunity to provide feedback over a 5-month period.

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Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed North West Slope and Trawl Fishery advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to North West Slope and Trawl Fishery following up on the proposed activity (Record of Consultation, reference 2.3) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted AFMA, DAFF – Fisheries, CFA and individual relevant licence holders. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Western Deepwater Trawl Fishery

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Deepwater Trawl Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Western Deepwater Trawl Fishery on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided the Western Deepwater Trawl Fishery with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed Western Deepwater Trawl Fishery advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Western Deepwater Trawl Fishery following up on the proposed activity (Record of Consultation, reference 2.3) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted AFMA, DAFF - Fisheries, CFA and individual relevant licence holders. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Western Tuna and Billfish Fishery

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Tuna and Billfish Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Western Tuna and Billfish Fishery on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Western Tuna and Billfish Fishery over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed Western Tuna and Billfish Fishery advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Western Tuna and Billfish Fishery following up on the proposed activity (Record of Consultation, reference 2.3) and included a link to the Consultation Information Sheet on Woodside’s website.
- **(1)** On 19 October 2023, a licence holder from the Western Tuna and Billfish Fishery responded asking to be removed from Woodside’s mailing list and for Woodside to consult with Tuna Australia.
- On 2 November 2023, Woodside responded thanking the licence holder for their email and confirming they would be removed from Woodside’s mailing list and correspondence would be directed to Tuna Australia.

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside’s Response	Inclusion in Environment Plan
<p>(1) A licence holder from the Western Tuna and Billfish Fishery asked to be removed from Woodside’s mailing list and for Woodside to consult with Tuna Australia. While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside respects that consultation is voluntary. Woodside confirmed it had removed the licence holder from mailing lists and would direct correspondence to Tuna Australia.</p> <p>Woodside has consulted Tuna Australia, AFMA, DAFF - Fisheries, CFA, ASBTIA and relevant individual licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

Northern Prawn Fishery

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Northern Prawn Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Northern Prawn Fishery on 22 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Northern Prawn Fishery over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside emailed Northern Prawn Fishery advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Northern Prawn Fishery following up on the proposed activity (Record of Consultation, reference 2.3) and included a link to the Consultation Information Sheet on Woodside's website.
- **(1)** On 18 October 2023, a licence holder from the Northern Prawn Fishery responded asking to be removed from Woodside's mailing list.
- On 24 November 2023, Woodside responded thanking the licence holder for their email and confirming they had been removed from the mailing list.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) A licence holder from Northern Prawn Fishery asked to be removed from Woodside's mailing list.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside respects that consultation is voluntary. Woodside confirmed it had removed the licence holder from the mailing list.</p> <p>Woodside has consulted AFMA, DAFF - Fisheries, CFA, Northern Prawn Fishery Industry Pty Ltd, and relevant individual licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback</p>	<p>(1) Not required.</p> <p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide</p>

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	<p>may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.</p>
<p>Christmas Island Line Fishery</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Christmas Island Line Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Christmas Island Line Fishery on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email/letter seeking feedback on the proposed activities. • Woodside has provided Christmas Island Line Fishery with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 22 September 2023, Woodside emailed/sent a letter to Christmas Island Line Fishery advising of the proposed activity (Record of Consultation, reference 1.37 and 1.43) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 and 18 October 2023, Woodside sent a reminder letter/email to Christmas Island Line Fishery following up on the proposed activity (Record of Consultation, reference 2.3 and 2.18) and included a link/QR code to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has consulted AFMA, DAFF - Fisheries, CFA, DITRDCA, and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Cocos (Keeling) Islands Marine Aquarium Fishery</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Cocos (Keeling) Islands Marine Aquarium Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Cocos (Keeling) Islands Marine Aquarium Fishery on 03 October 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up letter seeking feedback on the proposed activities. • Woodside has provided Cocos (Keeling) Islands Marine Aquarium Fishery with the opportunity to provide feedback over a 4-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 3 October 2023, Woodside sent a letter to Cocos (Keeling) Islands Marine Aquarium Fishery advising of the proposed activity (Record of Consultation, reference 1.52) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 24 October 2023, Woodside sent a reminder letter to Cocos (Keeling) Islands Marine Aquarium Fishery following up on the proposed activity (Record of Consultation, reference 2.10) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has consulted AFMA, DAFF - Fisheries, CFA, DITRDCA and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
Commonwealth Fisheries Association (CFA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Commonwealth Fisheries Association (CFA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to CFA on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided CFA with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 22 September 2023, Woodside emailed CFA advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to CFA following up on the proposed activity (Record of Consultation, reference 2.3) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted AFMA and DAFF – Fisheries. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.
Tuna Australia		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Tuna Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Tuna Australia on 22 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has addressed and responded to Tuna Australia over a 5-month period. <p>Historical engagement:</p> <ul style="list-style-type: none"> • On 15 March 2023, in response to another EP, Tuna Australia provided Woodside its position statement for engaging with energy companies seeking consultation advice from stakeholders on environmental plans and project proposals. Tuna Australia’s feedback included advice that: <ul style="list-style-type: none"> – (1) Due to increased activity of proponents seeking to access offshore areas for various maritime developments, Tuna Australia could no longer coordinate consultation with offshore energy activities on behalf of its members without a service agreement in place. Tuna Australia noted it might be able to provide 		

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information on vessel navigation, fishing activities and/or the conservation of fish resources that may be affected, that is not publicly available and would be an important input to environmental impact and risk assessment processes.

- On 17 May 2023, Woodside thanked Tuna Australia for its industry position statement and stated:
 - The level of feedback provided by an organisation, if any, is at the person or organisation’s discretion. Woodside did not expect organisations to provide reports or engage consultants to provide feedback.
 - Woodside was open to suggestions to make consultation more manageable.
 - Woodside was happy to meet with Tuna Australia to provide an overview of its proposed activities, how EPs were developed and the extensive controls in place to reduce impacts to ALARP and acceptable. Woodside further advised the aim was to provide an efficient, simple way to obtain feedback and assist in understanding Woodside’s activities so Tuna Australia’s input could be considered in the development of EPs.
- On 17 May 2023, Tuna Australia wrote to NOPSEMA (and copied Woodside) regarding Woodside’s position on engagement with Tuna Australia as the lead representative organisation and relevant person for concession holders in the Western Tuna and Billfish Fishery (WTBF). Tuna Australia stated:
 - **(1)** Energy companies who executed service agreements with Tuna Australia ensured all WTBF and Eastern Tuna and Billfish Fishery concession holders were consulted on EPs and responses were provided in a report. This process was efficient and met consultation requirements.
 - It was unfortunate Woodside did not appreciate the nature of fishing and was more content to receive information to support their EPs free of charge which was not consistent with Woodside’s company values.
 - **(1)** Not all energy companies wanted to keep sponging off the community that wished to assist them. Tuna Australia had sound relationships with many energy companies who recognised Tuna Australia as a relevant person and had executed service agreements. In exchange Tuna Australia consulted with concession holders and provided informed, up to date commentary and information consistent with Tuna Australia’s industry position statement.
 - The WTBF fishing zone had been in place for a long time before the start of energy exploration in the marine environment. Tuna Australia was pleased that many energy companies respected this history. Woodside however failed to recognise that the WTBF was even a relevant person. For example, the WTBF was not listed as a relevant fishery in another Woodside EP.
 - WTBF concession holders were concerned with developments in their fishing zone and had comments and questions on EPs and proposals.
 - Tuna Australia requested NOPSEMA stipulated that all EP submissions received formal advice from Tuna Australia.
- On 26 May 2023, Woodside had a phone call with the Tuna Australia CEO and:
 - Explained that Woodside would like to discuss a path forward following receipt of Tuna Australia’s Position Statement across its EP activities.
 - Noted Tuna Australia’s previous EP consultation feedback that Woodside had responded to with respect to unrelated EPs.
 - Reiterated that Woodside does not expect Tuna Australia to provide a consultation report for each of its EPs and was concerned about this potential misalignment on expectations.
 - Tuna Australia advised it would like to discuss a way forward as Woodside suggested, and requested Woodside call Tuna on 30 May 2023, which Woodside committed to.

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- On 2 June 2023, Woodside made a follow up phone call to Tuna Australia and left a voicemail covering the following:
 - Woodside called Tuna Australia on 2 June 2023 to follow up on phone call on 26 May 2023.
 - Woodside left a message requesting a call back and the opportunity to meet with Tuna Australia to discuss Woodside's portfolio of EP activities.
 - Woodside requested the opportunity to discuss options to consult with Tuna Australia and potentially lessen the burden on Tuna Australia for providing feedback on Woodside's EPs.
 - Woodside offered the opportunity to take Tuna Australia through the entire EP portfolio so Tuna Australia could better assess the volume of activities.
 - Woodside reiterated that there was no expectation for Tuna Australia to provide a consultation report on each individual EP, and potentially there was an opportunity for Woodside and Tuna Australia to work together on a more strategic approach.
- On 6 June 2023, Tuna Australia returned Woodside's call regarding an opportunity to meet to discuss a more strategic approach to consultation.
- On 8 June 2023, Tuna Australia returned Woodside's call and asked Woodside to call back on 14 June 2023.
- On 14 June 2023, Woodside returned Tuna Australia's phone call and left a message for Tuna Australia to call back.
- On 20 June 2023, Woodside and Tuna Australia held a meeting to discuss Tuna Australia's Industry Position Statement.
 - Woodside provided an overview of its activities and explained how recent case law and NOPSEMA guidance had resulted in Woodside undertaking consultation on the widest potential 'EMBA'.
 - Tuna Australia agreed to share with Woodside the name of any of the Offshore Sectors' titleholders that have entered into Tuna Australia's service agreement to date.
 - **(1)** Tuna Australia also agreed to provide more detail on how Tuna Australia will distribute consultation materials to its membership/licence holders and the format of any report arising from the data collected.
 - Woodside committed to review Tuna Australia's Service Agreement.
- On 26 June 2023, Woodside emailed Tuna Australia following the meeting held on 20 June 2023 and recapped what was discussed.
 - Woodside thanked Tuna Australia for its time and stated it looked forward to continuing to work with Tuna Australia.
 - Woodside directed Tuna Australia to contact the Woodside Feedback inbox for any further information.
- On 30 June 2023, Tuna Australia's CEO responded to Woodside's email of 26 June 2023. Tuna Australia:
 - Noted outcomes of the recent case law focussed on stakeholder engagement and ensuring energy companies meet regulatory requirements and NOPSEMA guidelines.
 - Requested Woodside send the recent case law.
 - Reached out to energy companies who have executed a services agreement with Tuna Australia and asked whether Tuna Australia could inform Woodside about their working relationship. Beach Energy confirmed it was happy for Tuna Australia to share its details.

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- Advised how it contacted concession holders and what it provides to them.
 - **(1)** Provided a Tuna Australia contact who managed engagement with energy companies to progress a service agreement with Tuna Australia.
- On 17 July 2023, Woodside emailed Tuna Australia and confirmed:
 - Woodside's legal team had reviewed the Tuna Australia document and requested some minor changes to be made.
 - Woodside asked Tuna Australia if a marked-up version of the Service Agreement would be the simplest way for Tuna Australia to review.
 - Woodside attached a Supplier Questionnaire as part of its due diligence process and asked Tuna Australia to complete the form.
- On 18 July 2023, Tuna Australia emailed Woodside and confirmed:
 - Woodside should send a marked-up version of the Service Agreement for Tuna Australia to review.
 - Tuna Australia would fill out the Supplier Questionnaire and return in the next couple of days.
- On 18 July 2023, Woodside emailed Tuna Australia and sent a marked-up version of the Service Agreement for Tuna Australia to review.
- On 19 July 2023, Tuna Australia emailed Woodside and thanked it for sending through edits to Tuna Australia's services agreement and commented:
 - **(2)** Tuna Australia did not want any changes made to Schedule 2 of their Service Agreement and if Woodside had requirements outside of what Tuna Australia provided, then this would need to be discussed, agreed, and costed accordingly.
 - **(2)** Tuna Australia would like further details on the annual service for the Woodside Master Existing document including the rationale for the payment proposed,
 - **(2)** Tuna Australia does not agree to a fixed price for the above bodies of work. Tuna Australia wants clarification on what the Annual service entails, and how the fixed priced value was arrived at.
 - **(2)** Regarding the fixed fee for delivery of a specific consultation service, Tuna Australia needed to remain flexible to clients' needs and discuss additional works should they be required.
 - **(2)** Tuna Australia did not agree on the current terms which have been changed in Item 2 of Schedule 1 and said it sought a two-year agreement as per the agreement template.
- On 2 August 2023, Woodside emailed Tuna Australia, thanked them for their response regarding the Service Agreement and advised that Woodside's legal team would review and Woodside would revert as soon as possible. Woodside asked Tuna Australia to complete the Supplier Questionnaire sent on 17/7/2023.
- On 3 August 2023, Tuna Australia replied, apologised for the delay and sent the completed Supplier Questionnaire to Woodside.
- On 30 August 2023, Woodside emailed Tuna Australia and advised that Tuna Australia's feedback on the Service Agreement had been discussed with Woodside's legal team. Woodside asked for clarity on whether Tuna Australia would accept section 15: Ethical Business Practices. Once this had been accepted, Woodside could work through Tuna Australia's other points.

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- **(2)** On 4 September 2023, Tuna Australia emailed Woodside and advised that it had seen anti bribery and corruption clauses included in the vendor registration process of other energy companies but had not seen it proposed inside an agreement before. Tuna Australia advised it was not against including them in the agreement, but asked if it was the best place for it.

Summary of information provided and record of consultation for this EP:

- On 22 September 2023, Woodside emailed Tuna Australia advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 31 October 2023, Woodside sent a reminder email to Tuna Australia following up on the proposed activity (Record of Consultation, reference 2.12) and included a link to the Consultation Information Sheet on Woodside's website.
- On 6 November 2023, Tuna Australia responded and stated:
 - **(3)** It was prepared to assist Woodside to ensure this environmental plan was comprehensive and extended to all relevant persons, and that Woodside was aware the AFMA webpage requesting concession owners and holders to be contacted was out of date.
 - **(4)** The proponent must address planned fishing effort and development of the fishery, and focussing on historical fishing effort as the basis for validating the environment plan was a flawed assessment.
 - **(5)** It was concerned recent consultation by energy companies had involved accessing mailing lists sourced from AFMA or elsewhere and some contact lists were outdated, inaccurate and not fit-for-purpose as they did not contact the required target audience, while Tuna Australia's database was up to date, accurate and actively managed and reviewed.
 - **(6)** It had offered to assist energy companies to genuinely and comprehensively meet consultation and reporting requirements and its view was that consultation not conducted through its services was highly likely to be incomplete.
 - **(7)** Tuna Australia could not support this Environment Plan proposal as it believed Woodside had fallen short of genuine and comprehensive consultation.
 - **(8)** Woodside should advise Tuna Australia if it wished to progress with a services agreement and work collaboratively.
- On 22 November 2023, Woodside responded thanking Tuna Australia for its email and advised:
 - As Tuna Australia was aware, offshore proponents consult relevant persons under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.
 - Woodside's consultation process identified relevant persons and provided them sufficient information and a reasonable period to make an informed assessment of the possible consequences of the proposed activity on their functions, interests and activities.
 - Woodside obtained contact details of individual Commonwealth fishing statutory fishing rights and fishing permit holders so that consultation was consistent with the Regulations. As noted on its website, AFMA's expectation was that petroleum operators consulted with fishing operators about all activities and projects which may affect day-to-day fishing activities.
 - In addition to consulting individual licence holders, Woodside consulted relevant fishing industry associations and representative bodies such as Tuna Australia and Commonwealth Fisheries Association, and referred to the AFMA website to help inform which associations and bodies were relevant.

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- While the management area for the Western Tuna and Billfish Fishery overlapped the Operational Area for this EP, based on AFMA data, no recent fishing effort had occurred within the Operational Area for at least the past 10 years. Despite this, Woodside chose to consult licence holders in this fishery.
- The Offshore Environment Regulations did not require entry into service agreements in order to meet Environment Plan consultation requirements.
- Woodside considered it had met its consultation obligations under the Regulations and given Tuna Australia sufficient time and information to provide input.
- On 5 December 2023, Tuna Australia responded and thanked Woodside for its advice. Tuna Australia noted:
 - **(9)** It was concerned Woodside was electing to cherry-pick on how to meet statutory requirements, for example by focussing on fishing effort and disregarding important information in the OPGGS Act 2006 and Regulations.
 - **(10)** To progress consultation, it wished to pause the process while it took advice.
 - **(6)** It could assist Woodside to develop an environmental plan that was significantly improved and met regulatory requirements.
- On 20 December 2023, Woodside responded and thanked Tuna Australia for its response. Woodside advised:
 - Woodside met its legislative and regulatory requirements in the development and implementation of an Environment Plan.
 - Woodside would continue to consult Tuna Australia and individual Commonwealth licence holders for proposed activities where relevant and as appropriate.
 - Consultation was voluntary and Tuna Australia could decide whether it wished to engage in the process or not.
- On 21 December 2023, Tuna Australia responded and thanked Woodside for its response. Tuna Australia noted:
 - **(1, 3, 7)** The OPGGS Act 2006 clearly stated that when developing an EP, the proponent must demonstrate they could “carry on those activities in a manner that does not interfere with navigation, fishing or the conservation of the resources of the sea and seabed”. Tuna Australia had provided Woodside with its industry position statement and, as mentioned previously, it was prepared to provide services to Woodside to ensure the Environmental Plan met legislative and regulatory requirements. Tuna Australia would ensure thorough and comprehensive consultation on the proposed EP to ensure activities did not have an adverse impact on the fishery and marine environment, and without this advice, any EP submitted to NOPSEMA would be incomplete, inadequate and would not meet regulatory requirements.
 - **(11)** Tuna Australia would welcome comment from NOPSEMA on the content required in an EP to meet regulatory requirements when considering potential impacts on Australian tuna fisheries, especially in the context of knowing that Tuna Australia can comprehensively provide this information through a services agreement and Woodside has chosen not to engage.
 - **(8)** Tuna Australia was now breaking for the festive season but urged Woodside, in the meantime, to consider whether it would like to enter a services agreement and to advise Tuna Australia accordingly in the week starting 8 January.

Ongoing engagement:

- On 5 February 2024, Tuna Australia emailed Woodside regarding another EP and provided feedback on Woodside’s approach to consultation. Tuna Australia noted:

- **(3)** Woodside had decided that rather than developing an ongoing working relationship with Tuna Australia, it would contact all tuna concession owners and holders by accessing the AFMA database.
- (12) There were many AFMA permit registers depending on the fishery and the permit register changed regularly as entitlements were sold and traded. This meant Woodside would need to request a new permit register every time it submitted an EP or a variation to an EP. Woodside would need to reference when it sourced the permit registry to ensure NOPSEMA was assured the list was not outdated.
- (13) After reviewing the FMA 1991 Act and Regulations, Tuna Australia believed Woodside had been provided permit register contact details in error. Tuna Australia was following up on the use of industry data with AFMA and had not ruled out legally challenging the provision of industry data sourced in the manner by Woodside.
- On 19 February 2024, Woodside responded to Tuna Australia and advised:
 - Woodside was willing to have a working relationship with Tuna Australia, however it noted Tuna Australia’s position was to only do this via a fee-for-service agreement.
 - Woodside had previously engaged with Tuna Australia on a draft agreement, however Tuna Australia was not willing to make amendments to the draft agreement proposed by Woodside.
 - Outside a fee-for-service agreement, Woodside was willing to explore options on how best to consult Tuna Australia and licence holders.
 - As previously advised, Tuna Australia obtained contact details of individual Commonwealth statutory fishing rights and fishing permit holders so consultation was consistent with the Regulations. Consultation with fishery operators met the expectation of AFMA that petroleum operators consulted with fishing operators about all activities and projects which might affect day-to-day fishing activities.
 - Woodside regularly updated contact details of individual licence holders to facilitate consultation.
 - Woodside noted Tuna Australia was engaging with AFMA on the provision of permit register contact details under the *Fisheries Management Act 1991*, and Regulations.
- On 19 February 2024, Tuna Australia responded and advised:
 - **(2)** The offer it previously received from Woodside to charter Tuna Australia to do a report on fisheries was insulting.
 - **(1, 6)** As mentioned many times, Tuna Australia could reach out to all tuna concession owners and holders relevant to proposed EPs ensuring improved outcomes to meet regulatory requirements. Other energy companies had executed a services agreement with Tuna Australia and were pleased with the engagement and detailed advice.
 - **(1, 8)** Tuna Australia had proposed a very simple process ensuring Woodside met consultation obligations while not placing disproportionate burden on other sectors, and if Woodside would like an updated services agreement, Woodside should let Tuna Australia know.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>Tuna Australia provided feedback that:</p> <p>(1) It could no longer coordinate consultation with offshore energy activities on behalf of its members without a services agreement in place. Tuna Australia advised other energy companies had entered into the agreement.</p> <p>(2) In response to minor proposed amendments from Woodside to the service agreement, Tuna Australia did not want changes made to Schedule 2; requested further details on the annual service including rationale for the payment proposed; did not agree to a fixed price; and did not agree on the current terms which had been changed in Item 2 of Schedule 1 and sought a two-year agreement. Tuna Australia also advised it was not against including anti-bribery and corruption clauses in the agreement but asked if it was the best place for it.</p> <p>(3) With regards to this EP, Tuna Australia was prepared to assist Woodside to ensure its EP was comprehensive and extended to all relevant persons and asserted that Woodside was aware advice on AFMA’s website was out of date.</p> <p>(4) Focusing on historical fishing effort was a flawed assessment.</p> <p>(5) It had concerns about energy companies sourcing mailing lists from AFMA or elsewhere as some contact lists were outdated, inaccurate and not fit-for-purpose, compared to Tuna Australia’s database which was up to date and accurate.</p> <p>(6) It was offering to assist energy companies to genuinely and comprehensively meet consultation and reporting requirements.</p> <p>(7) It could not support the EP proposal as it believed Woodside had fallen short of genuine and comprehensive consultation.</p>	<p>(1) Woodside respects that, for a relevant person, consultation is voluntary. Woodside advised Tuna Australia the level of feedback provided by an organisation, if any, was at the person or organisation’s discretion, and Woodside was open to suggestions from Tuna Australia on ways to improve efficiency and simplicity for feedback.</p> <p>(2) Woodside requested clarity on whether Tuna Australia would accept Section 15: Ethical Business Practices. Woodside advised Tuna Australia if the amendment was accepted, Woodside could work through Tuna Australia’s other points regarding the service agreement.</p> <p>(3) Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations that is consistent with NOPSEMA’s guideline. Woodside advised Tuna Australia that Woodside’s consultation process identified relevant persons and provided them with sufficient information and a reasonable period in which to provide feedback.</p> <p>(4) Woodside determined, and advised Tuna Australia, that although the Western Tuna and Billfish Fishery management area overlapped the Operational Area, there had been no fishing effort in the Operational Area for at least the past 10 years. Despite this, Woodside chose to consult licence holders in the fishery.</p> <p>(5) Woodside obtains contact details of Commonwealth statutory fishing rights and fishing permit holders so that consultation is consistent with the Regulations, as per the expectation from AFMA that petroleum operators consulted with fishing operators about all activities and projects which may affect day-to-day fishing activities.</p> <p>(6) Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations that is</p>	<p>(1, 2) Not required.</p> <p>(3) Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP and identified relevant persons in Appendix F, Table 1 of this EP in accordance with regulation 25(1) of the Environment Regulations.</p> <p>(4, 5, 6) Not required.</p> <p>(7) Woodside considers that Tuna Australia has been given sufficient information and a reasonable period in which to make an informed assessment of the possible consequences of the activity on its functions, interests or activities, as described in Section 5.4 of this EP.</p> <p>(8, 9, 10, 11, 12, 13) Not required.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>Woodside considers the measures and controls in the EP address Tuna Australia’s functions, interests or activities.</p> <p>No additional controls or measures are required.</p>
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<p>(8) Woodside should advise Tuna Australia if it wished to progress with a services agreement and work collaboratively.</p> <p>(9) It was concerned Woodside was electing to cherry-pick on how to meet statutory requirements.</p> <p>(10) To progress consultation, it wished to pause the process to obtain advice.</p> <p>(11) It welcomed comment from NOPSEMA on the content required for an EP to meet regulatory requirements.</p> <p>(12) There were many AFMA permit registers depending on the fishery and the permit register changed regularly as entitlements were sold and traded.</p> <p>(13) It had reviewed the FMA 1991 Act and Regulations and believed Woodside had been provided permit register contact details in error and was following up on the use of industry data with AFMA.</p>	<p>consistent with NOPSEMA’s guideline. Woodside advised Tuna Australia that in addition to consulting individual licence holders, Woodside consulted relevant fishing industry associations and representative bodies such as Tuna Australia and the Commonwealth Fisheries Association. Woodside also consulted DAFF – Fisheries and WAFIC for this EP.</p> <p>(7) Woodside considers it has met its consultation obligations under the Environment Regulations and given Tuna Australia sufficient time and information to obtain input and to assist Woodside to confirm current measures or identify additional measures.</p> <p>(8) Woodside noted, and advised Tuna Australia, that the Offshore Environment Regulations did not require entry into service agreements in order to meet EP consultation requirements.</p> <p>(9) Woodside considers it has met its legislative and regulatory requirements in the development and implementation of an EP.</p> <p>(10) Woodside noted Tuna Australia’s wish to pause the consultation process and advised it would continue to consult Tuna Australia and Commonwealth licence holders for proposed activities where relevant and as appropriate, and that consultation was voluntary and Tuna Australia could decide whether it wished to engage in the process or not.</p> <p>(11) Woodside noted that Tuna Australia welcomed comment from NOPSEMA on the content required for an EP to meet regulatory requirements.</p> <p>(12) Woodside advised Tuna Australia that it regularly updated contact details of individual licence holders to facilitate consultation.</p> <p>(13) Woodside noted Tuna Australia was engaging AFMA on the provision of permit register contact details</p>	
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	<p>under the <i>Fisheries Management Act 1991</i>, and Regulations.</p> <p>Woodside has consulted AFMA, DAFF – Fisheries, CFA, ASBTIA and relevant individual licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Pearl Producers Association (PPA)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Pearl Producers Association (PPA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Pearl Producers Association on 26 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Pearl Producers Association with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 26 September 2023, Woodside emailed Pearl Producers Australia advising of the proposed activity (Record of Consultation, reference 1.45) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2023, Woodside sent a reminder email to Pearl Producers Australia following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has consulted AFMA, DAFF – Fisheries and CFA.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
Northern Prawn Fishery Industry Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Northern Prawn Fishery Industry Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Northern Prawn Fishery Industry Pty Ltd on 18 October 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Northern Prawn Fishery Industry with the opportunity to provide feedback over a 3-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 18 October 2023, Woodside emailed Northern Prawn Fishery Industry Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.58) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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- On 2 November 2023, Woodside sent a reminder email to Northern Prawn Fishery Industry Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.14) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted AFMA, DAFF - Fisheries, CFA, and individual relevant licence holders. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Western Australian Commercial fisheries and representative bodies

Western Australian Fishing Industry Council (WAFIC)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Australian Fishing Industry Council (WAFIC) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to WAFIC on 20 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to WAFIC over a 5-month period.

Summary of information provided and record of consultation:

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- On 20 September 2023, Woodside emailed WAFIC advising of the proposed activity (Record of Consultation, reference 1.31) and provided an overview and Consultation Information Sheet for distribution to licence holders in four State fisheries relevant to the Operational Area of the proposed activity.
- On 21 September 2023, WAFIC responded thanking Woodside for its email and:
 - **(1)** Advised it would send out the consultation material under the agreed fee-for-service agreement.
 - **(2)** Asked Woodside to confirm the relevance of the Marine Aquarium Fish Managed Fishery, on the basis that the hand collection and diving methods used in this fishery were not applicable at the water depths of the proposed activity.
- On 21 September 2023, Woodside responded thanking WAFIC for its email and confirmed that on the basis of the activity water depths, it would remove Marine Aquarium Fish Managed Fishery from relevant fisheries for this activity.
- On 21 September 2023, Woodside emailed WAFIC with an amendment to the information intended for distribution to the relevant fisheries, including an additional line regarding notification of activities.
- On 21 September 2023, WAFIC emailed Woodside confirming it had sent the amended version of the consultation information to licence holders in the three fisheries relevant to the Operational Area for this EP: Mackerel Managed Fishery (Area 2), Pilbara Line Fishery and West Coast Deep Sea Crustacean Managed Fishery.
- On 18 October 2023, Woodside sent a reminder email to WAFIC following up on the proposed activity (Record of Consultation, reference 2.4). Woodside noted that it understood WAFIC may not consider it necessary to send a reminder email to individual licence holders but provided a link to the Consultation Information Sheet on Woodside's website for WAFIC's information and for distribution to licence holders at WAFIC's discretion.
- On 19 October 2023, WAFIC thanked Woodside for its email and confirmed that:
 - **(3)** As per WAFIC's protocol to avoid consultation fatigue, it did not consider it necessary to issue a consultation reminder to commercial licence holders.
 - **(4)** WAFIC would take time to review the consultation material ahead of the closure of the consultation period.
- On 31 October 2023, Woodside sent an email thanking WAFIC for its response regarding reminders and for reviewing the consultation material.
- On 31 October 2023, WAFIC emailed Woodside to confirm it had not received any feedback or concerns from licence holders regarding this EP. WAFIC also:
 - **(5)** Confirmed that given the activity in this EP was standard business for Woodside, it had no further comment at this stage.
 - **(6)** Confirmed and agreed that Woodside would send all notifications regarding activities to WAFIC.
 - **(7)** Requested to be consulted on any future development activities considered for the Ngujima-Yin facility that was subject to a separate EP.
- On 1 November 2023, Woodside responded thanking WAFIC for its email and:
 - Noted there was no feedback or concerns from licence holders and no further comment from WAFIC.
 - Noted that as the EP included ongoing operations no activity notifications were expected, but confirmed it would provide WAFIC with start and end activity notifications for the associated drilling, construction and installation activities which would be subject to a separate EP.
 - Confirmed it would consult WAFIC on these future EPs related to the Ngujima-Yin FPSO Facility.

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- On 6 November 2023, WAFIC responded thanking Woodside for its confirmation email regarding this EP.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>WAFIC provided feedback and:</p> <p>(1) Advised it would send consultation material to relevant stakeholders.</p> <p>(2) Asked Woodside to clarify the relevance to the Operational Area of two fisheries based on the collection and diving methods.</p> <p>(3) Advised it did not consider it necessary to send reminder emails to licence holders for this activity.</p> <p>(4) Confirmed it would take time to review the consultation material before the end of the consultation period.</p> <p>(5) Noted it had no further comment on the EP at this stage.</p> <p>(6) Confirmed Woodside should send all notifications regarding activities to WAFIC.</p> <p>(7) Requested to be consulted on future EPs regarding the Ngujima-Yin FPSO Facility.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted WAFIC would distribute consultation material.</p> <p>(2) Woodside assessed WAFIC's feedback regarding the relevancy of two fisheries and confirmed that, based on WAFIC's expertise on water depths and the methods of hand collection and diving, it would not consider the Marine Aquarium and Specimen Shell fisheries relevant to the Operational Area for this EP.</p> <p>(3) Woodside noted WAFIC's advice that it was not necessary to send reminder emails to individual licence holders.</p> <p>(4,5) Woodside noted WAFIC had reviewed the consultation material and did not have further comment on the EP at this stage.</p> <p>(6) Woodside confirmed that while there were not expected to be activity notifications for the ongoing operations involved with this EP, it would provide WAFIC with start and end activity notifications for the associated drilling, construction and installation activities which would be subject to a separate EP.</p> <p>(7) Woodside confirmed it would consult WAFIC on future EPs related to the Ngujima-Yin FPSO Facility.</p> <p>Woodside has consulted DPIRD, WAFIC and individual licence holders (via WAFIC).</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will</p>	<p>(1) Not required.</p> <p>(2) Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP. Woodside has updated its assessment of relevancy for consultation purposes (see Record of Consultation, Table 1) to reflect WAFIC's advice and consultation guidelines.</p> <p>(3, 4, 5) Not required.</p> <p>(6) Woodside engages in ongoing consultation and will provide notifications of significant change, as appropriate, to WAFIC as referenced in Section 7.10 of the EP.</p> <p>(7) Not required.</p> <p>No additional measures or controls are required.</p>

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	apply its Management of Change and Revision process (see Section 7.1.16).	
Mackerel Managed Fishery (Area 2)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Mackerel Managed Fishery (Area 2) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Mackerel Managed Fishery (Area 2), via WAFIC, on 21 September 2023 based on their function, interest and activities. • Woodside has provided the Mackerel Managed Fishery (Area 2) with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, WAFIC, on behalf of Woodside, emailed Mackerel Managed Fishery (Area 2) advising of the proposed activity (Record of Consultation, reference 1.32) and provided a Consultation Information Sheet. • As per advice from WAFIC regarding its consultation guidelines, no follow-up email was required for the Mackerel Managed Fishery (Area 2). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	<p>Woodside has consulted DPIRD, WAFIC and individual relevant licence holders (via WAFIC).</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
West Coast Deep Sea Crustacean Managed Fishery		

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with West Coast Deep Sea Crustacean Managed Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to West Coast Deep Sea Crustacean Managed Fishery, via WAFIC, on 21 September 2023 based on their function, interest and activities.
- Woodside has provided the West Coast Deep Sea Crustacean Managed Fishery with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, WAFIC, on behalf of Woodside, emailed West Coast Deep Sea Crustacean Managed Fishery advising of the proposed activity (Record of Consultation, reference 1.32) and provided a Consultation Information Sheet.
- As per advice from WAFIC regarding its consultation guidelines, no follow-up email was required for the West Coast Deep Sea Crustacean Managed Fishery.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside has consulted DPIRD, WAFIC and individual relevant licence holders (via WAFIC). Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Pilbara Line Fishery

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Pilbara Line Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Pilbara Line Fishery, via WAFIC, on 21 September 2023 based on their function, interest and activities.
- Woodside has provided Pilbara Line Fishery with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, WAFIC, on behalf of Woodside, emailed Pilbara Line Fishery advising of the proposed activity (Record of Consultation, reference 1.32) and provided a Consultation Information Sheet.
- As per advice from WAFIC regarding its consultation guidelines, no follow-up email was required for the Pilbara Line Fishery.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside has consulted DPIRD, WAFIC and individual relevant licence holders (via WAFIC). Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Western Rock Lobster Council

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Rock Lobster Council for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Western Rock Lobster Council on 30 October 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has provided Western Rock Lobster Council with the opportunity to provide feedback over a 3-month period.

Summary of information provided and record of consultation:

- On 30 October 2023, Woodside emailed Western Rock Lobster Council advising of the proposed activity (Record of Consultation, reference 1.59) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 13 November 2023, Woodside sent a reminder email to Western Rock Lobster Council following up on the proposed activity (Record of Consultation 2.16) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside has consulted DPIRD, WAFIC and individual relevant licence holders (via WAFIC). Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Recreational marine users and representative bodies

Exmouth Recreational Marine Users

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Exmouth Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Exmouth Recreational Marine Users on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Exmouth Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Exmouth Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Exmouth Recreational Marine Users following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

Gascoyne Recreational Marine Users

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Gascoyne Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley

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Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Gascoyne Recreational Marine Users on 22 September 2023 based on their function, interest and activities.
- Woodside has referred Gascoyne Recreational Marine Users to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up letter seeking feedback on the proposed activities.
- Woodside has provided Gascoyne Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to Gascoyne Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.41) and provided a Consultation Information Sheet and referred to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to Gascoyne Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 2.6) and included a QR code link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.
Pilbara/Kimberley Recreational Marine Users		

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Pilbara/Kimberley Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Pilbara/Kimberley Recreational Marine Users on 22 September 2023 based on their function, interest and activities.
- Woodside has referred Pilbara/Kimberley Recreational Marine Users to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up letter seeking feedback on the proposed activities.
- Woodside has provided Pilbara/Kimberley Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to Pilbara/Kimberley Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.41) and provided a Consultation Information Sheet and referred to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to Pilbara/Kimberley Recreational Marine Users following up on the proposed activity (Record of Consultation, reference 2.6) and included a QR code link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

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Lombadina Aboriginal Corporation (LAC)

LAC have been identified as a relevant person through their functions, activities or interests as a Pilbara/Kimberley Recreational Marine User, as identified in Table 1. LAC is not a Prescribed Body Corporate under the Native Title Act 1993 and associated regulations.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with LAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside Sought direction on LAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to LAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".
- Advised that LAC's can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with LAC in October 2023. Woodside has addressed and responded to LAC over 5 months, demonstrating a "reasonable" period of consultation.
- Woodside asked LAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

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- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on LAC'S functions, interests or activities.

Historical engagement:

- On 25 July 2023, Woodside emailed LAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that LAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult. No response was received to this email.

Summary of information provided and record of consultation for this EP:

- On 6 October 2023, Woodside emailed LAC advising of the proposed activity (Record of Consultation, reference 1.98) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that lac and its members may have within the EMBA, information on how LAC would like to engage, and requested that LAC provide information to other individuals as required.
- On 10 October 2023, Woodside met with LAC in person for a consultation meeting on this activity. Woodside explained the activity, noting that it is a 5-year submission review and had been operating since 2008 and was located near Exmouth. Woodside described the EMBA and how the EMBA is created. Woodside talked through the NOPSEMA guidelines.
 - **(1)** LAC asked a question about how Woodside drilled into the ocean floor. Woodside said they would provide an animation drilling video that demonstrated the process.
 - Woodside asked LAC if there were any cultural values that they would like Woodside to know about noting that there is the option to require information to be kept confidential. Woodside asked whether LAC had any further questions or concerns in relation to this EP. LAC responded no to both queries.
 - Woodside said it was able to fund future meetings.
- **(1)** On 17 October 2023, Woodside emailed LAC thanking them for the 10 October 2023 meeting and reaffirmed that feedback on EPs can be provided over the life of the EP and does not need to occur before the activity commences. Woodside also provided a drilling video as requested by LAC at the meeting. No response has been received.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) During face-to-face engagement related to this activity and others, LAC requested further information on a topic related to the proposed activity which was responded to during the meeting:</p> <ul style="list-style-type: none"> • How Woodside drills into the ocean floor. 	<p>(1) Woodside responded to LAC's requests for information, and no further information was requested on this topic.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with LAC (Section 7.10). As outlined in the</p>	<p>(1) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with LAC as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to LAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Karratha Recreational Marine Users

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Karratha Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Karratha Recreational Marine Users on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email to Karratha Recreational Marine Users seeking feedback on the proposed activities.
- Woodside has provided the Karratha Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Karratha Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder email to Karratha Recreational Marine Users following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
West Coast Recreational Marine Users		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with West Coast Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to West Coast Recreational Marine Users on 22 September 2023 based on their function, interest and activities. Woodside has referred West Coast Recreational Marine Users to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up letter seeking feedback on the proposed activities. Woodside has provided West Coast Recreational Marine Users with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p>		

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- On 22 September 2023, Woodside sent a letter to West Coast Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.41) and provided a Consultation Information Sheet and referred to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to West Coast Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 2.6) and included a QR code link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

South Coast Recreational Marine Users

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with South Coast Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to South Coast Recreational Marine Users on 22 September 2023 based on their function, interest and activities.
- Woodside has referred South Coast Recreational Marine Users to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up letter seeking feedback on the proposed activities.

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- Woodside has provided South Coast Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to South Coast Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.41) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to South Coast Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 2.6).
- On 4 October 2023, a fishing charter operator consulted as part of the South Coast Recreational Marine Users emailed Woodside and commented they were vehemently against the proposal of FPSOs in the Carnarvon Basin due to the risks to marine and shore environments which, in their opinion, outweighed the projects. Their concerns regarded:
 - (1) The drilling of two new wells and the impact on the World Heritage-listed reef and coast.
 - (2) Seismic blasting carried out to search for the new wells and the impact on the natural environment including fauna.
 - (3) The potential of a crude oil spill and/or the release of hydrocarbons and the effect on marine life, Ningaloo Reef, and coastline.
 - (4) The impact on shoreline bird life and marine mammals such as whales.
- On 12 October 2023, Woodside emailed the fishing charter operator thanking them for their email, and to confirm they were referencing activities relating to this EP, and which stakeholder group they were part of.
- On 12 October 2023, the fishing charter operator responded to Woodside confirming their comments were in relation to this EP and that they were part of the coastal tourism stakeholder group.
- On 27 November 2023, Woodside responded thanking the fishing charter operator for their feedback and advised:
 - The five-year revision of the Ngujima-Yin FPSO Facility Operations EP included production from a proposed additional two wells via subsea tieback to existing infrastructure. There were no planned impacts on the nearby World Heritage area or coastline as a result of the proposed additional wells or ongoing activities proposed under the Ngujima-Yin FPSO Facility Operations EP. The proposed activity to drill the two wells would be subject to a separate and future EP, for which Woodside would undertake consultation.
 - There were no seismic activities associated with the five-year revision of the Ngujima-Yin FPSO Facility Operations EP.
 - In accordance with Woodside's risk assessment for this EP, a worst-case loss of well containment had been defined as a 'highly unlikely' event. In the highly unlikely event of a hydrocarbon release, Woodside had a well-developed oil response management framework, including specific responses for sensitive areas such as Ningaloo Marine Park, and an Oil Pollution First Strike Plan which would guide the immediate response.
 - The potential impacts on bird life and marine animals depended on the timing, duration and extent of a spill in the highly unlikely event this occurred. Response options to mitigate environmental impacts included tracking the spill, the use of protective barriers, shoreline clean-up techniques, prevention of

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the spill contacting wildlife where feasible and rehabilitation of wildlife where contact occurred, and long-term monitoring of sensitive species and sites after a spill event.		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>A fishing charter operator from the South Coast Recreational Marine Users provided feedback that he was against the proposed activities and was concerned about:</p> <ul style="list-style-type: none"> (1) The drilling of two new wells and the impacts. (2) Seismic blasting to search for the new wells. (3) Potential of a crude oil spill and its impact on marine life, reef and coastline. (4) The impact on shoreline birds and marine mammals. 	<ul style="list-style-type: none"> (1) There are no drilling activities associated with this EP. Woodside advised the fishing charter operator the EP included production from a proposed additional two wells. The proposed activity to drill to two wells would be subject to a separate and future EP, for which Woodside would undertake consultation. (2) There are no seismic activities associated with this EP. Woodside provided this advice to the fishing charter operator. (3) Woodside advised a worst-case loss of well containment had been defined as a ‘highly unlikely’ event and it had a well-developed oil response management framework including an Oil Pollution First Strike Plan. (4) Woodside advised the impact on animals depended on the timing, duration and extent of a spill. Response options included tracking, protective barriers, shoreline clean-up techniques, prevention of contact with wildlife and rehabilitation of wildlife where contact occurs, and long-term monitoring of species and sites after a spill. <p>Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and relevant individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<ul style="list-style-type: none"> (1, 2) Not required. (3) The risks associated with unplanned activities are assessed in Section 6.8 of this EP. (4) The potential environmental impacts of planned and unplanned activities are assessed in Section 6.6, 6.7 and 6.8 of this EP. <p>Woodside has consulted South Coast Recreational Marine Users in the course of preparing this EP. Woodside has assessed the claims or objections raised by a South Coast Recreational Marine User. No additional measures or controls have been put in place.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the South Coast Recreational Marine Users’ functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

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Christmas Island Recreational Marine Users

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Christmas Island Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Christmas Island Recreational Marine Users on 14 September/03 October 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email/letter seeking feedback on the proposed activities.
- Woodside has provided the Christmas Island Recreational Marine Users with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023 and 03 October 2023, Woodside emailed/sent a letter to Christmas Island Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 1.6 and 1.53) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023 and 24 October 2023, Woodside sent a reminder email or letter to Christmas Island Recreational Marine Users following up on the proposed activities (Record of Consultation, reference 2.1 and 2.9) and included a link/QR code to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and relevant individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of	Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

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	Change and Revision process (see Section 7.1.16 of this EP).	
Recfishwest		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Recfishwest for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Recfishwest on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has addressed and responded to Recfishwest over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Recfishwest advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Recfishwest following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. • On 25 October 2023, Recfishwest responded thanking Woodside for its email and confirmed: <ul style="list-style-type: none"> - (1) It had no objection to the proposed activities. - (2) It requested to be kept informed as activities progressed, given that the areas surrounding the operations were accessed by recreational fishers. - (3) It noted the EP would include production from an additional two wells and the operation of a new fuel gasline, with associated drilling, construction and installation activities to be subject to a separate EP. • On 1 November 2023, Woodside responded thanking Recfishwest for its feedback. Woodside confirmed it would continue to inform Recfishwest on the activities' progression and would consult Recfishwest on future EPs related to the Ngujima-Yin FPSO facility. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Recfishwest provided feedback confirming:</p> <p>(1) It had no objection to the proposed activities.</p> <p>(2) It requested to be kept informed as activities progressed, given the areas surrounding the operations are accessed by recreational fishers.</p> <p>(3) It noted the EP would include production from an additional two wells and the operation of a new fuel gasline, with associated drilling, construction and installation activities to be subject to a separate EP.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted Recfishwest had no objections to the activity.</p> <p>(2) Woodside confirmed it would keep Recfishwest informed as the activities progressed, given that the areas surrounding the operation were accessed by recreational fishers.</p> <p>(3) Woodside confirmed it would consult Recfishwest on future EPs related to the Ngujima-Yin FPSO Facility.</p> <p>Woodside has consulted Recfishwest, Marine Tourism Association of WA, WA Game Fishing Association and relevant individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>(2) Woodside engages in ongoing consultation and will provide notification of significant change, as appropriate, to Recfishwest as referenced in Section 7.10 of the EP.</p> <p>(3) Not required.</p> <p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>
Marine Tourism WA		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Marine Tourism WA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Marine Tourism WA on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		
<p>This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.</p> <p>Controlled Ref No: V0000AH0500 Revision: 0 Page 170 of 892</p> <p style="text-align: center;">Uncontrolled when printed. Refer to electronic version for most up to date information.</p>		

- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Marine Tourism WA with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Marine Tourism WA advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Marine Tourism WA following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted Recfishwest, WA Game Fishing Association and individual recreational marine users. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP. No additional measures or controls are required.

WA Game Fishing Association

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with WA Game Fishing Association for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to WA Game Fishing Association on 14 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided WA Game Fishing Association with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed WA Game Fishing Association advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to WA Game Fishing Association following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	<p>Woodside has consulted Recfishwest, Marine Tourism WA, WA Game Fishing Association and relevant individual recreational marine users.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.</p> <p>No additional measures or controls are required.</p>

Titleholders and Operators

Chevron Australia/ Osaka Gas Gorgon/ Tokyo Gas Gorgon/ JERA Gorgon

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Chevron Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Chevron Australia on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Chevron Australia with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed Chevron Australia advising of the proposed activity (Record of Consultation, reference 1.12) and provided a Consultation Information Sheet, GIS shape files and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*. Woodside asked that the consultation information be forwarded to Chevron's Joint Venture participants Osaka Gas Gorgon, Tokyo Gas Gorgon and Jera Gorgon for feedback.
- On 16 October 2023, Woodside sent a reminder email to Chevron Australia following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Western Gas

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Western Gas for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided Western Gas on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Western Gas with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed Western Gas advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Western Gas following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Exxon Mobil Australia Resources Company

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Exxon Mobil Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

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- Consultation Information provided to Exxon Mobil Australia on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Exxon Mobil Australia with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Exxon Mobil Australia advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Exxon Mobil Australia following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shell Australia

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shell Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shell Australia on 15 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shell Australia with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed Shell Australia advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shell Australia following up on the proposed activity ((Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

BP Developments Australia

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with BP Developments for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to BP Developments on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has addressed and responded to BP Developments Australia over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed BP Developments Australia advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- **(1)** On 03 October 2023, BP Developments Australia responded thanking Woodside for its email and advising it had no objections or further feedback at that time.
- On 03 October 2023, Woodside responded thanking BP Developments Australia for its email.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) BP Developments Australia advised it had no objections or further feedback. Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted BP Developments had no objections or feedback. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required. No additional measures or controls are required.</p>

Carnarvon Energy

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Carnarvon Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Carnarvon Energy on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has addressed and responded to Carnarvon Energy over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Carnarvon Energy advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- **(1)** On 28 September 2023, Carnarvon Energy responded thanking Woodside for its email and confirming it had no further request for information after reviewing the consultation material.
- On 29 September 2023, Woodside responded thanking Carnarvon Energy for its email and noted it had no further requests for information.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Carnarvon Energy advised it had no further requests for information.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted Carnarvon Energy had no further requests for information.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>

PE Wheatstone

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with PE Wheatstone for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to PE Wheatstone on 14 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to PE Wheatstone over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed PE Wheatstone advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- **(1)** On 14 September 2023, PE Wheatstone responded thanking Woodside for its email and confirming it had no concerns on the consultation information provided.
- On 21 September 2023, Woodside responded thanking PE Wheatstone for its email and acknowledged it had no concerns.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) PE Wheatstone advised it had no concerns on the consultation information provided.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted PE Wheatstone had no concerns. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>

Kyushu Electric Wheatstone

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Kyushu Electric Wheatstone for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Kyushu Electric Wheatstone on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Kyushu Electric Wheatstone with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Kyushu Electric Wheatstone advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Kyushu Electric Wheatstone following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Eni Australia

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Eni Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Eni Australia on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided Eni Australia with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Eni Australia advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Eni Australia following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Finder Energy No 16

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Finder Energy No 16 for the purpose of 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Finder Energy on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Finder Energy No 16 over a 5-month period.

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Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Finder Energy advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email (Record of Consultation, reference 2.1) following up on the proposed activity and included a link to the Consultation Information Sheet on Woodside’s website.
- **(1)** On 17 October 2023, Finder Energy responded thanking Woodside for its email and advising it had no feedback on the proposed activities.
- On 17 October 2023, Woodside responded thanking Finder Energy for its email and noted it had no feedback on the proposed activities.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Finder Energy advised it had no feedback on the proposed activities. Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted Finder Energy had no feedback on the proposed activities. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required. No additional measures or controls are required.</p>

Jadestone

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Jadestone for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Jadestone on 14 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided the Jadestone with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Jadestone advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Jadestone following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

KUFPEC

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with KUFPEC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to KUFPEC on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided KUFPEC with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed KUFPEC advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to KUFPEC following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Santos NA Energy Holdings / Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos (BOL) / Santos WA PVG

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Santos for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Santos on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to Santos over a 5-month period.

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<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 14 September 2023, Woodside emailed Santos advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. (1) On 20 September 2023, Santos responded thanking Woodside for its email and advising it had no comments or objections to the proposed activities. On 22 September 2023, Woodside responded thanking Santos for its email. 		
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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plans
<p>(1) Santos advised it had no comments or objections regarding the proposed activities.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted Santos had no comments or objections.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>

Coastal Oil and Gas

<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Coastal Oil and Gas for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Coastal Oil and Gas on 14 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities.
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- Woodside has provided Coastal Oil and Gas with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Coastal Oil and Gas advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Coastal Oil and Gas following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Bounty Oil and Gas

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Bounty Oil and Gas for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Bounty Oil and Gas on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Bounty Oil and Gas with the opportunity to provide feedback over a 5-month period.

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Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Bounty Oil and Gas advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Bounty Oil and Gas following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

OMV Australia / Sapura OMV Upstream

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with OMV Australia / Sapura OMV Upstream for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to OMV Australia / Sapura OMV Upstream on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided OMV Australia/ Sapura OMV Upstream with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 14 September 2023, Woodside emailed OMV Australia / Sapura OMV Upstream advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to OMV Australia / Sapura OMV Upstream following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
KATO Energy / KATO Corowa		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with KATO Energy/ KATO Corowa for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Kato Energy / KATO Corowa on 14 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided KATO Energy / KATO Corowa with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p>		

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<ul style="list-style-type: none"> On 14 September 2023, Woodside emailed Kato Energy / KATO Corowa advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to KATO Energy / KATO Corowa following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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INPEX Alpha		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with INPEX Alpha for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to INPEX Alpha on 14 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided INPEX Alpha with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 14 September 2023, Woodside emailed INPEX Alpha advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder email to INPEX Alpha following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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JX Nippon O&G Exploration (Australia)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with JX Nippon O&G Exploration (Australia) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to JX Nippon O&G Exploration (Australia) on 14 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided JX Nippon O&G Exploration (Australia) with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 14 September 2023, Woodside emailed JX Nippon O&G Exploration (Australia) advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder email to JX Nippon O&G Exploration (Australia) following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Vermilion Oil & Gas		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Vermilion Oil & Gas for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Vermilion Oil & Gas on 14 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Vermilion Oil & Gas with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 14 September 2023, Woodside emailed Vermilion Oil & Gas advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to Vermilion Oil & Gas following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.</p> <p>Controlled Ref No: V0000AH0500 Revision: 0 Page 191 of 892</p> <p style="text-align: center;">Uncontrolled when printed. Refer to electronic version for most up to date information.</p>		

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3D Oil Limited		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with 3D Oil Limited for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to 3D Oil Limited on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided 3D Oil Limited with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed 3D Oil Limited advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to 3D Oil Limited following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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AGI Tubridgi Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AGI Tubridgi Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to AGI Tubridgi Pty Ltd on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided AGI Tubridgi Pty Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed AGI Tubridgi Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to AGI Tubridgi Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Allasso Energy Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Allasso Energy Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Allasso Energy Pty Ltd on 26 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up letter seeking feedback on the proposed activities. • Woodside has provided Allasso Energy Pty Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 September 2023, Woodside sent a letter to Allasso Energy Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.46) and provided a Consultation Information Sheet and referred to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder letter to Allasso Energy Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.7 and included a QR code link to the Consultation Information Sheet on Woodside’s website). 		

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AWE Perth Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AWE Perth Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to AWE Perth on 26 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up letter seeking feedback on the proposed activities. • Woodside has provided AWE Perth Pty Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 September 2023, Woodside sent a letter to AWE Perth Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.46) and provided a Consultation Information Sheet and referred to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder letter to AWE Perth Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.7) and included a QR code link to the Consultation Information Sheet on Woodside’s website. 		

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Good Earth Energy Corporation		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Good Earth Energy Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Good Earth Energy Corporation on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided the Good Earth Energy Corporation with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Good Earth Energy Corporation advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Good Earth Energy Corporation following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Pathfinder Energy Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Pathfinder Energy Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Pathfinder Energy Pty Ltd on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Pathfinder Energy Pty Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Pathfinder Energy Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Pathfinder Energy Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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PBE Operations Pty Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with PBE Operations Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to PBE Operations Pty Ltd on 26 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up letter seeking feedback on the proposed activities. • Woodside has provided PBE Operations Pty Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 September 2023, Woodside sent a letter to PBE Operations Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.46) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder letter to PBE Operations Pty Ltd following up on the proposed activity (Record of Consultation, reference 2.7) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Pilot Energy Ltd		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Pilot Energy Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Pilot Energy Ltd on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Pilot Energy Ptd Ltd with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Pilot Energy Ltd advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Pilot Energy Ltd following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Petro China International Investment		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Petro China International Investment for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Petro China International Investment on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Petro China International Investment with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Petro China International Investment advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Petro China International Investment following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Skye Napoleon / Skye Petroleum / Skye Resources		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Skye Napoleon; Petroleum; Resources for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Skye Napoleon; Petroleum; Resources on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Skye Napoleon; Petroleum; Resources with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Skye Napoleon; Petroleum; Resources advising of the proposed activity (Record of Consultation, reference 1.47) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Skye Napoleon; Petroleum; Resources following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Triangle Energy		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Triangle Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Triangle Energy on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Triangle Energy with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Triangle Energy advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Triangle Energy following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

VRX Silica

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with VRX Silica for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to VRX Silica on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided VRX Silica with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed VRX Silica advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to VRX Silica following up on the proposed activities (Record of Consultation, reference 2.1).

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
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Beach Energy

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Beach Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Beach Energy on 14 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Beach Energy with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Beach Energy advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Beach Energy following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where	No additional measures or controls are required.

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	appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
NZOG Compass		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NZOG Compass for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to NZOG Compass on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided NZOG Compass with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed NZOG Compass advising of the proposed activity (Record of Consultation, reference 1.48) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to NZOG Compass following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

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Origin Energy Browse

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Origin Energy Browse for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Origin Energy Browse on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Origin Energy Browse with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 14 September 2023, Woodside emailed Origin Energy Browse advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 27 September 2023, Woodside forwarded its email and consultation information to another Origin Energy email address after receiving a delivery failure on the initial email.
- On 16 October 2023, Woodside sent a reminder email to Origin Energy Browse following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.
- On 17 October 2023, Origin Energy sent an email to Woodside thanking it for getting in touch and asking to confirm its details.
- On 7 November 2023, Woodside emailed Origin Energy and confirmed it was contacting Origin Energy Browse as a titleholder in regard to consultation for this EP. Woodside provided another link to the Consultation Information Sheet on its website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the	No additional measures or controls are required.

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	<p>EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	
<p>Mid West Geothermal Power Pty Ltd / Strike Energy</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Strike Energy / Mid West Geothermal Power Pty Ltd for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Mid West Geothermal Power Pty Ltd via Strike Energy on 14 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Strike Energy / Mid West Geothermal Power Pty Ltd with the opportunity to provide feedback over 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 14 September 2023, Woodside emailed Strike Energy on behalf of Mid West Geothermal Power Pty Ltd advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Strike Energy following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>No additional measures or controls are required.</p>
<p>Peak Industry Representative bodies</p>		
<p>Australian Energy Producers (AEP)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Australian Energy Producers (AEP) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to AEP on 13 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided AEP with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 13 September 2023, Woodside emailed AEP advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to AEP following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>No additional measures or controls are required.</p>
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Traditional Custodians and nominated representative corporations

Murujuga Aboriginal Corporation (MAC)

MAC is established under the Burrup and Maitland Industrial Estates Agreement and is the representative body for the Traditional Custodians for Murujuga being the Ngarluma, the Mardudhunera, the Yaburara, the Yindjibarndi and the Wong-Goo-Tt-Oo peoples (collectively Ngarda-Ngarli). MAC is the cultural authority for Murujuga and is responsible for the management and protection of its cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with MAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on MAC’s preferred method of consultation.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to MAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that MAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Woodside commenced consultation with MAC in November 2023. Woodside has addressed and responded to MAC over 4 months, demonstrating a “reasonable period” of consultation.

Woodside asked MAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on MAC’s functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed MAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that MAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed MAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.
- **(1)** On 1 September 2023, MAC emailed a letter to Woodside noting the following in response to Woodside’s query regarding consultation on another activity unrelated to this EP:
 - MAC consulted with women appointed to their Circle of Elders regarding the query.
 - MAC is comfortable that the women in the Circle of Elders are the right people to be consulted about these matters.
 - MAC notes that it would be extremely unusual for knowledge to be held by an individual without surrounding groups knowing about it.
 - The Circle of Elders themselves represent the Ngarda-Ngarli; the collective term for the Traditional Custodians who look after Murujuga Country.

Summary of information provided and record of consultation for this EP:

- On 17 November 2023, Woodside emailed MAC advising of the proposed activity (Record of Consultation, reference 1.63) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that MAC and its members may have within the EMBA, information on how MAC would like to engage, and requested that MAC provide information to other individuals as required.
- **(2)** On 17 November 2023, MAC emailed Woodside confirming receipt of materials and informed that they would send off for review.
- On 5 January 2024, Woodside emailed MAC a table displaying the status of Woodside’s outstanding EP consultations with MAC. Woodside offered to set up a consultation meeting to work through this table with MAC. No response has been received.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) On 1 September 2023, MAC confirmed that they were the appropriate body corporate and cultural authority over Murujuga.</p> <p>(2) MAC confirmed it had received the consultation materials for this EP but has not provided further feedback, questions or objections to the activity.</p>	<p>(1) Woodside accepts and respects MAC's position as the appropriate body corporate and cultural authority over Murujuga.</p> <p>(2) Woodside accepts MAC has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with MAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to MAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) Existing controls considered sufficient as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with MAC through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside's Program of Ongoing Engagement with Traditional Custodians (Appendix G).</p>
<p>Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)</p> <p>NTGAC is established under the Native Title Act 1993 by the Baiyungu people to represent the Baiyungu people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NTGAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> Woodside sought direction on NTGAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation. 		

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- Provided Consultation Information Sheet and Summary Information Sheets developed by Indigenous staff to NTGAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Woodside has provided NOPSEMA's brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".
- Advised that NTGAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with NTGAC in October 2023. Woodside has addressed and responded to NTGAC over 5 months, demonstrating a "reasonable" period of consultation.

Woodside asked NTGAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NTGAC's functions, interests or activities.

Historical engagement:

- On 19 July 2023, Woodside emailed NTGAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NTGAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed NTGAC/YMAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 23 October 2023, Woodside emailed NTGAC (via YMAC) advising of the proposed activity (Record of Consultation, reference 1.64) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website). The email requested information on the interests that

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NTGAC and its members may have within the EMBA, information on how NTGAC would like to engage, and requested that NTGAC provide information to other individuals as required.

- On 13 November 2023, Woodside emailed NTGAC (via YMAC) noting that the previous email had included the Consultation Information Sheet, not the Summary Information Sheet. Woodside attached a copy of the Summary Information Sheet.

Ongoing engagement:

- (1)** On 14 December 2023, Woodside emailed YMAC attaching the Program of Ongoing Consultation and advised that Woodside wanted to progress negotiations on consultation frameworks with groups represented by YMAC (including NTGAC). Woodside proposed the protocol would include (among other things):
 - The procedures Woodside will follow when a submission requires consultation.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside will provide NTGAC with the information NTGAC requires to make free, prior and informed decisions about Woodside’s EPs.
 - Agreement as to how NTGAC will provide feedback and how that can best be represented in EPs.
 - An agreed schedule of rates for NTGAC’s participation in consultation.
 - How the outputs of the consultations will be managed.
- On 21 December 2023, Woodside emailed NTGAC/YMAC with a list of activities, as requested, including this activity.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims have been received for this activity since consultation commenced in October 2023, despite follow up.</p> <p>(1) NTGAC are developing the first draft of a Consultation Agreement, and General Report. The proposal for the General Report is that it would outline the nature of the activities for each phase of the project and the risks associated with each of the relevant activities. Woodside are awaiting receipt of the initial draft of the General Report.</p>	<p>Woodside accepts that NTGAC has no feedback on this activity.</p> <p>(1) Separate from consultation under regulation 25 of the Environment Regulations for this activity, Woodside is applying internal approvals to settle a Consultation Agreement with NTGAC. The Consultation Agreement and General Report/s would be used to frame ongoing consultation to occur as part of Woodside’s commitment to post regulation 25(1) of the Environment Regulations consultation. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff.</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>(1) Woodside is implementing a program to actively support Traditional Custodians’ capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix G). This includes continued engagement regarding NTGAC’s proposed Consultation Framework and General Report which will be applied to ongoing consultation.</p>

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Buurabalayji Thalanyji Aboriginal Corporation (BTAC)

BTAC is established under the Native Title Act 1993 by the Thalanyji people to represent the Thalanyji people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with BTAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on BTAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheet and Summary Information Sheet developed by Indigenous staff to BTAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA’s brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that BTAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).

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- Woodside commenced consultation with BTAC in October 2023.
- Woodside has addressed and responded to BTAC over 5 months, demonstrating a “reasonable” period of consultation.

Woodside asked BTAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BTAC’s functions, interests or activities.

Historical Engagement:

- On 20 February 2023, BTAC sent a letter to Woodside, in relation to another project, confirming that:
 - **(1)** BTAC, on behalf of Thalanyji people, had interests in archaeological sites on nearshore islands including the Montebello islands, Barrow Island and Mackerel Islands, and had a cultural obligation to care for sea country and environmental values.
 - **(2)** BTAC had not specifically developed values regarding Sea Country into a format that could be articulated for consultation.
 - **(3)** BTAC sought support from Woodside to enable BTAC to define and articulate its values on Sea Country in a manner that could be more clearly understood by the offshore sector, government, and the community.
 - **(4)** BTAC proposed that Woodside enter into a consultation or engagement framework agreement to set out a process for ongoing consultation.
- On 19 July 2023, Woodside emailed BTAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that BTAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed BTAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside emailed BTAC advising of the proposed activity (Record of Consultation, reference 1.65) and provided a Summary Information Sheet (including a link to the detailed information sheet on Woodside’s website). The email requested information on the interests that BTAC and its members may have within the EMBA.
- **(4)** On 13 October 2023, legal practice Banks-Smith and Associates emailed Woodside confirming they acted for BTAC on NOPSEMA matters. Among other things, they noted, they required an indemnity clause in the proposed framework agreement against any court action that arose from a claim against BTAC in regard to the consultation they engaged on with Woodside EP’s.
- **(4)** On 31 October 2023, BSA emailed Woodside, requesting a response to the email about indemnifying BTAC.

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- On 1 November 2023, BTAC emailed Woodside inviting Woodside to present on Woodside activities at a 1-hour slot in the BTAC Common Law Holders meeting on 27 November 2023.
- On 1 November 2023, Woodside emailed BTAC accepting the offer to present at the Common Law Holders meeting and offering to pay costs for the meeting.
- On 2 November 2023, Woodside emailed BSA noting they would not agree to the request to indemnify BTAC against any court proceedings as a result of consultation they engage in with Woodside on EP's. Woodside re-iterated their wish to progress the framework agreement to build their relationship with BTAC. Woodside again noted that they wish to progress other matters, including the commitment to mapping BTAC's sea country values.
- **(4)** On 2 November 2023, BSA emailed Woodside requesting more detail about Woodside not supporting the indemnity request.
- On 3 November 2023, BSA emailed Woodside confirming that BTAC would like Woodside to present to a BTAC members meeting on 27 November 2023 in Carnarvon.
- On 18 November 2023, Woodside emailed BSA with further information about why they will not indemnify BTAC as requested in the 13 October 2023 email. Woodside explained that it could harm genuine engagement, may promote behaviours in others who may become aware of the indemnity by Woodside, and it would not be good practice to provide an indemnity in relation to the act or omission of other parties that Woodside would not necessarily engage with. Woodside again noted their commitment to build an ongoing relationship with BTAC.
- **(3, 4)** On 27 November 2023, Woodside attended and presented at the BTAC Common Law Holders meeting. The one-hour timeslot did not allow for taking feedback in relation to EPs, but the Common Law Holders meeting were made aware that Woodside had been attempting to meet since January 2023 on activities and had agreed to pay for reasonable consultation costs as well as fund Sea Country mapping but that these offers had not been taken up. BTAC members were very interested in an ongoing relationship and discussed sea country mapping, which Woodside had responded to in writing earlier in 2023, Woodside agreed to re-send the relevant correspondence to the new CEO. BTAC noted they would invite Woodside to attend a meeting with BTAC early in 2024, a collaborative agreement will be settled and further ongoing consultation on all relevant Eps will continue in order of priority for BTAC and Woodside.
- On 7 December 2023, Woodside emailed BSA requesting a response to the email of 18 November 2023 in relation to their request and Woodside's response on indemnification. Woodside noted that the framework agreement has not been finalised to date but would include the following:
 - Agreement between parties to consult in a meaningful and genuine manner.
 - Procedure Woodside will follow when a submission requires consultation, which would include notification and an invitation to meet.
 - Initial and ongoing consultation about activities.
 - How Thalanyji provides feedback and how to represent that feedback in submissions.
 - Agreed schedule of rates.
 - How to manage the outputs of consultation.
 - Woodside requested to meet to progress discussions with BTAC.
- On 7 December 2023, Woodside emailed BTAC forwarding correspondence received from and correspondence sent to the previous CEO dated 20 February 2023 and dated 17 March 2023, confirming support for recording sea country values and confirming anthropological support. Woodside confirmed support to pay

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reasonable costs for ethnographic/anthropological support for mapping and recording sea country values. Woodside requested to be contacted to enable progress on the above matters. BTAC's letter of 20 February 2023 in relation to other activities noted interests in archaeological sites on nearshore islands including the Montebello and Barrow Islands, they noted a cultural obligation to care for sea country and environmental values.

- **(3)** On 7 December 2023, BTAC emailed Woodside accepting the offer to take up sea country mapping and research. BTAC requested a meeting in the week of 15 January 2024 to plan for upcoming activities.
- **(5)** On 8 December 2023, BSA emailed Woodside in relation to settling finance matter, noting they would wait to schedule a meeting with BTAC once financials sorted.
- On 8 December 2023, Woodside emailed BSA requesting further details on finances for the framework agreement, noting that Woodside's policies require itemised estimates for services.
- **(5)** On 11 December 2023, BSA emailed acknowledging costs estimates would be provided shortly and requesting availability to meet with BTAC during January, February and March 2024.
- On 12 December 2023, BTAC emailed Woodside asking if 17 January 2024 was a suitable date to meet.
- On 12 December 2023, Woodside emailed BSA noting that BTAC had suggested a meeting during the week of 15 January 2024 to discuss sea country mapping. Woodside suggested that they would include time to progress the framework agreement and present on the status of current EPs.
- On 15 December 2023, BTAC emailed Woodside requesting a copy of the slide presentation from the meeting of 27 November 2023.
- On 18 December 2023, Woodside emailed BTAC a copy of the slide presentation as requested from the meeting of 27 November 2023.
- On 19 December 2023, Woodside emailed BTAC agreeing to meet on 17 January 2024, Woodside provided an example of costings provided by other PBCs and noted they would not be able to pay legal fees if the framework agreement and EPs were not discussed. Woodside requested other meeting dates if the 17 January 2024 meeting was only to discuss sea country mapping.
- **(4)** On 19 December 2023, BSA emailed Woodside noting that they had an understanding that the EP consultation and framework agreement would be discussed at the 17 January 2024 meeting. BSA queried the detail of the information being sought by Woodside on funding.
- On 20 December 2023, Woodside emailed BSA noting that they were seeking a cost estimate and required this prior to BSA being present at the BTAC meeting if they wished to be funded for attendance.
- On 9 January 2024, Woodside emailed BTAC confirming a meeting on 17 January 2024 to discuss sea country mapping, requesting logistics and cost coverage estimate.
- On 16 January 2024, BTAC emailed Woodside confirming meeting of 17 January 2024 with BTAC and requesting the names of Woodside attendees.
- On 16 January 2024, Woodside emailed BTAC with the names of Woodside attendees, as requested.
- On 17 January 2024, Woodside met with BTAC and discussed (among other things):
 - **(2, 3)** Sea country mapping, confirming:

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- BTAC choose their own experts for ethnographic survey.
- BTAC retain intellectual property of material and may request information not be provided.
- Fieldwork required with a preferred commencement in April, with Woodside personnel in attendance as guided by BTAC.
- **(6)** BTAC prefer early notice on EPs, if possible.
- **(7)** BTAC keen on employment/training opportunities and opportunities for rangers.
- **(6)** BTAC to form a committee for consultation on EPs.
 - **(7)** On 17 January 2024, Woodside emailed BTAC information about training pathways as discussed at the meeting with BTAC on 17 January 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) BTAC have stated that their interests include archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Mackerel Islands, and BTAC has a cultural obligation to care for the environmental values of sea country.</p> <p>(2) BTAC have not specifically developed values regarding Sea Country into a format that could be articulated for consultation. BTAC sought support from Woodside to enable BTAC to define and articulate its values on Sea Country in a manner that could be more clearly understood by the offshore sector, government, and the community.</p> <p>(3) Requested Woodside supports BTAC in obtaining technical advice relating to the proposed activities which were sent to BTAC.</p> <p>(4) BTAC proposed a Collaboration Agreement as an appropriate mechanism to provide ongoing feedback to Woodside regarding its activities.</p> <p>(5) BTAC does not endorse any consultation without appropriate cost recovery.</p>	<p>(1) The nearshore islands identified by BTAC do not fall within the EMBA and will not be impacted by any of the activities set out in the EP. Woodside assessed BTAC’s cultural obligation to care for environmental values of Sea country to represent potential cultural values.</p> <p>(2) Woodside agreed to support the articulation and recording of sea country values. This offer has been taken up with further details to be addressed in writing from BTAC following the meeting of 17 January 2024. The draft Collaboration Agreement at (7) below includes support for recording and articulation of Sea Country values. Completion of an ethnographic assessment is not required to undertake or complete consultation under regulation 25 of the Environment Regulations. Opportunity to undertake this work continues under the proposed Collaboration Agreement (see 6) as part of ongoing engagement. Woodside has been able to develop a robust understanding of Thalanyji Sea Country cultural values and features in absence of this assessment.</p> <p>(3) Woodside has offered financial support for technical advice and other support this has now</p>	<p>(1) Woodside updated Section 4.9 to record BTAC’s interests and potential cultural values and assessed potential impact on these, including controls, in Section 6 and 7.</p> <p>(2) Woodside has developed the Thalanyji Sea Country Management process described in the EP Section 7.6 to develop a robust understanding of Thalanyji Sea Country cultural values and heritage features, in the absence of the ethnographic survey. Woodside has taken all reasonable steps to identify cultural features and heritage features of Thalanyji people within the EMBA. This is described in Section 4.9. The proposed Collaboration Agreement and PS 16.2.1 enables an ethnographic survey to be undertaken at a later date. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.8 of the EP). PS 16.3.1 ensures that potential impacts to newly identified cultural values is managed to ALARP and Acceptable levels.</p> <p>(3) Not required.</p> <p>(4, 5, 6) Woodside is implementing a program to actively support Traditional Custodians’ capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with</p>

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<p>(6) BTAC requested early notification on EPs and are interested in forming a committee for ongoing consultation on EPs.</p> <p>(7) BTAC expressed desire to be involved in local emergency response capability, potentially via an Indigenous Ranger Program. Interested in opportunities for employment/training.</p>	<p>been taken up, with further details to be addressed in writing from BTAC following the meeting of 17 January 2024. The draft Collaboration Agreement at (7) below includes technical support for recording of sea country values.</p> <p>(4) Separate from consultation under regulation 25 of the Environment Regulations, Woodside has drafted a Collaboration Agreement with BTAC and is awaiting final internal review. The agreement would be used to frame ongoing consultation. Sufficient information to allow informed assessment has already been provided by other means, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members.</p> <p>(5) Woodside and BTAC have agreed on a Costs Acceptance Letter. Woodside assesses that the proposed Collaboration Agreement is an appropriate mechanism for addressing appropriate cost recovery for BTAC. Woodside has already offered BTAC support for technical advice and informed BTAC that it would financially support consultation meetings. As described in the summary above, Woodside has afforded sufficient information and reasonable time for BTAC to provide feedback in the course of preparing this EP.</p> <p>(6) Woodside supports ongoing consultation being conducted in the most appropriate way for BTAC.</p> <p>(7) Woodside will engage in ongoing consultation with BTAC for the purposes of ongoing monitoring, management and emergency response associated with environmental risk. On 17 January 2024 Woodside provided information about training/employment program to BTAC.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including</p>	<p>Traditional Custodians, (Appendix G). This includes continued engagement regarding the Collaboration Agreement that Woodside seeks with BTAC, a draft of which includes support for BTAC to define and articulate sea values, provision of ongoing feedback and cost recovery.</p> <p>(7) The Program for Ongoing Engagement with Traditional Custodians (Appendix G) includes commitments to social investment to support Indigenous Ranger programs, and support for Indigenous oil spill response capabilities.</p>
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	any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	
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Yinggarda Aboriginal Corporation (YAC)

YAC is established under the Native Title Act 1993 by the Yinggarda people to represent the Yinggarda people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25(1) of the Environment Regulations and consultation with YAC for the purpose of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on YAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to YAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that YAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to YAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked YAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on YAC functions, interests or activities.

Historical engagement:

- On 19 July 2023, Woodside emailed YAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that YAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed YAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside emailed YAC advising of the proposed activity (Record of Consultation, reference 1.66) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that YAC and its members may have within the EMBA, information on how YAC would like to engage, and requested that YAC provide information to other individuals as required.
- **(1)** On 13 October 2023, legal practice Banks-Smith and Associates emailed Woodside confirming they acted for YAC on NOPSEMA matters. Among other things, they noted, they required an indemnity and hold harmless clause be included in the Framework Agreement to protect against potential exposure to activist litigation.
- On 2 November 2023, Woodside emailed BSA advising they would not agree to the request to indemnify YAC against any court proceedings as a result of consultation they engage in with Woodside on EPs.
- **(1)** On 2 November 2023, BSA emailed Woodside requesting information on the reason for Woodside's position not to include indemnification in the consultation agreement.
- On 18 November 2023, Woodside emailed BSA with further information about why they would not indemnify YAC as requested in the 13 October 2023 email. Woodside explained that it could harm genuine engagement, may promote behaviours in others who may become aware of the indemnity by Woodside, and it would not be good practice to provide an indemnity in relation to the act or omission of other parties that Woodside would not necessarily engage with.
- On 28 December 2023, Woodside emailed YAC following up on the initial email sent on 11 October 2023. Woodside advised YAC the timeframe in which the EP will be submitted and requested the opportunity for consultation. No response has been received.
- On 12 February 2024, Woodside emailed YAC informing YAC that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024. Woodside sent links to NOPSEMA's NOPEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information.

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Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) YAC has requested that Woodside enter into a Framework Agreement to set out a process for ongoing consultation.</p> <p>YAC has not provided feedback, objections or claims in response to this activity since consultation commenced in October 2023, despite follow up.</p>	<p>(1) Separate from consultation under regulation 25 of the Environment Regulations, Woodside has provided a draft Framework Agreement for YAC’s consideration. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to YAC will be for the purpose of ongoing engagement.</p> <p>Woodside accepts that YAC has no feedback on the activity at this time.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with YAC as part of ongoing engagement (Appendix G). This includes the proposed Framework Agreement which will be applied to ongoing consultation. Existing controls considered sufficient, as described in Section 6 and 7.</p>

Kariyarra Aboriginal Corporation (Kariyarra)

Kariyarra is established under the Native Title Act 1993 by Kariyarra people to represent the Kariyarra people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Kariyarra for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Kariyarra preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Kariyarra. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.

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- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that Kariyarra can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Kariyarra over 5 months, demonstrating a "reasonable period" of consultation.

Woodside asked Kariyarra if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.15 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Kariyarra functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed Kariyarra NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Kariyarra advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Kariyarra Woodside's planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 22 September 2023, KAC (via legal representative) emailed Woodside attaching a letter and Woodside policy documents. The letter set out the following:
 - (1) Requesting a meeting with KAC at a suitable time with an agreed agenda be arranged, including preparation of "co-management agreement".
 - (1) An agreement which provides the most effective tool for the effective and ongoing consultation by Woodside with KAC.

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- **(2)** An agreed budget to fund (among other things) preparation of Agreement, meetings, and specialist advice.
- **(3)** Noting that KAC asserted sea rights in their native title claim. (Note: Native title was found by the Federal Court not to exist in the sea in the KAC determination).
- **(1)** Contact protocols going forward.
- **(1)** On 28 September 2023, KAC (via legal representative) emailed Woodside a funding request for fees and disbursements, however, did not provide a reasonable basis for the quote.
- On 18 October 2023, Woodside emailed KAC advising of the proposed activity (Record of Consultation, reference 1.67) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that KAC and its members may have within the EMBA, information on how KAC would like to engage, and requested that KAC provide information to other individuals as required.
- **(3)** Between 20 -23 October 2023, several emails were exchanged in relation to costs and Woodside reiterated the need for a reasonable quote.
- **(3)** On 26 October 2023, KAC (via legal representative) emailed Woodside in relation to meeting with KAC about Eps, stating Woodside's proposed cost structure was inadequate and would confer with EDO the Traditional Owners that have taken court action.
- **(3)** On 14 November 2023, KAC (via legal representative) emailed Woodside in relation to costs of consultation meetings noting that they had taken their concerns to the EDO.
- On 22 November, Woodside emailed KAC (via legal representative) reiterating a preparedness to fund consultation for consultation meetings and noting that Woodside were looking at implementing further environmental controls in relation to operations to reduce or remove any potential impact to KAC sea country. Woodside said they wished to progress the framework agreement and suggested a full day meeting with KAC. The agreement could set out a protocol for ongoing consultation on EPs where consultation for purposes of developing an EP is closed, and for consultation on development of EPs for new activities.
- **(1)** On 23 November 2023, KAC (via legal representative) emailed Woodside agreeing to Woodside's proposal in the email of 22 November 2023, requesting a draft protocol and suggesting dates for a meeting between KAC and Woodside.
- **(3)** On 23 November 2023, KAC (via legal representative) emailed Woodside seeking costs already incurred by his services to KAC.
- **(3)** On 29 November 2023, KAC (via legal representative) emailed Woodside following a phone conversation with Woodside, confirming a meeting of 5 December 2023 in Karratha with KAC and included quotes for meeting costs.
- **(1)** On 29 November 2023, KAC (via legal representative) emailed Woodside with details of meeting with KAC, request for proposed protocol and suggested Agenda for the meeting.
- **(1, 3)** On 29 November 2023, Woodside emailed KAC (via legal representative) attaching Woodside's Program of Ongoing Consultation, a revised Agenda and suggesting the protocol between KAC and Woodside would set out:
 - How Woodside and KAC would consult, the basic procedure for initial and ongoing consultation in relation to activities
 - Agreement as to how Woodside would provide KAC information.

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- How KAC would provide feedback and how Woodside represents that into submissions.
- Agreed schedule of rates.
- How the outputs of the consultations are managed.
- On 29 November 2023, KAC (via legal representative) emailed Woodside with an amended proposed Agenda for the upcoming meeting.
- On 5 December 2023, Woodside and KAC met in Port Hedland. At the meeting Woodside
 - Presented on an Engagement Protocol.
 - What Woodside plan to do to protect the environment.
 - Presented the regulatory context.
 - Spoke about the biological studies that are carried out through different times of the year.
 - Discussed why Woodside were talking to KAC.
 - Displayed the EMBA and how it was developed.
 - Showed projects open for ongoing consultation.
 - Spoke to what Woodside were seeking to understand from KAC:
 - How could these activities impact your cultural values, interests, and activities - does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
- **(4)** KAC asked how Woodside maintain the validity of controls over periods of times, sighting turtles as an example in terms of whether current controls would be sufficient into the future.
 - Woodside noted that there is ongoing monitoring and Woodside would apply its Management of Change and Revision process to address controls.
 - Noted the EP's subject of ongoing consultation, including this EP.
 - Spoke to planned and unplanned risks.
- **(2)** KAC gave a presentation to Woodside on their sea country rights and duties:
 - Accessing sea country for fishing, trapping, crabbing catching turtle, hunting dugong, using stingray barbs for spears and collecting shellfish.
 - Visiting offshore islands at low tide.
 - Passing on traditional knowledge to children.

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- Secret habitat tokens.
- Having duties to look after and protect all of KACs sea country.
- **(1, 2, 3)** KAC outlined their consultation requirements to Woodside:
 - Co-designed and co-managed approach to protecting sea country.
 - On-going input into Eps.
 - An agreement with Woodside.
 - Funding for sea rangers.
 - A positive and collaborative relationship.
- **(1, 3)** On 13 December 2023, KAC (via legal representative) emailed Woodside with outcomes of the 5 December meeting, confirming availability for a workshop in March 2024 and that KAC and Woodside aim to reach agreement on an engagement protocol by mid-2024.
- **(1)** On 20 December 2023, Woodside emailed KAC (via legal representative) confirming the process for ongoing consultation, noting information to be included in this EP provided by KAC and noting that Woodside looks forward to reaching agreement with KAC on consultation process.
- **(3)** On 20 December 2023, KAC (via legal representative) emailed Woodside noting further information regarding sea country features and values KAC wish noted within EPs.
- **(1)** On 20 December 2023, KAC (via legal representative) emailed Woodside acknowledging they looked forward to progressing an agreement in 2024 between KAC and Woodside.
- On 13 January 2024, KAC (via legal representative) emailed Woodside a letter expressing interest in signing a consultation agreement with Woodside. KAC informed Woodside that the letter has been approved for signing by the Corporation Chair and waits for Woodside's response.
- On 22 January 2024, KAC (via legal representative) emailed Woodside following up on previous correspondence (13 January 2024) and again expressing interest in signing a consultation agreement with Woodside.
- On 21 February 2024, Woodside emailed KLC (via legal representative) thanking them for their email and attaching a draft consultation agreement letter outlining the objectives, terms and conditions, and proposed consultation schedule with KLC.
- On 21 February 2024, KAC (via legal representative) emailed Woodside requesting a word version of the letter sent on 21 February 2024.
- On 22 February 2024, Woodside emailed KAC (via legal representative) attaching the requested version of the letter.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
(1) KAC have noted that they want to engage on matters with Woodside and would like to develop an Engagement Protocol for (among other things)	(1, 2) Woodside have agreed to fund reasonable costs and funded the 5 December 2023 meeting. Woodside will fund future meetings on an agreed	(1, 2, 4) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue ongoing engagement with KAC and will work towards

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<p>ongoing input into EP's and a collaborative relationship with Woodside.</p> <p>(2) KAC has indicated they require costs to be met for KAC to be engaged in consultations with Woodside.</p> <p>(3) At a face-to-face meeting on 5 December 2023, KAC gave a presentation about their sea country rights and duties. They mentioned:</p> <ul style="list-style-type: none"> • Fishing, trapping, crabbing catching turtle, hunting dugong, and using stingray barbs for spears and collecting shellfish. • Visiting offshore islands at low tide. • Secret habitat tokens. • Having a duty to look after and protect sea country. <p>(4) Asked how the validity of current controls are maintained and appropriate into the future.</p>	<p>costs basis to be set out in the Engagement Protocol. Woodside and KAC have agreed to hold a workshop in early March 2024 to progress towards an Engagement Protocol as requested and agreed by KAC and Woodside. As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25(1) of the Environment Regulations is complete. Any further engagement with and support offered to KAC will be for the purpose of ongoing engagement.</p> <p>(3) Woodside has noted the KAC's values and interests in sea country in Section 4.9. Woodside accepts that KAC may have sea country values within the EMBA for this EP. Since October 2023, KAC has not raised any claims or objections in relation to this activity.</p> <p>(4) Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (refer to Section 7.1.16).</p>	<p>an Engagement Protocol which will include reasonable funding as requested by KAC and supported by Woodside (Appendix G).</p> <p>(3) Existing controls considered sufficient as described in Section 6 of the EP. Woodside recognises that KAC holds Sea Country rights and interests that need to be protected (Section 4.9).</p>
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Wirrawandi Aboriginal Corporation (WAC)
WAC is established under the Native Title Act 1993 by the Mardudhunera and Yaburara people to represent the Mardudhunera and Yaburara people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Wirrawandi Aboriginal Corporation (WAC) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on WAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.

- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to WAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that WAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to WAC over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked WAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on WAC functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed WAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that WAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed WAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 3 October 2023, Woodside emailed WAC advising of the proposed activity (Record of Consultation, reference 1.68) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested

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information on the interests that WAC and its members may have within the EMBA, information on how WAC would like to engage, and requested that WAC provide information to other individuals as required.

- On 3 October 2023, Woodside and WAC exchanged email correspondence on the logistics of booking a meeting to discuss the environment plan. Woodside offered to meet WAC at a location suitable to them.
- On 20 October 2023, WAC and Woodside met and discussed:
 - Current EPs and how parties intended to support each other through the process.
 - Woodside’s intention to ensure that WAC was adequately consulted on all EPs.
 - WAC’s current corporate restructure and the impact of this on ability to engage in consultation.
 - **(1)** WAC’s interest in discussing a Framework Agreement once the new CEO was settled in.
- On 24 October 2023, Woodside sent a follow-up email enquiring if WAC had any questions relating to this EP and offering to schedule a consultation session with the members and/or Board of WAC.
- On 3 November 2023, Woodside emailed WAC following up regarding feedback on this activity and again attaching the Summary Information Sheet (Record of Consultation, reference 1.2). Woodside advised WAC it could take some additional time to consider the consultation. Woodside asked WAC to advise if it would like to set up a consultation meeting. No response has been received.
- On 19 December 2023, Woodside emailed WAC wishing a happy festive season, thanking WAC for their contributions throughout the year and offering availability for consultation sessions.
- On 19 December 2023, WAC emailed Woodside noting its thanks for Woodside support.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) WAC are interested in developing a Framework Agreement that includes outlining a process for ongoing consultation.</p> <p>WAC has not provided feedback, objections to date or claims in response to the information provided on this activity since consultation commenced in October 2023, despite follow-up.</p>	<p>(1) Separate from consultation under regulation 25 of the Environment Regulations, Woodside will establish a framework agreement with WAC. The agreement would be used to frame ongoing consultation. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff. Any further engagement with and support offered to WAC will be for the purpose of ongoing engagement.</p> <p>Woodside accepts that WAC has no feedback on the activity at this time.</p>	<p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with WAC as part of ongoing engagement (Section 7.10 of the EP). This includes continued engagement regarding WAC’s proposed Framework Agreement which will be applied to ongoing consultation. This is described further in the Program of Ongoing Engagement with Traditional Custodians, Appendix G.</p> <p>Existing controls considered sufficient, as described in Section 6 and 7.</p>

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Robe River Kuruma Aboriginal Corporation (RRKAC)

RRKAC is established under the Native Title Act 1993 by the Robe River Kuruma people to represent the Robe River Kuruma people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation Robe River Kuruma Aboriginal Corporation (RRKAC) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on RRKAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to RRKAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that RRKAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Woodside has addressed and responded to RRKAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked RRKAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25(1) of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on RRKAC functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed RRKAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that RRKAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed RRKAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 3 October 2023, Woodside emailed RRKAC advising of the proposed activity (Record of Consultation, reference 1.69) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that RRKAC and its members may have within the EMBA, information on how RRKAC would like to engage, and requested that RRKAC provide information to other individuals as required.
- On 24 October 2023, Woodside sent a follow-up email enquiring if RRKAC had any questions relating to this EP and offering to schedule a consultation session with the members and/or board of RRKAC. No response has been received.
- On 14 November 2023, Woodside emailed RRKAC following up on the offer for Woodside to provide support to RRKAC for EP consultation.
- On 14 November 2023, RRKAC emailed Woodside advising that he would put Woodside in touch with the most appropriate team member to progress discussions.
- On 16 November 2023, Woodside emailed RRKAC with thanks and advice that Woodside will wait to hear from the nominated individual.
- On 19 December 2023, Woodside emailed RRKAC wishing a happy festive season, thanking RRKAC for their contributions throughout the year and offering availability for consultation sessions.
- On 9 January 2024, Woodside emailed RRKAC following up on this activity and offering an opportunity for discussion. Woodside advised RRKAC of the best contact after 31 January 2024.
- On 11 January 2024, Woodside and RRKAC, held a telephone discussion:

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<ul style="list-style-type: none"> - (1) RRKAC have recently employed new personnel, RRKAC noted that once the new employees were settled in, RRKAC would be happy to consult with Woodside on relevant EPs. - (2) RRKAC noted that some RRKAC country is on the coast (and would be affected by an oil spill or another such environmental incident), they feel that EMBA's are far too broad, and the areas covered by EMBA's are far too big and unfeasible. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>RRKAC provided feedback regarding:</p> <p>(1) It had employed new personnel and would be happy to consult on relevant EPs once they were settled in.</p> <p>(2) It considers the EMBA's too broad.</p> <p>While general feedback has been received, RRKAC has not provided objections or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>Following a phone discussion with RRKAC, Woodside noted:</p> <p>(1) RRKAC had new employees starting.</p> <p>(2) RRKAC considered the EMBA's were too broad.</p> <p>Woodside accepts that RRKAC has no feedback on this activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with RRKAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to RRKAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1, 2) Not required.</p> <p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with RRKAC as part of ongoing engagement (Section 7.10 and Appendix G of the EP).</p>
<p>Ngarluma Aboriginal Corporation (NAC)</p>		

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NAC is established under the Native Title Act 1993 by the Ngarluma people to represent the Ngarluma people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to NAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that NAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to NAC over 4 months, demonstrating a "reasonable period" of consultation.
- Woodside asked NAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25(1) of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NAC functions, interests or activities.

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Historical Engagement

- On 18 July 2023, Woodside emailed NAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed NAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- **(1)** On 18 September 2023, NAC emailed Woodside proposing the establishment of a joint working group to manage the consultation process for Woodside's environmental plans. NAC explained the purpose of the group and noted the positions and roles of the NAC representatives that would be included in the working group. NAC also discussed seeking funding from Woodside to support the formation of this new working group and pointed out key actions moving forward, the timeframe of events and attached a budget summary.
- On 10 October 2023, Woodside emailed NAC approving the proposal in principle and affirming that Woodside is looking forward to ongoing consultation. Woodside stated that some administrative process still needed to be arranged and asked for NAC's availability to schedule a meeting.
- On 19 October 2023, Woodside emailed NAC following up on previous correspondence and asking for a response to the email sent on 10 October 2023.
- **(1)** On 19 October 2023, NAC emailed Woodside advising NAC would share a draft engagement letter with Woodside soon. NAC also requested for Woodside to share the expected agenda for the upcoming sessions and advise if there were any urgent matters pending.

Summary of information provided and record of consultation for this EP:

- On 2 November 2023, Woodside emailed NAC outlining top priorities and listed future EPs for consultation. Woodside included a link to the Consultation Information Sheet for this activity and requested feedback regarding the activity.
- On 3 November 2023, Woodside emailed NAC with a future EP priority list which included this EP, with a link to the Consultation Information Sheet. Woodside also asked NAC for their availability over the next two weeks.
- **(1)** On 3 November 2023, NAC emailed Woodside advising that the draft engagement protocol would be shared on this date and noting that once executed, operational matters could be addressed in the first working group meeting. NAC also requested an estimation of the timeframe for working through the list.
- **(1)** On 3 November 2023, NAC emailed Woodside a draft engagement protocol letter and stated that they look forward to closing out this matter and scheduling a meeting.
- On 13 November 2023, Woodside emailed NAC acknowledging that Woodside noted that NAC were not available for consultation prior to 25 November 2023, noting that Woodside would respond to the draft engagement protocol as soon as possible.
- **(1)** On 13 November 2023, NAC emailed Woodside noting there were no other urgent EP consultations, noting this EP (among others) had previously been flagged for consultation and requiring the engagement protocol be in place prior to any meetings occurring.
- On 17 November 2023 Woodside emailed NAC advising of the proposed activity (Record of Consultation, reference 1.70) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested

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information on the interests that NAC and its members may have within the EMBA, information on how NAC would like to engage, and requested that NAC provide information to other individuals as required.

Quarterly Heritage Meetings:

Woodside convenes a quarterly meeting of Traditional Custodian representatives from the Representative Aboriginal Corporations involved in historical native title claims over the Burrup Peninsula, including NAC. Individual attendees are nominated by their representative Aboriginal Corporations. These meetings are summarised separately in this table.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>During consultation engagement related to this activity and others since October 2023, NAC has no feedback, questions or objections to the activity.</p> <p>(1) NAC proposed establishing a Joint Working Group to engage in meetings with Woodside for ongoing consultation. NAC noted it had they have capacity issues and require resourcing to cover costs of meeting.</p>	<p>Woodside accepts that NAC has no feedback on this activity at this time.</p> <p>(1) Separate from consultation under regulation 25 of the Environment Regulations, Woodside will establish an agreement with NAC to work with the NAC Working Group. The agreement and Working Group would be used to frame ongoing consultation during the life of the EP. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (See Section 7.1.16 of this EP).</p>	<p>Existing controls considered sufficient as described in Section 6 and 7.</p> <p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NAC through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside’s Program of Ongoing Engagement with Traditional Custodians (Appendix G).</p>

Yindjibarndi Aboriginal Corporation

YAC is established under the Native Title Act 1993 by the Yindjibarndi people to represent the Yindjibarndi people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation Yindjibarndi Aboriginal Corporation (YAC) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

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Sufficient Information:

- Woodside sought direction on Yindjibarndi's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to Yindjibarndi. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the information and request for feedback be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".
- Advised that Yindjibarndi can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with Yindjibarndi in October 2023. Woodside has responded to Yindjibarndi over 5 months, demonstrating a "reasonable period" of consultation.

Woodside asked Yindjibarndi if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Yindjibarndi functions, interests, or activities.

Historical engagement:

- (1) On 6 and 7 July 2023, Woodside called Yindjibarndi who reiterated they would prefer that comments come from coastal Aboriginal Corporations and not themselves.

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- On 18 July 2023, Woodside emailed Yindjibarndi NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Yindjibarndi advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult. No response was received to this email.
- On 26 July 2023, Woodside emailed Yindjibarndi Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.
- **(2)** On 1 August 2023, Yindjibarndi emailed Woodside acknowledging 26 July 2023 email, and advising that NYFL would manage Oil and Gas matters on behalf of Yindjibarndi.

Summary of information provided and record of consultation for this EP:

- On 19 October 2023, Woodside emailed Yindjibarndi (via NYFL) of the proposed activity (Record of Consultation, reference 1.71) and provided a Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Yindjibarndi and its members may have within the EMBA, information on how Yindjibarndi would like to engage, and requested that Yindjibarndi provide information to other individuals as required.

See NYFL on behalf of Yindjibarndi below for record of further engagement.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Yinjibarndi expressed that they would prefer that Traditional Owner groups with land and sea adjacent to and within the precinct of the projects provide comment.</p> <p>(2) Yindjibarndi has instructed Woodside that it will be represented by NYFL in ongoing discussion about EP’s.</p> <p>During consultation engagement related to this activity and others since October 2023, Yindjibarndi/NYFL has provided no feedback, questions or objections to the activity.</p>	<p>(1) Woodside respects Yinjibarndi’s position that Traditional Owners whose land and sea are adjacent to or within the precinct of the projects should be able to provide comment.</p> <p>(2) Woodside will engage with NYFL on behalf of Yindjibarndi for ongoing consultation related to this activity, separate from consultation under regulation 25 of the Environment Regulations.</p> <p>Woodside accepts that Yindjibarndi/NYFL has no feedback on this activity at this time.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside</p>	<p>(1) Not required.</p> <p>(2) Future correspondence will be sent through NYFL.</p> <p>Existing controls considered sufficient as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NYFL through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside’s Program of Ongoing Engagement with Traditional Custodians (Appendix G).</p>

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	will apply its Management of Change and Revision process (see Section 7.1.16).	
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Wanparta Aboriginal Corporation
 Wanparta is established under the Native Title Act 1993 by the Ngarla people to represent the Ngarla people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Wanparta Aboriginal Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

- Sufficient Information:**
- Woodside sought direction on Wanparta’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
 - Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Wanparta. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
 - Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
 - Articulated planned and unplanned environmental risks and impacts, with proposed controls.
 - Asked for the consultation and information sheets to be distributed to members and individuals as required.
 - Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
 - Advised that Wanparta can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

- Reasonable Period:**
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
 - Woodside has provided Wanparta Aboriginal Corporation with the opportunity to provide feedback over 5 months, demonstrating a “reasonable” period of consultation.

- Woodside asked Wanparta Aboriginal Corporation if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Wanparta Aboriginal Corporation's functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed Wanparta NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Wanparta advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Wanparta Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- **(1)** On 31 August 2023, Woodside met with the Wanparta Board on another activity, at that meeting Wanparta stated their sea country values noting that water and the ocean was extremely important to them, and they had a responsibility to look after ocean and lore. They noted the bream, octopus, stingray and kestrel as totemic species.

Summary of information provided and record of consultation for this EP:

- On 4 October 2023, Woodside phoned Wanparta to check in and consult on upcoming matters.
- On 4 October 2023, Woodside emailed Wanparta following up with a summary of the previous phone call. The outcomes of the phone discussion were:
 - **(2)** Wanparta's interest in a Wanparta Ranger program and EP funding.
 - **(2)** Wanparta's interest in a Karratha Gas Plant visit, as well as possible school visits and Perth Office visits.
 - Wanparta's request for updates on EPs unrelated to this one.
 - Woodside's query into Wanparta's thoughts on a formal authorisation/consent/endorsement process regarding future EPs.
- On 5 October 2023, Woodside emailed Wanparta advising of the proposed activity (Record of Consultation, reference 1.72) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that Wanparta and its members may have within the EMBA, information on how Wanparta would like to engage, and requested that Wanparta provide information to other individuals as required.
- **(3)** On 6 October 2023, Wanparta emailed Woodside thanking them for the previous summary email (5 October 2023) and stated that it will bring all the 4 October 2023 items to the Board for further consideration and would revert shortly after.
- On 7 November 2023, Woodside emailed Wanparta following up previous correspondence (6 October 2023) and to check if there was any further information Wanparta would like from Woodside regarding this EP. No response was received.

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Ongoing engagement:

- **(4)** On 13 November 2023, Wanparta emailed Woodside requesting funding to assist with ongoing consideration of Woodside EPs. Wanparta noted the consultation meeting to be held between Wanparta and Woodside in February 2023.
- **(4)** On 22 November, Woodside acknowledged Wanparta’s requests and agreed to seek out available options for funding.
- From 24 - 28 November 2023, Woodside and Wanparta exchanged emails seeking availability for a phone call.
- **(4)** On 30 November 2023, Wanparta emailed Woodside in relation to a financial matter unrelated to this EP, also suggesting a date for a directors’ meeting for the purposes of ongoing consultation across EPs in Karratha on 23 February 2023.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Wanparta stated that water and the ocean were extremely important to them, and they had a responsibility to look after ocean and lore. They noted the bream, octopus, stingray and kestrel as totemic species.</p> <p>(2) Wanparta expressed interest in a range of social investment opportunities including a ranger program. Wanparta stated their interest in ongoing engagement with Woodside. Wanparta are currently discussing these issues at Board level.</p> <p>(3) Wanparta acknowledged receipt of the consultation information but has not provided feedback, questions or objections to the activity despite follow up.</p> <p>(4) Wanparta requested funding to participate in ongoing consultation.</p>	<p>(1) Woodside assessed Wanparta’s interest in water and the species described to represent potential cultural values.</p> <p>(2, 4) Woodside is continuing to work with Wanparta regarding social investment opportunities. Woodside considers all funding requests and supports funding within reasonable parameters. Separate from consultation under regulation 25 of the Environment Regulations, Woodside has commenced discussion with Wanparta about a framework agreement for ongoing engagement. Wanparta intended to discuss the proposal with their Board during their meeting in October. Woodside will follow up on a response and seek to reach a Framework Agreement during early 2024. The Framework Agreement is an effective mechanism for social investment opportunities, including for the ranger program. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff, a face-to-face meeting with appropriate material (pictures, maps, video) and project attendance</p>	<p>(1, 2) Woodside updated Section 4.9 to record WAC’s interests and potential cultural values and assessed potential impact on these, including controls, in Section 6 and 7. Woodside is implementing a program to actively support Traditional Custodians’ capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians (Appendix G). This includes continued engagement regarding the proposed Framework Agreement which will be applied to ongoing consultation.</p> <p>(3) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>(4) Woodside provides funding to all reasonable funding requests.</p>

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	<p>allowing opportunity to ask questions and seek further understanding.</p> <p>(3) Woodside accepts that Wanparta has no feedback on this activity at this time.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Malgana Aboriginal Corporation (Malgana)
Malgana is established under the Native Title Act 1993 by the Malgana people to represent the Malgana people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Malgana for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Malgana’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to Malgana. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that Malgana can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with Malgana in October 2023. Woodside has addressed and responded to Malgana over 5 months, demonstrating a “reasonable” period of consultation.
- Woodside asked Malgana if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Malgana’s functions, interests or activities.

Historical engagement:

- On 19 July 2023, Woodside emailed Malgana NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Malgana advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Malgana Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.
- **(1)** On 1 August 2023, Malgana emailed Woodside with thanks for information requested about another activity noting that Malgana was looking to get an environmental consultant to provide advice to their Board, noting they were seeking quotes and would come back to Woodside for cost approval.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside emailed Malgana advising of the proposed activity (Record of Consultation, reference 1.73) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Malgana and its members may have within the EMBA, information on how Malgana would like to engage, and requested that Malgana provide information to other individuals as required.
- On 20 October 2023, Woodside emailed an alternate contact at Malgana (the registered contact person), requesting feedback/further information about activities that Malgana had previously been notified about by Woodside and offered assistance to Malgana for consultation if required. Woodside re-attached earlier emails and requested the information be forwarded to any members and other individuals or groups who may have interests.
- On 26 October 2023, Woodside attempted to call Malgana on the phone number listed on the website of the Office of the Registrar of Indigenous Corporations (ORIC) but the number was not connected. Woodside emailed Malgana following up on the proposed activities and requesting feedback and re-iterating an offer of assistance if required by Malgana about the activities.

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- On 2 November 2023, Woodside again emailed Malgana following up on proposed activities and requesting feedback.
- On 2 February 2024, Woodside emailed Malgana referencing previous emails sent by Woodside in October and November 2023 about this activity. Woodside informed Malgana that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with Malgana at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments received post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) During previous consultation in relation to separate activities Malgana noted that their funding was restricted for these types of engagement and requested funding support, including an environmental consultant to advise the Board.</p> <p>Malgana has not provided feedback, objections to date or claims in response to the activity information provided since consultation began in October 2023.</p>	<p>(1) Woodside supports ongoing engagement and have responded to Malgana’s advice about the limitations on their resources. Woodside has offered to support Malgana in correspondence including support for environmental expertise supplying names of organisation that Malgana may want to consider conducting the work, however these offers have not yet been taken up yet.</p> <p>Woodside accepts that Malgana has no feedback on the activity currently.</p> <p>Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with Malgana and address appropriate support for resourcing, separate from consultation under regulation 25 of the Environment Regulations. Sufficient information to allow informed assessment has already been provided by other means, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Although consultation for the purpose of regulation 25(1) of the Environment Regulations is complete, Woodside will continue to engage with Malgana through ongoing engagement and continue to progress with establishing a framework agreement as part of Woodside’s Program of Ongoing Engagement with Traditional Custodians (Appendix G). This includes addressing Malgana’s resourcing issue for ongoing consultation via a Framework Agreement.</p> <p>Existing controls considered sufficient, as described in Section 6 and 7.</p>

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Nanda Aboriginal Corporation

Nanda is established under the Native Title Act 1993 by the Nanda people to represent the Nanda people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Nanda Aboriginal Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Nanda's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Nanda. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that Nanda can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Nanda over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked Nanda if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

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- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Nanda functions, interests or activities.

Historical Engagement:

- On 21 July 2023, Woodside emailed Nanda NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Nanda advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed Nanda (via YMAC) Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 23 October 2023, Woodside emailed Nanda (via YMAC) advising of the proposed activity (Record of Consultation, reference 1.78) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website). The email requested information on the interests that Nanda and its members may have within the EMBA, information on how Nanda would like to engage, and requested that Nanda provide information to other individuals as required.
- On 13 November 2023, Woodside emailed YMAC noting that the previous email had included the Consultation Information Sheet, not the Summary Information Sheet. Woodside attached a copy of the Summary Information Sheet.
- On 14 December 2023, Woodside emailed YMAC attaching the Program of Ongoing Consultation and advising that Woodside would like to progress negotiations on consultation frameworks with groups represented by YMAC (including Nanda). Woodside proposed the protocol would include (among other things):
 - The procedures Woodside would follow when a submission required consultation.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside would provide Nanda with the information Nanda required to make free, prior and informed decisions about Woodside’s Environmental Plans.
 - Agreement as to how Nanda would provide feedback and how that could best be represented in EPs.
 - On an agreed schedule of rates for Nanda’s participation in consultation.
 - How to manage the outputs of the consultations.
- On 21 December 2023, Woodside emailed Nanda (via YMAC) providing a list of Woodside’s upcoming activities as requested.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
Nanda has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.	Woodside accepts that Nanda has no feedback on the activity at this time. Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will	Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations, Woodside will continue to engage

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<p>In previous meetings about other unrelated activities, Nanda expressed a desire for ongoing engagement and capacity building.</p>	<p>support ongoing consultation with Nanda and address appropriate support for resourcing, separate from consultation under regulation 25 of the Environment Regulations, Sufficient information to allow informed assessment has already been provided by other means, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>with Nanda as part of ongoing engagement (Section 7.10 of the EP).</p>
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Gogolanyngor Aboriginal Corporation (GAC)

GAC is established under the Native Title Act 1993 by the Jabirr Jabirr/Ngumbarl and Bindunbur people to represent the Jabirr Jabirr/Ngumbarl and Bindunbur people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with GAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on GAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to GAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.

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- Advised that GAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to GAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked GAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on GAC functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed GAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that GAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed GAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 6 October 2023, Woodside emailed GAC advising of the proposed activity (Record of Consultation, reference 1.79) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that GAC and its members may have within the EMBA, information on how GAC would like to engage, and requested that GAC provide information to other individuals as required. The email requested information on the interests that GAC and its members may have within the EMBA. Woodside also suggested a lunch meeting in Broome the following week.
- **(1)** On 7 October 2023, GAC responded thanking Woodside for its email and confirming it would be available to meet in Broome the following week.
- On 7 October 2023, Woodside thanked GAC for its email and confirmed it would try to line up a meeting in Broome.
- On 18 October 2023, Woodside emailed GAC to follow up if there were any questions regarding the EP and requested a suitable time to call.
- **(2)** On 19 October 2023, GAC emailed Woodside and confirmed it had briefly seen the consultation material and would follow up. No response has been received.

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- On 3 November 2023, Woodside emailed GAC following up on previous correspondence and requesting to meet in person in Broome the following week. No response has been received.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) GAC advised it was available to meet Woodside in Broome.</p> <p>(2) GAC confirmed it had received the consultation information but has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>(1) Woodside noted GAC's interest in a meeting and proposed several potential dates in November.</p> <p>(2) Woodside accepts that GAC has no current feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with GAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to GAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with GAC as part of ongoing engagement (Section 7.10 of the EP).</p>

Nimanburr Aboriginal Corporation

Nimanburr is established under the Native Title Act 1993 by the Nimanburr people to represent the Nimanburr people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Nimanburr for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

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- Woodside sought direction on Nimanburr's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Nimanburr. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that Nimanburr can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Nimanburr over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked Nimanburr if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25(1) of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Nimanburr functions, interests or activities.

Historical Engagement:

- On 18 July 2023, Woodside emailed KLC on behalf of Nimanburr NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Nimanburr advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 6 October 2023, Woodside phoned Nimanburr who invited them to visit their community on the 10 October 2023.

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- On 6 October 2023, KLC emailed Woodside with a formal invitation to meet and present at their Nimanburr Director’s meeting on the 13 October 2023.

Summary of information provided and record of consultation for this EP:

- On 10 October 2023, Woodside met with Nimanburr in person on Country and hand delivered the below documents and explained the proposed activity. At this meeting Woodside also:
 - Provided a Consultation Information Sheet and explained the proposed activity.
 - Explained the EMBA and how it was developed.
 - Asked if there were any cultural values, they wished to share with Woodside, noting that information could be kept confidential.
 - Asked if there were any relevant persons that Woodside should consult with to which Nimanburr replied; no.
 - (1)** Asked if Nimanburr had any further questions or concerns for this EP, to which Nimanburr replied; no.
 - Confirmed that Nimanburr would like to be consulted on a quarterly basis about Woodside activities with consultation to take place out on Nimanburr community.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Nimanburr has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023. When asked on 10 October 2023, Nimanburr had no questions or concerns for the EP.</p>	<p>(1) Woodside accepts that Nimanburr has no feedback or concerns for this EP.</p> <p>Sufficient information to allow informed assessment has already been provided including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members, and a face-to-face meeting on 10 October 2023.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Existing controls considered sufficient as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Nimanburr as part of ongoing engagement (Section 7.10 of the EP).</p>

Nyul Nyul PBC Aboriginal Corporation (NNAC)

NNAC is established under the Native Title Act 1993 by the Nyul Nyul people to represent the Nyul Nyul people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NNAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NNAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to NNAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that NNAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to NNAC over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked NNAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NNAC functions, interests or activities.

Historical Engagement

- On 20 July 2023, Woodside emailed NNAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NNAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

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Summary of information provided and record of consultation for this EP:

- On 6 October 2023, Woodside emailed NNAC advising of the proposed activity (Record of Consultation, reference 1.97) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that NNAC and its members may have within the EMBA, information on how NNAC would like to engage, and requested that NNAC provide information to other individuals as required.
- On 26 October 2023, Woodside emailed NNAC/KLC requesting an opportunity to meet with NNAC and consult on EPs, informing that they were happy to pay reasonable sitting costs.
- **(1)** On 26 October 2023, NNAC/KLC emailed Woodside thanking them for their email and informed Woodside that the NNAC Board would like to meet for a consultation workshop.
- On 1 November 2023, Woodside emailed NNAC/KLC and responded that they would be happy to coordinate and fund the consultation workshop and requested a 3–4-hour time slot.
- **(1)** On 6 November 2023, NNAC/KLC emailed Woodside informing that they would seek confirmation from NNAC, but that Woodside should expect a meeting date suggesting February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) NNAC proposed a meeting date suggesting February 2024 to discuss Environment Plans, in response to Woodside’s requests to meet and offer to pay reasonable meeting costs.</p> <p>NNAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>(1) Sufficient information to allow informed assessment has already been provided including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members. Woodside looks forward to continuing engagement with NNAC in February 2024 and will pay reasonable costs as offered to NNAC.</p> <p>Woodside accepts that NNAC has no feedback on the activity at this time.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NNAC as part of ongoing engagement (Section 7.10 of the EP).</p> <p>Existing controls considered sufficient, as described in Section 6 and 7.</p>

Wanjina-Wunggurr (Native Title) Aboriginal Corporation (WWNAC)

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WWAC is established under the Native Title Act 1993 by the Wanjina and Wunggur people to represent the Wanjina and Wunggur people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with WWAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on WWAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to WWAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan."
- Advised that WWAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to WWAC over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked WWAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on WWAC functions, interests or activities.

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Historical engagement:

- On 19 July 2023, Woodside emailed WWAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that WWAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 2 October 2023, Woodside emailed WWAC advising of the proposed activity (Record of Consultation, reference 1.80) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that WWAC and its members may have within the EMBA, information on how WWAC would like to engage, and requested that WWAC provide information to other individuals as required.
- On 13 October 2023, Woodside sent an email to the Kimberley Land Council (KLC) on behalf of WWAC enquiring about the best contact person at WWAC as Woodside had not received a response from its initial email. A copy of the initial email was attached.
- On 25 October 2023, Woodside emailed KLC enquiring if the KLC was the best point of contact.
- On 26 October 2023, KLC responded thanking Woodside for its email and confirmed Woodside had sent the information to the correct email address for WWAC. KLC noted that Corporation responses could be somewhat delayed or timely due to various factors including opportunities for meetings and discussions, cultural or other corporation commitments and obligations, governance considerations, and more, and that it trusted someone would be in touch in due course.
- On 30 October 2023, KLC responded to Woodside’s email from 25 October 2023 and provided a link to the Office of the Registrar of Indigenous Corporations (ORIC).
- On 2 November 2023, Woodside emailed KLC thanking them for their response and informing them that they had exhausted all contacts listed on ORIC which is why they contacted KLC. Woodside also noted that it appreciated this time of the year was very busy and was understanding why making contact with PBCs may be difficult.
- On 2 November 2023, KLC emailed Woodside confirming that they would pass on Woodside’s email to WWAC.
- On 23 January 2024, Woodside emailed WWAC about this activity and informed WWAC that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside offered to meet with WWAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>WWAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>Woodside accepts that WWAC has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with WWAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to WWAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with WWAC as part of ongoing engagement (Section 7.10 of the EP).</p>
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Karajarri Traditional Lands Association (Aboriginal Corporation) (KTLA)

KTLA is established under the Native Title Act 1993 by the Karajarri people to represent the Karajarri people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with KTLA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on KTLA’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to KTLA. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.

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- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that KTLA can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to KTLA over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked KTLA if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on KTLA functions, interests or activities.

Historical Engagement

- On 24 July 2023, Woodside emailed KTLA NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that KTLA advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed KTLA Woodside's planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 2 October 2023, Woodside emailed KTLA advising of the proposed activity (Record of Consultation, reference 1.81) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that KTLA and its members may have within the EMBA, information on how KTLA would like to engage, and requested that KTLA provide information to other individuals as required.
- On 13 October 2023, Woodside sent a follow up email seeking to confirm the best contact person at KTLA as Woodside had not received a response to its initial email. A copy of the initial email was attached.

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- On 14 November 2023, Woodside sent a follow up email enquiring if there is any further information needed and attached a copy of the Environment Plan Summary sheet. Woodside also requested for the opportunity to meet.
- On 23 January 2024, Woodside emailed KTLA informed KTLA that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside offered to meet with KTLA at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>KTLA has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>Woodside accepts that KTLA has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with KTLA (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to KTLA will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with KTLA as part of ongoing engagement (Section 7.10 of the EP).</p> <p>Existing controls considered sufficient, as described in Section 6 and 7.</p>

Mayala Inninalang Aboriginal Corporation (MIAC)

MIAC is established under the Native Title Act 1993 by the Mayala people to represent the Mayala people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with MIAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

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- Woodside sought direction on MIAC's preferred method of consultation. Woodside has offered to hold meetings at the location and time of MIAC's choosing, with MIAC's nominated representatives (including face-to-face meetings with the Board). These meetings did not occur due to a lack of response to Woodside's requests. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25(1) of the Environment Regulations consultation.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to MIAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan".
- Advised that MIAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with MIAC in October 2023. Woodside has addressed and responded to MIAC over 5 months demonstrating a "reasonable" period of consultation.

Woodside asked MIAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on MIAC functions, interests or activities.

Historical Engagement:

Kimberley Land Council (KLC) is the nominated Representative of MIAC.

- On 19 July 2023, Woodside emailed KLC to request they forward an email from Woodside to MIAC about guidelines and policies released by NOPSEMA.

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- On 19 July 2023, Woodside emailed MIAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that MIAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 8 August 2023, MIAC (via NOPSEMA) emailed Woodside enclosing a letter relating to among other things:
 - Culturally appropriate consultation processes,
 - Information that will support free, prior and informed consent.
 - **(2)** Financial support to bring together the right people to ensure appropriate consultations.

Summary of information provided and record of consultation for this EP:

- **(1)** On 13 October 2023, Woodside emailed MIAC advising of the proposed activity (Record of Consultation, reference 1.82) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that MIAC and its members may have within the EMBA, information on how MIAC would like to engage, and requested that MIAC provide information to other individuals as required.
- On 16 October 2023, Woodside emailed MIAC introducing a new Woodside focal point and offering the opportunity for feedback by meeting in person with the Board and members.
- On 18 October 2023, Woodside emailed KLC asking if previous correspondence had been received and passed on to MIAC.
- On 26 October 2023, KLC emailed Woodside advising that their email had been forwarded to the relevant corporation.
- On 27 October 2023, Woodside emailed MIAC following up on previous emails, informing MIAC that Woodside would cover meeting costs including flights and accommodation if they wished to meet in Perth. Alternatively, Woodside suggested an online Teams meeting if that was the preferred method of consultation. No response has been received.
- On 23 January 2024, Woodside emailed MIAC to inform them that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside offered to meet with MIAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.
- On 23 January 2024, KLC emailed Woodside advising that the contact person for MIAC had forwarded on Woodside's email to the PBC.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
MIAC has not provided feedback, objections to date or claims in response to the activity information provided since consultation began in October 2023. (1) In the 8 August 2023 letter regarding consultation on another activity, MIAC stated that they are not	Woodside accepts that MIAC has no feedback on the activity at this time. (1) Woodside has responded to MIAC's financial requests in the 8 August 2023 letter and have offered financial support for ongoing consultation on	Existing controls considered sufficient, as described in Section 6 and 7. (1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will

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<p>funded and required financial support for ongoing consultation.</p>	<p>27 October 2023, which has not yet been taken up by MIAC. Sufficient information to allow informed assessment on this activity has been provided, including Consultation Information Sheets and a Summary Information Sheet developed by Indigenous staff members.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>continue to consult with MIAC as part of ongoing engagement (Section 7.10 of the EP).</p>
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Nyangumarta Warrarn Aboriginal Corporation (NWAC)

NWAC is established under the Native Title Act 1993 by the Nyangumarta people to represent the Nyangumarta people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NWAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NWAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to NWAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that NWAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

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Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to NWAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked NWAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NWAC functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed NWAC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that NWAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed NWAC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 2 October 2023, Woodside emailed NWAC advising of the proposed activity (Record of Consultation, reference 1.83) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that NWAC and its members may have within the EMBA, information on how NWAC would like to engage, and requested that NWAC provide information to other individuals as required.
- On 11 October 2023, Woodside emailed seeking an alternative NWAC contact to arrange a meeting.
- On 12 October 2023, Woodside phoned NWAC’s Operations Manager but there was no answer.
- On 18 October 2023, Woodside emailed an alternative YMAC contact seeking an opportunity to speak to the contact person for NWAC.
- On 18 October 2023, NWAC sent a mobile text message asking Woodside to call back on the 19 October 2023.
- On 19 October 2023, Woodside phoned NWAC. Both parties have committed to future engagements.

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- On 19 October 2023, Woodside emailed NWAC with a request for a cost estimation and offered to meet at a time and place that was suitable to NWAC. No response has been received.
- On 24 November 2023, Woodside emailed NWAC (via YMAC) introducing themselves and submitted a set of questions requesting their response in an effort to enhance their relationship. Woodside queried best contact details regarding consultation matters.
- On 24 November 2023, NWAC (via YMAC) emailed Woodside their communications protocol. NWAC noted additional expenses would be involved and committed to preparing a budget for Woodside's consideration.
- On 27 November 2023, Woodside emailed NWAC (via YMAC) thanking them for their response and re-iterating that Woodside would meet at the place and time suitable to NWAC.
- On 11 December 2023, Woodside met with NWAC, Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs.
 - Displayed a map of activities open for feedback to be discussed in the meeting and provided a list of other upcoming activities open for consultation.
 - Woodside provided an overview of this activity, explaining that these were floating vessels and not permanent rigs.
 - Woodside explained the difference between crude, gas and condensate.
 - Described the types of vessels involved.
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks are not expected to occur and are unlikely.
 - Displayed and spoke to the EMBA and how they are developed.
 - Stated that Woodside wanted to understand how the functions, activities, or interests of NWAC and the people it represents may be impacted by any of those activities.
 - Specifically asked the following:
 - How could these activities impact your cultural values, interests, and activities - does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - **(1)** NWAC asked what it would mean if a spill reached Eighty Mile Beach. Woodside responded that they would bring other subject experts to future meetings.
 - **(2)** Senior Elder said she would like to speak with other Elders following this meeting.

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- (2) NWAC said they believe future meetings would be required.
- Woodside advised that it would continue to take feedback from NWAC for the life of the EP.
- On 11 December 2023, Woodside emailed NWAC (via YMAC) thanking them for the meeting and sharing contact details.
- On 11 December 2023, Woodside emailed NWAC (via YMAC) thanking them for their availability to attend Woodside’s presentation. Woodside provided a copy of the presentation given at the meeting and followed up on key topics discussed in the meeting and offered to provide further information regarding the activity.
- On 14 December 2023, Woodside emailed YMAC attaching the Program of Ongoing Consultation and advised that Woodside wanted to progress negotiations on consultation frameworks with groups represented by YMAC (including NWAC). Woodside proposed the protocol would include (among other things):
 - The procedures Woodside will follow when a submission requires consultation.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside will provide NWAC with the information NWAC requires to make free, prior and informed decisions about Woodside’s EPs.
 - Agreement as to how NWAC will provide feedback and how that can best be represented in EPs.
 - An agreed schedule of rates for NWAC’s participation in consultation.
 - How the outputs of the consultations will be managed.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>During a face-to-face meeting NWAC asked:</p> <p>(1) What would happen if an oil spill reached Eighty Mile Beach.</p> <p>(2) NWAC Elder advised she would speak to other elders about the information and NWAC said that further meetings should take place.</p>	<p>(1) Woodside noted that they would bring subject experts to future meetings.</p> <p>(2) Separate from consultation under regulation 25 of the Environment Regulations. Woodside supports ongoing engagement with NWAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to NWAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside</p>	<p>(1) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>(2) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NWAC as part of ongoing engagement (Section 7.10 of the EP). and continue to progress with establishing a Framework Agreement as part of Woodside’s Program of Ongoing Engagement with Traditional Custodians (Appendix G). This includes resourcing NWAC for any reasonable request via the Framework Agreement.</p>

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will apply its Management of Change and Revision process (see Section 7.1.16).

Nyangumarta Karajarri Aboriginal Corporation (NKAC)

NKAC is established under the Native Title Act 1993 by the Nyangumarta and Karajarri people to represent the Nyangumarta and Karajarri people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NKAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on NKAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to NKAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that NKAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to NKAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked NKAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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- Woodside engages in ongoing consultation, beyond that required by regulation 25(1) of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NKAC functions, interests or activities.

Historical Engagement

- On 24 July 2023, Woodside emailed NKAC/KLC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that NKAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 26 July 2023, Woodside emailed NKAC/KLC Woodside’s planned Program of Ongoing Engagement with Traditional Custodians.

Summary of information provided and record of consultation for this EP:

- On 13 October 2023, Woodside emailed NKAC (via KLC) advising of the proposed activity (Record of Consultation, reference 1.84) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website). The email requested information on the interests that KLC and its members may have within the EMBA, information on how KLC would like to engage, and requested that KLC provide information to other individuals as required.
- On 18 October 2023, Woodside emailed NKAC (via KLC) confirming if the email sent from Woodside on 13 October 2023, had been received and passed along to Nyangumarta Karajarri Aboriginal Corporation.
- On 26 October 2023, KLC (representing NKAC) emailed Woodside to confirm receipt of emails and stated that they would pass on relevant information. KLC did note that turnaround times could be timely and delayed due to several factors.
- On 27 October 2023, Woodside emailed KLC asking for advice on forwarding a meeting request on to NKAC.
- On 23 January 2024, Woodside emailed NKAC (via KLC) advising that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside offered to meet with NKAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.
- On 23 January 2024, KLC (representing NKAC) emailed Woodside to confirm receipt of emails and stated they would pass on relevant information. KLC noted that turnaround times could be timely and delayed due to several factors.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>NKAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023. KLC, representing NKAC, has confirmed receipt of materials and has passed on to relevant persons.</p>	<p>Woodside accepts that NKAC has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with NKAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to NKAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NKAC as part of ongoing engagement (Section 7.10 of the EP).</p>
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Yawuru Native Title Holders Aboriginal Corporation (Yawuru)

Yawuru is established under the Native Title Act 1993 by the Yawuru people to represent the Yawuru people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Yawuru for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Yawuru’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Yawuru. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.

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- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that Yawuru can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Yawuru over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked Yawuru if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Yawuru functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed Yawuru (NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that Yawuru advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 19 October 2023, Woodside emailed Yawuru advising of the proposed activity (Record of Consultation, reference 1.85) and provided a a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that Yawuru and its members may have within the EMBA, information on how Yawuru would like to engage, and requested that Yawuru provide information to other individuals as required.
- On 24 January 2024, Woodside sent a follow up email to Yawuru informing them that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with Yawuru at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims have been received in response to the information since consultation commenced in October 2023, despite follow up.</p>	<p>Woodside accepts that Yawuru has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Yawuru (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to Yawuru will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Yawuru as part of ongoing engagement (Section 7.10 of the EP).</p>

Dambimangari Aboriginal Corporation (DAC)

DAC is established under the Native Title Act 1993 by the Dambimangari people to represent the Dambimangari people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient information:

- Woodside sought direction on DAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to DAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.

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- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that DAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to DAC over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked DAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on DAC functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed DAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that DAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 2 October 2023, Woodside emailed DAC advising of the proposed activity (Record of Consultation, reference 1.76) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that DAC and its members may have within the EMBA, information on how DAC would like to engage, and requested that DAC provide information to other individuals as required.
- On 13 October 2023 Woodside phoned DAC's general landline but there was no answer. Woodside left a message for the CEO.

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- On 16 October 2023, Woodside emailed DAC providing information about Woodside’s consultation along the coastline of Western Australia, Northern Territory and Victoria and enquiring about the opportunity to connect with the Board in the near future.
- On 18 October 2023, Woodside emailed DAC’s deputy CEO introducing the Woodside focal point and asking to listen to any feedback on Woodside activities.
- On 25 October 2023, Woodside emailed KLC seeking the most recent contact details for DAC.
- On 30 October 2023, KLC emailed Woodside acknowledging Woodside’s previous email and advising Woodside that the ORIC website would have the relevant contact details.
- On 2 November 2023, Woodside emailed KLC, notifying KLC that Woodside had previously tried all available contacts listed on ORIC site. Woodside advised that they would be interested to meet members and were flexible with meeting dates and logistics.
- On 2 November, KLC emailed Woodside stating they would pass Woodside’s email onto their contacts at the relevant organisations.
- On 8 November 2023, Woodside emailed the DAC CEO requesting the opportunity for a ‘meet & greet’, highlighting the purpose for the meeting was to explain the current EPs as they related to the Dambimangari Traditional Owners. Woodside attached an offer to meet document alongside the relevant EP to the email.
- On 8 November 2023, Woodside visited the DAC offices in Derby in person to meet and greet and seek feedback on EPs. The activity was discussed, and the purpose of consultation was communicated to DAC. Woodside gave an overview of the EMBA and provided the link to NOPSEMA regarding First Nations engagement. Woodside asked if DAC had any questions or would like to provide feedback and if there was anyone else, they should speak to or to speak with to make introductions. Woodside was advised that the DAC CEO was the best person to organise further contact. DAC provided a contact for a ranger project and gave the CEO contact details.
- On 11 November 2023, Woodside wrote to DAC requesting a meeting with the CEO and Board, at a time, date and location of DAC’s choosing. Woodside offered to pay reasonable costs for the meeting. No response has been received.
- On 23 January 2024, Woodside emailed DAC following up on previous attempts to consult and meet with DAC about this activity. Woodside informed DAC that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with DAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
DAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023, despite follow-up.	Woodside accepts that DAC has no feedback on the activity at this time. Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with DAC (Section 7.10). As outlined in the consultation summary above,	Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue

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	<p>sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to DAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>to engage with DAC as part of ongoing engagement (Section 7.10 of the EP).</p>
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Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC)

BJNAC is established under the Native Title Act 1993 by the Bardi and Jawi People to represent the Bardi and Jawi people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with BJNAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient information:

- Woodside sought direction on BJNAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to BJNAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Woodside has provided NOPSEMA’s brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that BJNAC can request that particular information provided in the consultation not be published (to align with 25(4)).

Reasonable Period:

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside has addressed and responded to BJNAC over a 5-month period.

Woodside asked BJNAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.14 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BJNAC'S functions, interests or activities.

Historical Engagement

- **(1)** On 14 April 2023, BJNAC emailed Woodside, advising that that BJNAC would be unable to engage with Woodside on a goodwill basis via attending and coordinating meetings, or with general correspondence and requested that Woodside factor in the values that are outlined in BJNAC's Joint Management Plan for the Park, into Woodside's EP plan for projects. BJNAC noted that there may be cases where BJNAC will simply want to make Woodside aware of the Bardi and Jawi Marine Park and will be requesting that Woodside factor in the values that are outlined in the Joint Management Plan for the Park, into Woodside's EP plan for projects. In other cases, BJNAC may want to respond with more detailed information if a project is likely to have a greater effect on Bardi and Jawi sea country. BJNAC stated that it will provide Woodside with a resourcing protocol within 28 days and objected to Woodside progressing matters with the PBC or making a submission to NOPSEMA.
- **(2)** On 5 June 2023, BJNAC emailed Woodside a draft resourcing protocol for consideration and stated it would await comments from Woodside.
- On 18 July 2023, Woodside emailed BJNAC thanking them for the draft protocol and restated Woodside's objectives for consultation. In the email, Woodside included a summary sheet for another activity unrelated to this EP along with NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that BJNAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 8 August 2023, BJNAC (via NOPSEMA) emailed Woodside enclosing a letter relating to among other things:
 - Culturally appropriate consultation processes,
 - Information that will support free, prior and informed consent.
 - Financial support to bring together the right people to ensure appropriate consultations.
- **(1)** On 13 October 2023, Woodside met face-to-face with BJNAC in a meeting on implementing an engagement framework. A framework draft was reviewed, and edits proposed. It was agreed that both parties were on the same page for ongoing consultation. BJNAC commended Woodside for how they engage and consult

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with First Nations peoples. BJNAC's preferred methods of consultation, including the use of animated videos, were discussed with suggestions agreed to by both parties.

Summary of information provided and record of consultation for this EP:

- On 23 November 2023, Woodside emailed BJNAC advising of the proposed activity (Record of Consultation, reference 1.99) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that BJNAC and its members may have within the EMBA, information on how BJNAC would like to engage, and requested that BJNAC provide information to other individuals as required.
- On 23 November 2023, Woodside telephoned BJNAC, there was no answer.
- On 14 December 2023, Woodside emailed BJNAC Woodside's planned Program of Ongoing Engagement with Traditional Custodians. Woodside noted that Woodside's contracting team had not settled the Agreement Protocol yet but noted the following inclusions:
 - Agreement between Woodside and BJNAC and as representatives of the Bardi Jawi people (together "BJNAC") to consult in a meaningful and genuine manner.
 - The basic procedure Woodside will follow when a submission requires consultation – notification and invitation to meet.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside will provide BJNAC the information BJNAC requires to make a free, prior and informed decisions.
 - Agreement as to how BJNAC will provide feedback and how we can best represent BJNAC's feedback in our submissions.
 - An agreed schedule of rates.
 - How the outputs of the consultation are managed.
- On 15 December 2023, emails were exchanged between Woodside and BJNAC seeking a date to meet.
- On 18 January 2024, emails were exchanged between Woodside and BJNAC seeking a time to meet. 25 January 2024 was discussed and agreed between BJNAC and Woodside.
- **(3)** On 25 January 2024, BJNAC emailed and sent a letter to Woodside making the following points (among others):
 - Will seek technical advice about the activities proposed in the EP.
 - Will seek advice on potential environmental implications of the activity in the EP.
 - Advice on potential impact on cultural heritage and rights under law and custom.
 - Consideration of reports which contain the above advice.
 - Funding requirement to allow for the above undertakings by relevant experts.
- On 2 February 2023, Woodside emailed BJNAC confirming a meeting for the week of 5 February 2024 and offering to pay costs.

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- On 2 February 2024, BJNAC emailed Woodside confirming availability and responding that they did not require costs to be paid to meet at this time.
- **(4)** On 5 February 2024, Woodside met with BJNAC's, Executive Officer who confirmed that BJNAC had no issues with this activity and no comments to make.
- **(4)** On 8 February 2024, BJNAC emailed Woodside stating they do not see themselves being affected. BJNAC requested that Woodside consult with them in the event changes occur to the oil spill scenario.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) BJNAC previously advised it has values that are outlined in the Joint Management Plan for the Bardi and Jawi Marine Park, which it may require to be noted in particular Eps.</p> <p>(2) BJNAC has requested that Woodside enter into a resourcing protocol. BJNAC has set out conditions it requires for ongoing engagement.</p> <p>(3) BJNAC advised it would seek technical advice on the proposed activity and advice on potential environmental and cultural heritage implications.</p> <p>(4) BJNAC confirmed it had no issues or comments to make about this activity.</p>	<p>(1) Woodside accepts BJNAC's feedback regarding the values outlined in the Joint Management Plan for the Bardi Jawi Gaarra Marine Park. Woodside has updated the EP to reflect BJNAC's interests in the Bardi Jawi Gaarra Marine Park, whilst noting that the Marine Park falls outside the EMBA for this EP.</p> <p>(2) Woodside is committed to resourcing BJNAC through an agreed resourcing protocol as part of ongoing consultation as required by the implementation strategy as set out regulation 22(15) of the Environment Regulations. Request by BJNAC to fund independent experts would also be agreed through the resourcing protocol.</p> <p>(3, 4) Woodside accepts BJNAC has no issues or comments to make about this activity.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.14).</p>	<p>(1) Woodside has updated Section 7.6 of the EP to reflect BJNAC's feedback and note that the Bardi Jawi Gaarra Marine Park falls outside the EMBA for this EP.</p> <p>(2, 4) As identified in Sections 6 and 7 of this EP, Woodside will continue to consult following acceptance of the EP, as required by the implementation strategy as set out in regulation 22(15) of the Environment Regulations and continue to progress with establishing a framework agreement as part of Woodside's Program of Ongoing Engagement with Traditional Custodians (Appendix G).</p> <p>(3) Not required.</p>

Balanggarra Aboriginal Corporation (BAC)

BAC is established under the Native Title Act 1993 by the Balanggarra People to represent the Balanggarra People (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Balanggarra Aboriginal Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient information:

- Woodside sought direction on BAC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to BAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that BAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to BAC over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked BAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BAC functions, interests or activities.

Historical engagement:

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- On 18 July 2023, Woodside emailed BAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that BAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 2 October 2023, Woodside emailed BAC advising of the proposed activity (Record of Consultation, reference 1.75) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that BAC and its members may have within the EMBA, information on how BAC would like to engage, and requested that BAC provide information to other individuals as required.
- On 13 October 2023, Woodside phoned BAC to make contact. No response was received.
- On 13 October 2023, Woodside contacted BAC via an alternative email address to seek advice on making contact with the BAC board or contact person.
- On 25 October 2023, Woodside phoned BAC via the registered number listed on ORIC. Call was taken but Woodside was informed that this was not the correct number for BAC.
- On 25 October 2023, Woodside emailed the Kimberley Land Council enquiring about the best method of contact for the Balangarra Aboriginal Corporation. No response was received.
- On 2 November 2023, Woodside sent a follow up email to Balangarra Aboriginal Corporation providing information about the proposed activity, enquiring about the best point of contact, confirming if any further information is required regarding this EP, and advising Woodside is available to meet as suits the CEO and Board of Directors. No response was received.
- On 23 November 2023, Woodside emailed BAC requesting an opportunity to make introductions, answer any questions and listen to feedback. No response has been received.
- On 23 January 2024, Woodside emailed BAC informing them that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with them at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
BAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.	Woodside accepts that BAC has no feedback on the activity at this time. Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with BAC (Section 7.10). As	Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue

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	<p>outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to BAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>to engage with BAC as part of ongoing engagement (Section 7.10 of the EP).</p>
<p>Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with ETNTAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Woodside sought direction on ETNTAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation. • Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to ETNTAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Confirmed the purpose of consultation and set out in detail what is being sought through consultation. • Articulated planned and unplanned environmental risks and impacts, with proposed controls. • Asked for the consultation and information sheets to be distributed to members and individuals as required. • Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan. • Advised that ETNTAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations). <p>Reasonable Period:</p>		

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to ETNTAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked ETNTAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on ETNTAC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 3 October 2023, Woodside emailed ETNTAC advising of the proposed activity (Record of Consultation, reference 1.86) and provided a Summary Information Sheet (including a link to the detailed information sheet on Woodside’s website). The email requested information on the interests that ETNTAC and its members may have within the EMBA. Woodside also provided a link to NOPSEMA’s brochure “Consultation on offshore petroleum environment plans” alongside NOPSEMA’s contact details.
- On 3 October 2023, ETNTAC emailed Woodside to confirm receipt of the email and noted the link to the detailed Consultation Information Sheet wasn’t allowing access.
- On 3 October 2023, Woodside responded with a new link for the detailed Consultation Information Sheet.
- On 3 October 2023, ETNTAC responded thanking Woodside for the link and asked:
 - **(1)** Woodside to summarise why it was seeking to engage with ETNTAC regarding the project.
 - **(2)** Why the limit of potential impact is Ravensthorpe and whether this is based on the potential impacts to coastal areas from a release of hydrocarbons as far east as Ravensthorpe, or another factor impacting inland areas as well.
- On 3 October 2023, Woodside responded and:
 - Explained the methodology behind the EMBA and that the coast of Esperance falls within the catchment area.
 - Provided some common Questions and Answers regarding what constitutes a relevant person and how an EMBA is determined. Woodside noted that following a Federal Court decision, it now consults much more broadly and consults with persons based on potential impacts from an unplanned event rather than planned impacts of a proposed offshore activity.
 - Provided direction and a link to the NOPSEMA website for further information on consultation guidelines and oil spilling modelling.

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- On 24 October 2023, Woodside sent a follow-up email enquiring if ETNTAC had any questions relating to this EP and offered consultation sessions with the members and/or board of ETNTAC. No response has been received.
- On 8 December 2023, Woodside emailed ETNTAC following up on previous correspondence and offering opportunity for consultation sessions with members and/or Board of ETNT during the festive period.
- On 19 December 2023, Woodside emailed ETNTAC wishing a happy festive season, thanking ETNTAC for their contributions throughout the year and offering availability for consultation sessions.
- On 22 December, ETNTAC emailed Woodside apologising for the lack of communication and advising Woodside of when to expect future correspondence from ETNTAC.
- On 9 January 2024, Woodside emailed ETNTAC following up on previous correspondence offering to meet and discuss the EP. Woodside included contact information of the best contact person following 31 January 2024.
- On 2 February 2024, Woodside emailed ETNTAC links to NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. The email informed ETNTAC that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside offered to meet with ETNTAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>ETNTAC sought clarification on:</p> <p>(1) Why Woodside was consulting with ETNTAC.</p> <p>(2) The reasons for the limits of potential impact in the EMBA.</p>	<p>(1, 2) Woodside provided a written response advising ETNTAC of the methodology behind the EMBA, which for this EP includes the coast of Esperance, and confirmed that based on a Federal Court decision, Woodside now consults more broadly with persons based on potential impacts from an unplanned event rather than planned impacts of a proposed offshore activity. Woodside also provided some further Q&As about the development of the EMBA.</p> <p>Woodside accepts that ETNTAC has no further feedback at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with ETNTAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have</p>	<p>(1, 2) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with ETNTAC as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to ETNTAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Bundi Yamatji Aboriginal Corporation (BYAC)
 BYAC is established under the Native Title Act 1993 by the Bundi Yamatji people to represent the Bundi Yamatji people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Bundi Yamatji AC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Consultation Information Sheet publicly available on the Woodside website since September 2023.
- Provided Consultation Information Sheet and Summary Information Sheet to BYAC on 11 October 2023 based on their function, interest and activities. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Woodside sought direction on BYAC’s preferred method of consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA’s brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.

- Advised that BYAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to BYAC over 5 months, demonstrating a “reasonable period” of consultation.
- Woodside asked BYAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on BYAC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside sent two emails to BYAC advising of the proposed activity (Record of Consultation, reference 1.87) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that BYAC and its members may have within the EMBA, information on how BYAC would like to engage, and requested that BYAC provide information to other individuals as required.
- **(1)** On 1 November 2023, BYAC emailed Woodside thanking it for the information and advising there was no need for BYAC to provide a response in relation to connections to the area, noting that if any particular area was impacted by oil or spills then there would be a need to consult with BYAC.
- On 2 February 2024, Woodside emailed BYAC links to NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also informed BYAC that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside asked if BYAC would like to provide further feedback and gave contact information for direct feedback. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) BYAC advised it had no need to respond regarding this activity. BYAC advised that if there were spills or oil impacting BYAC's area of interest then BYAC should be consulted.</p>	<p>(1) Woodside accepts BYAC's feedback. In line with the Oil Pollution First Strike Plan, in the highly unlikely event a hydrocarbon release was to impact BYAC's area of interest, Woodside will contact BYAC.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with BYAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to BYAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) The Oil Spill First Strike Plan (Appendix I) includes a requirement to contact Traditional Owners who may be affected by a spill.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with BYAC as part of ongoing engagement (Section 7.10 of the EP).</p>
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Ngadju Native Title Aboriginal Corporation (Ngadju)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NNTAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Ngadju's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Ngadju. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.

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- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that Ngadju can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Ngadju over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked Ngadju if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by Regulation 25(1), throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Ngadju functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 16 October 2023, Woodside emailed Ngadju advising of the proposed activity (Record of Consultation, reference 1.74) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that Ngadju and its members may have within the EMBA, information on how Ngadju would like to engage, and requested that Ngadju provide information to other individuals as required.
- On 20 October 2023, Woodside phoned Ngadju and left a message asking for its call to be returned.
- On 20 October 2023, Ngadju returned Woodside's phone call.
- On 20 October 2023, in follow-up to the phone call, Woodside emailed a different representative from Ngadju, advising of the proposed activity and again provided the Summary Information Sheet and links to detailed information sheets. Woodside also provided a link to NOPSEMA's Consultation Brochure as well as their contact details.
- On 31 October 2023, Woodside sent a follow up email asking whether Ngadju would like any further information on the environment plan and advising it was available to meet in Perth on 2 November 2023 or 8 November 2023. No response was received.

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- On 7 December 2023, Woodside sent a follow up email asking whether Ngadju would like any further information on the environment plan and advising there was availability to meet in Perth on 11 December 2023. No response was received.
- On 19 December 2023, Woodside emailed Ngadju wishing them a safe festive season and offered assistance on the environment plan.
- On 25 January 2024, Woodside phoned Ngadju corporation and left a message requesting a return call, no response was received.
- On 2 February 2024, Woodside emailed Ngadju NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Ngadju advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Ngadju has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>Woodside accepts that Ngadju has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Ngadju (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to Ngadju will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with NNTAC as part of ongoing engagement (Section 7.10 of the EP).</p>

Gnaala Karla Booja Aboriginal Corporation (GKB)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with GKB for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

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- Woodside sought direction on GKB'S preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to GKB. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that GKB can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to GKB over 5 months, demonstrating a "reasonable period" of consultation.
- Woodside asked GKB if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by Regulation 25, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on GKB functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside emailed GKB advising of the proposed activity (Record of Consultation, reference 1.88) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that GKB and its members may have within the EMBA, information on how GKB would like to engage, and requested that GKB provide information to other individuals as required.

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- On 27 October 2023, Woodside emailed GKB following up on the 11 October 2023 email, offering to meet and asking whether any further information was required and whether there were any other individuals or groups that Woodside should consult with. No response has been received.
- On 7 December 2023, Woodside received a letter from GKB stating:
 - (1) Woodside should inform GKB as soon as possible once an unplanned event occurs.
 - (2) Woodside to update GKB on the progress of the Ngujima-Yin operations.
 - (2) GKB will inform Woodside if there are matters relating to the operations that GKB believe Woodside should know.
 - (3) There are no additional matters that GKB wishes to provide in response to the EP.
- On 2 February 2024, Woodside emailed GKB NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email acknowledged that Woodside would keep GKB up to date on this activity and that consultation prior to being submitted to NOPSEMA would close for this EP on 23 February 2024. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>GKB has given the following feedback:</p> <p>(1) They should be informed as soon as possible following an unplanned event.</p> <p>(2) They should be kept up to date with activity on this EP.</p> <p>(2) They will make Woodside aware of any matters that affect GKB arising from the activity.</p> <p>(3) They currently have no further matters to relate to Woodside about this activity.</p>	<p>(1) In line with the Oil Pollution First Strike Plan, in the highly unlikely event a hydrocarbon release was to impact GKB's area of interest, Woodside would contact GKB.</p> <p>(2) Woodside will keep GKB informed about progress on the activity.</p> <p>(3) Woodside accepts the feedback from GKB.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with GKB (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to GKB will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be</p>	<p>(1) The Oil Spill Response First Strike Plan (Appendix I) includes a requirement to notify Traditional Owners who may be affected by a spill.</p> <p>(2) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with GKB as part of ongoing engagement (Section 7.10 of the EP).</p> <p>(3) Existing controls considered sufficient, as described in Section 6 and 7.</p>

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	<p>received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Karri Karrak Aboriginal Corporation (KKAC)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with KKAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on KKAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to KKAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that KKAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to KKAC over 4 months, demonstrating a “reasonable period” of consultation.
- Woodside asked KKAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on KKAC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 11 October 2023, Woodside emailed KKAC advising of the proposed activity (Record of Consultation, reference 1.89) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that KKAC and its members may have within the EMBA, information on how KKAC would like to engage, and requested that KKAC provide information to other individuals as required.
- On 12 October 2023, KKAC emailed Woodside noting they would call to discuss arrangements for feedback.
- On 14 October 2023, KKAC telephoned Woodside inviting them to attend a meeting with the KKAC Cultural Advice Committee on 18 October 2023.
- On 18 October 2023, Woodside met with the KKAC Cultural Advice Committee comprised of senior knowledge holders, Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs.
 - Displayed a map of activities open for feedback to be discussed in the meeting and provided a list of other upcoming activities open for consultation.
 - Woodside provided an overview of this activity.
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks are not expected to occur and are unlikely.
 - Displayed and spoke to the EMBA and how they are developed.
 - Stated that Woodside wanted to understand how the functions, activities, or interests of KKAC and the people it represents may be impacted by any of those activities.
 - Specifically asked the following:
 - How could these activities impact your cultural values, interests, and activities - does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - KKAC said:

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- **(1)** They expected to be kept informed about the activities.
- **(2)** That Woodside should advise KKAC in the case of an unplanned event arising from the activities.
- **(3)** That KKAC would prefer their rangers to be prepared for, and included, in a response to an unplanned event within the area of their Indigenous Land Use Agreement.
- Woodside advised that they take feedback from KKAC for the life of the EP.
- On 26 October 2023, Woodside emailed KKAC following up on the meeting of 18 October, confirming outcomes and seeking to understand if KKAC would like to meet further.
- On 29 October 2023, KKAC emailed Woodside acknowledging receipt of the meeting overview and indicating that an invoice would be sent shortly.
- On 2 February 2024, Woodside emailed KKAC informing them the opportunity for consultation closes on 23 February 2024. Woodside also attached links to NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. Woodside noted they would keep KKAC informed of progress on this activity, they noted that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>In a face-to-face meeting, KKAC requested that:</p> <ul style="list-style-type: none"> – (1) Woodside keeps KKAC informed of progress on the activity. – (2) Woodside as soon as reasonably practical advises KKAC in the case of an unplanned event arising from the activities. – (3) Their rangers be prepared for, and included, in a response to an unplanned event within the area of their Indigenous Land Use Agreement. 	<p>(1) Woodside has undertaken to keep KKAC informed about progress on the activity.</p> <p>(2) In line with the Oil Pollution First Strike Plan, in the highly unlikely event a hydrocarbon release was to impact KKAC’s area of interest, Woodside will contact KKAC.</p> <p>(3) Woodside will continue to discuss ranger programs in line with Woodside’s Program for Ongoing Engagement.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with KKAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to KKAC will be for the purpose of ongoing engagement.</p>	<p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with KKAC as part of ongoing engagement (Section 7.10 of the EP).</p> <p>(2) The Oil Spill Response First Strike Plan (Appendix I) includes a requirement to notify Traditional Owners who may be affected by a spill.</p> <p>(3) Woodside is implementing a program to actively support Traditional Custodians’ capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians (Appendix G).</p>

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Wagyl Kaip Southern Noongar Aboriginal Corporation (Wagyl Kaip)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Wagyl Kaip for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Wagyl Kaip’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Wagyl Kaip. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan.
- Advised that Wagyl Kaip can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Woodside has addressed and responded to Wagyl Kaip over 4 months, demonstrating a “reasonable period” of consultation.
- Woodside asked Wagyl Kaip if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Wagyl Kaip functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 31 October 2023, Woodside emailed Wagyl Kaip advising of the proposed activity (Record of Consultation, reference 1.90) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Wagyl Kaip and its members may have within the EMBA, information on how Wagyl Kaip would like to engage, and requested that Wagyl Kaip provide information to other individuals as required.
- On 7 November 2023, Woodside emailed Wagyl Kaip following up on the 31 October 2023 email, offering to meet and asking whether any further information was required and whether there were any other individuals or groups that Woodside should consult with. No response was received.
- On 22 December 2023, Woodside phoned Wagyl Kaip and left a message asking for a return call.
- On 22 December 2023, Woodside sent a follow up email requesting the opportunity to meet and answer any questions regarding the EP that Wagyl Kaip may have.
- **(1)** On 8 January 2024, Wagyl Kaip emailed Woodside advising the EP will have no effect on Wagyl Kaip Aboriginal Corporation heritage or cultural values.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Wagyl Kaip has provided feedback stating the proposed activity will have no effect on Wagyl Kaip Aboriginal Corporation heritage or cultural values.</p>	<p>(1) Woodside accepts that Wagyl Kaip’s feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Wagyl Kaip (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to Wagyl Kaip will be for the purpose of ongoing engagement.</p>	<p>(1) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Wagyl Kaip as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Whadjuk Aboriginal Corporation

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Whadjuk AC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

- **Sufficient Information:**
 - Woodside sought direction on Whadjuk AC preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
 - Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Whadjuk AC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
 - Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
 - Articulated planned and unplanned environmental risks and impacts, with proposed controls.
 - Asked for the consultation and information sheets to be distributed to members and individuals as required.
 - Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans”
 - Advised that Whadjuk AC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

- **Reasonable Period:**
 - Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
 - Woodside has addressed and responded to Whadjuk AC over 5 months, demonstrating a “reasonable period” of consultation.
 - Woodside asked Whadjuk AC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Whadjuk AC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 9 October 2023, Woodside telephoned Whadjuk AC advising them that Woodside would be sending consultation information regarding this EP, requesting that they review the information and respond with any feedback.
- On 9 October 2023, Woodside emailed Whadjuk AC advising of the proposed activity (Record of Consultation, reference 1.91) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Whadjuk AC and its members may have within the EMBA, information on how Whadjuk AC would like to engage, and requested that Whadjuk AC provide information to other individuals as required.
- On 7 November 2023, Woodside emailed Whadjuk AC requesting any feedback regarding this activity and offering to meet with Whadjuk. No response was received.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Whadjuk has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023, despite follow-up.</p>	<p>Woodside accepts that Whadjuk has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Whadjuk (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to Whadjuk will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Whadjuk as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
<p>Yued Aboriginal Corporation (Yued)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Yued Aboriginal Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Sufficient Information: <ul style="list-style-type: none"> • Woodside sought direction on Yued’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation. • Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to Yued. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Confirmed the purpose of consultation and set out in detail what is being sought through consultation. • Articulated planned and unplanned environmental risks and impacts, with proposed controls. • Asked for the consultation and information sheets to be distributed to members and individuals as required. • Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan. • Advised that Yued can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Woodside has addressed and responded to Yued over 5 months, demonstrating a “reasonable period” of consultation. • Woodside asked Yued if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified. 		

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Yued functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 6 October 2023, Woodside met with Yued regarding other matters and advised Yued that Woodside would be sending Yued consultation information for this Environment Plan. Yued noted they had previously been consulted regarding another Woodside EP.
- On 9 October 2023, Woodside emailed Yued advising of the proposed activity (Record of Consultation, reference 1.92) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Yued and its members may have within the EMBA, information on how Yued would like to engage, and requested that Yued provide information to other individuals as required.
- On 13 October 2023, Yued responded requesting maps overlaying the extent of oil spill modelling and the Yued ILUA area.
- On 18 October 2023, Woodside emailed Yued providing the requested map and offering to meet or answer any questions.
- On 8 November 2023, Woodside emailed Yued offering the opportunity for feedback.
- **(1)** On 9 November 2023, Yued emailed Woodside advising that at present they had no feedback, and there did not appear to be any adverse impacts in the Yued area. Yued advised that they would endeavour to contact Woodside after their election cycle.
- On 10 November 2023, Woodside emailed Yued thanking them for the response and advising Woodside would take feedback at any time as part of Woodside’s approach to ongoing consultation.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Yued advised that they have no feedback on this activity, and they would endeavour to contact Woodside after their election cycle.</p>	<p>(1) Woodside accepts that Yued has no feedback on the activity at this time. Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Yued (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement</p>	<p>(1) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Yued as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>with and support offered to Yued will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang (MG Corp)

MG Corp is established under the Native Title Act 1993 by the Miriuwung and Gajerrong people to represent the Miriuwung and Gajerrong people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with MG Corp for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on MG Corp’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to MG Corp. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that MG Corp can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).

- Woodside commenced consultation with MG Corp in October 2023. Woodside has addressed and responded to MG Corp over 5 months, demonstrating a “reasonable” period of consultation.

Woodside asked MG Corp if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on MG Corp’s functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed MG Corp NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that MG Corp advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 15 September 2023, Woodside emailed MG Corp an agenda and presentation in advance of a meeting planned for 18 September to discuss unrelated activities as well as this activity.
- On 18 September 2023, Woodside met with the MG Corp Chair and Directors and presented on this activity along with others. Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA’s role as regulator and general contents of EPs.
 - Displayed a map of the EMBA and discussed how the EMBA is developed.
 - Gave an overview of the activity.
 - Specifically, Woodside asked the following:
 - How could these activities impact your cultural values, interests, and activities - does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - MG Corp noted:

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<ul style="list-style-type: none"> ▪ (1) That native title exists on Lacrosse Island and is closer to shore in relation to impacts from this activity. ▪ (2) There are registered sites on Lacrosse Island to be aware of. ▪ (3) That Balanggarra should be involved in future discussions. Woodside said that they had made attempts to contact Balanggarra. <ul style="list-style-type: none"> • On 13 October 2023, Woodside emailed MG Corp advising of the proposed activity (Record of Consultation, reference 1.114) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that MG Corp and its members may have within the EMBA, information on how MG Corp would like to engage, and requested that MG Corp provide information to other individuals as required. • On 1 November 2023, Woodside emailed MG Corp following up on the activity summary sheets and asking if there was any feedback or further information required. No response was received. • On 25 January 2024, Woodside phoned MG Corp and was advised to send an email. Woodside emailed MG Corp following up on this activity, re-attaching the Summary Information sheet sent in October 2023, and offering to provide further information if required. Woodside stated they would submit this EP to NOPSEMA in February 2024, re-iterating feedback from MG Corp is open for the life of the EP.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>During face-to-face engagement related to this activity and others MG Corp noted the following related to this proposed activity:</p> <p>(1) Native title exists on Lacrosse Island and is closer to shore in terms of impacts.</p> <p>(2) There are registered sites on Lacrosse Island.</p> <p>(3) Balanggarra should be involved in future discussions.</p> <p>MG Corp has not provided further feedback or objections since consultation information sheets were sent in October 2023, despite follow-up.</p>	<p>(1, 2, 3) Woodside responded to questions and feedback on the activity in a face-to-face meeting, including advising that Woodside had attempted to contact Balanggarra.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with MG Corp (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to MG Corp will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it</p>	<p>(1, 2, 3) Existing controls considered sufficient, as described in Section 6 and 7</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with MG Corp as part of ongoing engagement (Section 7.10 of the EP).</p>

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	will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	
<p>Mirning Traditional Lands Aboriginal Corporation RNTBC (MTLAC) MTLAC is established under the Native Title Act 1993 by the Mirning people to represent the Mirning people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with MTLAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Woodside sought direction on MTLAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation. • Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to MTLAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Confirmed the purpose of consultation and set out in detail what is being sought through consultation. • Articulated planned and unplanned environmental risks and impacts, with proposed controls. • Asked for the consultation and information sheets to be distributed to members and individuals as required. • Provided links to NOPSEMA’s Guideline “Guideline: Consultation in the course of preparing an environment plan. • Advised that MTLAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Woodside has addressed and responded to MTLAC over 5 months, demonstrating a “reasonable period” of consultation. • Woodside asked MTLAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified. 		

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on MTLAC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 4 October 2023, Woodside emailed MTLAC advising of the proposed activity (Record of Consultation, reference 1.95) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that MTLAC and its members may have within the EMBA, information on how MTLAC would like to engage, and requested that MTLAC provide information to other individuals as required.
- On 24 October 2023, Woodside emailed MTLAC following up on the activity. No response was received.
- On 8 December, Woodside sent a follow up email offering to answer any questions relating to the proposed EP's. Woodside advised of their availability to schedule a consultation session.
- On 19 December 2023, Woodside emailed MTLAC thanking them for their contributions throughout the year and offering opportunity for consultation regarding Woodside projects.
- On 9 January 2024, Woodside emailed MTLAC following up on previous correspondence and offering the opportunity to meet via MTLAC's preferred method of consultation.
- On 9 January 2024, MTLAC emailed Woodside advising acceptance of a meeting, enquiring the purpose of the meeting and requesting a date suitable to Woodside.
- On 10 January 2024, Woodside emailed MTLAC informing them of the aim of the meeting and advising a calendar invite would be sent out later that day.
- **(1)** On 22 January 2024, Woodside met with MTLAC, Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs.
 - Displayed a map of the EMBA and discussed how the EMBA is developed.
 - Gave an overview of the activity including that woodside will continue to produce crude oil.
 - Spoke about routine inspections, monitoring maintenance and repairs associated with the subsea infrastructure.
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks are not expected to occur and are unlikely.
 - Specifically, Woodside asked the following:

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<ul style="list-style-type: none"> ▪ How could these activities impact your cultural values, interests, and activities - does protecting the environment do enough to protect your cultural values? ▪ What are your concerns about the proposed activities and what do you think we should do about them? ▪ Is there anything you would like included in the EPs before submission? ▪ Is there anyone else Woodside should consult with about the activities? <ul style="list-style-type: none"> - Advised that Woodside will continue to take feedback from MTLAC for the life of the EP. - Discussed ranger programs and initiatives that Woodside has partnered on. - MTLAC noted: <ul style="list-style-type: none"> ▪ (1) That due to the location of the activity it was unlikely that Mirning country would be impacted. - Discussion on cultural heritage and sea country mapping took place and Woodside noted that there would be an opportunity to talk further on sea country mapping. <ul style="list-style-type: none"> • On 31 January 2024, Woodside emailed MTLAC thanking them for the meeting that occurred on 22 January 2024. Woodside noted that it was unclear if they would need to consult with MTLAC on future environment plans and attached Woodside’s program of ongoing consultation.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) During face-to-face engagement on this activity, MTLAC noted that due to the location of the activity it was unlikely that Mirning country would be impacted.</p>	<p>(1) Woodside accepts that MTLAC’s feedback that due to the location of the activity it was unlikely Mirning country would be impacted.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with MTLAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to MTLAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including</p>	<p>(1) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with MTLAC as part of ongoing engagement (Section 7.10 of the EP).</p>

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	<p>any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
<p>Kunin (Native Title) Aboriginal Corporation (Kunin) Kunin (Native Title) Aboriginal Corporation is established under the Native Title Act 1993 by the Yawuru people to represent the Djugan and Yawuru people in the northern Yawuru claim area known as Kunin (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Kunin for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Woodside sought direction on Kunin preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation. • Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to Kunin. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Articulated planned and unplanned environmental risks and impacts, with proposed controls. • Confirmed the purpose of consultation and set out in detail what was being sought through consultation. • Asked for the consultation and information sheets to be distributed to members and individuals as required. • Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”. • Advised that Kunin can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023). 		

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- Woodside commenced consultation with Kunin in October 2023. Woodside has addressed and responded to Kunin over 5 months, demonstrating a “reasonable” period of consultation.
- Woodside asked Kunin if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Kunin’s functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed Kunin (via Yawuru AC) NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that Yawuru advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 19 October 2023, Woodside emailed Kunin (via Yawuru AC) advising of the proposed activity (Record of Consultation, reference 1.93) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Kunin and its members may have within the EMBA, information on how Kunin would like to engage, and requested that Kunin provide information to other individuals as required.
- Kunin members are fully represented within Yawuru.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
Kunin/Yawuru AC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.	Woodside accepts that Kunin/Yawuru AC has no feedback on the activity. Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Kunin/Yawuru AC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to Kunin/Yawuru AC will be for the purpose of ongoing engagement.	Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Kunin/Yawuru AC as part of ongoing engagement (Section 7.10 of the EP).

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	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Wilinggin Aboriginal Corporation (Wilinggin)

Wilinggin Aboriginal Corporation is established under the Native Title Act 1993 by the Ngarinyin people to represent the Ngarinyin people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Wirrawandi Aboriginal Corporation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on Wilinggin’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to Wilinggin. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that Wilinggin can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).

- Woodside commenced consultation with Wilinggin in October 2023. Woodside has addressed and responded to Wilinggin over 5 months, demonstrating a “reasonable” period of consultation.

Woodside asked Wilinggin if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on Wilinggin’s functions, interests or activities.

Historical engagement:

- On 18 July 2023, Woodside emailed KLC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that KLC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

- On 13 October 2023, Woodside emailed Wilinggin advising of the proposed activity (Record of Consultation, reference 1.94) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that Wilinggin and its members may have within the EMBA, information on how Wilinggin would like to engage, and requested that Wilinggin provide information to other individuals as required.
- On 25 October 2023, Woodside emailed KLC introducing themselves and querying the best point of contact for Wilinggin (along with some other PBC’s).
- On 30 October 2023, KLC responded to Woodside’s email advising Woodside of the appropriate contact details for Wilinggin.
- On 2 November 2023, Woodside emailed KLC thanking them for providing the best contact details in their email on 30 October 2023 and explained how Woodside had tried all available contacts provided to them by KLC. Woodside also stated that they were flexible and will support Wilinggin’s preferred method of consultation (dates and locations).
- On 2 November 2023, KLC emailed Woodside confirming email receipts and affirmed that they would pass onto relevant persons.
- On 2 November 2023, Woodside emailed Wilinggin introducing themselves and enquiring the best point of contact. Woodside also queried if there was availability for a meeting or if any follow up information was required for this activity.
- On 16 November 2023, Woodside sent a follow up email to Wilinggin enquiring the best contact to reach the Chief Executive Officer for the Wilinggin Aboriginal Corporation. Woodside also offered the opportunity to meet and discuss Woodside activities with the Wilinggin Aboriginal Corporation.

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- On 24 November 2023, Woodside emailed Wilinggin requesting the opportunity to meet and answer any questions relating to the EP. Woodside again provided the Summary Information Sheets that were originally sent in October 2023 and asked whether Wilinggin had any feedback on the activity, noting that consultation was open for the life of the EP.
- On 23 January 2024, Woodside emailed Wilinggin to inform Wilinggin that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with Wilinggin at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Wilinggin has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in February 2023. KLC has acknowledged receipt of emails.</p>	<p>Woodside accepts that Wilinggin has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with Wilinggin (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to MCG will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with Wilinggin as part of ongoing engagement (Section 7.10 of the EP).</p>

Wunambal Gaambera Aboriginal Corporation (WGAC)

WGAC is established under the Native Title Act 1993 by the Wunambal Gaambera people to represent the Wunambal Gaambera people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with WGAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

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Sufficient Information:

- Woodside sought direction on WGAC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to WGAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan”.
- Advised that WGAC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with WGAC in October 2023. Woodside has addressed and responded to WGAC over 5 months, demonstrating a “reasonable” period of consultation.

Woodside asked WGAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on WGAC’s functions, interests or activities.

Historical Engagement

- On 18 July 2023, Woodside emailed WGAC/KLC NOPSEMA’s Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside’s request that WGAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

Summary of information provided and record of consultation for this EP:

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- On 2 October 2023, Woodside emailed WGAC advising of the proposed activity (Record of Consultation, reference 1.96) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that WGAC and its members may have within the EMBA, information on how WGAC would like to engage, and requested that WGAC provide information to other individuals as required. On 18 October 2023, Woodside emailed WGAC to identify the best contact details regarding consultation matters.
- On 18 October 2023, Woodside emailed WGAC seeking points of contact for consultation.
- On 18 October 2023, WGAC emailed Woodside with contact details.
- On 18 October 2023, Woodside emailed WGAC seeking to meet with the WGAC Board to provide information and seek feedback on Woodside activities.
- On 15 November 2023, Woodside emailed WGAC following up on previous correspondence and again requesting an opportunity to discuss current activities.
- On 23 November 2023, Woodside emailed WGAC offering a meet and greet to discuss potential funding of future arrangements for meetings and talk through the EP process.
- On 23 January 2024, Woodside emailed to inform WGAC that consultation prior to being submitted to NOPSEMA will close for this EP on 23 February 2024. Woodside offered to meet with WGAC at their preferred place and time. Woodside re-iterated that consultation was ongoing for the life of the plan and Woodside would assess and respond to any feedback and comments received post 23 February 2024.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>WGAC has not provided feedback, objections to date or claims in response to the information provided since consultation commenced in October 2023.</p>	<p>Woodside accepts that WGAC has no feedback on the activity at this time.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing engagement with WGAC (Section 7.10). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with and support offered to WGAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it</p>	<p>Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with WGAC as part of ongoing engagement (Section 7.10 of the EP).</p>

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	will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	
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Daly River Port Keats Aboriginal Land Trust (DRPKALT)

DRPKALT holds land on behalf of the Traditional Owners from each estate in the Thamarrurr Region of the Northern Territory. Under Thamarrurr, all land-owning groups have traditional rights and responsibilities over their land.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DRPKALT for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside Sought direction on DRPKALT’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to DRPKALT. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans”
- Advised that DRPKALT can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with DRPKALT in December 2023. Woodside has addressed and responded to DRPKALT over 2 months, demonstrating a “reasonable” period of consultation.
- Woodside asked DRPKALT if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

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- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on DRPKALT functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 18 December 2023, Woodside emailed DRPKALT via Northern Land Council (NLC) advising of the proposed activity (Record of Consultation, reference 1.110) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that DRPKALT and its members may have within the EMBA, information on how DRPKALT would like to engage, and requested that DRPKALT provide information to other individuals as required.
- On 11 January 2024, Woodside phoned the Thamarrurr Development Corporation seeking to contact DRPKALT.
- On 11 January 2024, Woodside emailed the consultation information (sent on 18 December 2023 via NLC) directly to DRPKALT. Woodside advised it was happy to discuss the EP further on the phone or during a meeting in person while in the Northern Territory.
- On 12 January 2024, Woodside phoned Thamarrurr Development Corporation to follow up on its email however there was no answer.
- **(1)** On 12 January 2024, Woodside phoned the ranger team Manager, who confirmed they were the correct person to speak with regarding EPs. The Manager advised they had looked at the summary sheet for this EP and that they were not concerned as it did not go near DRPKALT Country.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
(1) DRPKALT confirmed it had reviewed the consultation information and did not have concerns due to the location of the activities which is not near their Country.	(1) Woodside accepts DRPKALT has no specific feedback on this activity. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	(1) Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with LAC as part of ongoing engagement (Section 7.10 of the EP).

Larrakia Development Corporation (LDC)

LDC is incorporated under ASIC and is led by the Traditional Owner group of Darwin, the Larrakia people.

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Larrakia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on LDC's preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 consultation.
- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to LDC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that LDC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with LDC in December 2023. Woodside has addressed and responded to LDC over 2 months, demonstrating a "reasonable" period of consultation.
- Woodside asked LDC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on LDC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 15 November 2023, Woodside telephoned Larrakia Nation seeking the appropriate body to consult with. Woodside were directed to LDC.

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- On 17 November 2023, LDC telephoned Woodside providing an email address for contact purposes.
- On 15 December 2023, Woodside emailed LDC advising of the proposed activity (Record of Consultation, reference 1.111) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that LDC and its members may have within the EMBA, information on how LDC would like to engage, and requested that LDC provide information to other individuals as required.
- On 24 January 2024, Woodside phoned LDC to follow up on the consultation material. LDC advised it had no real concerns but would have another look at the summary information sheet.
- **(1)** On 29 January 2024, LDC emailed Woodside to confirm that if the EMBA was as per the map, it was not LDC Country, and therefore activities would not affect LDC unless operations included Darwin and the Greater Darwin Region.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
(1) LDC advised that based on the location of EMBA, the proposed activities would not affect Larrakia.	(1) Woodside noted that the EMBA did not reach LDC Country and therefore they had no concerns. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	(1) Not required. Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with LDC as part of ongoing engagement (Section 7.10 of the EP).

Top End (Default) Aboriginal Corporation (TE(D)AC)

TE(D)AC is established under the Native Title Act 1993 by a large number of determinations to represent the Bardi people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values. For more information of the groups search the National Native Title Tribunal Register. (<http://www.nntt.gov.au/searchRegApps/NativeTitleRegisters/Pages/Search-National-Native-Title-Register.aspx>)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with TE(D)AC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on TE(D)AC’s preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post-regulation 25 consultation.

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- Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to TE(D)AC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Confirmed the purpose of consultation and set out in detail what is being sought through consultation.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.
- Asked for the consultation and information sheets to be distributed to members and individuals as required.
- Provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing an environment plan.
- Advised that TE(D)AC can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).
- Woodside commenced consultation with TE(D)AC in December 2023, providing TE(D)AC with the opportunity to provide feedback over a 2-month period.
- Woodside asked TE(D)AC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by Regulation 25(1), throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on TE(D)AC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 25 October 2023, Woodside emailed TE(D)AC via NLC requesting an opportunity to meet, as Woodside was travelling to the Northern Territory.
- Between 12- 29 November 2023, Woodside and TE(D)AC via NLC exchanged emails in an attempt to schedule a meeting that would work best for both parties.
- On 18 December 2023, Woodside emailed TE(D)AC via NLC advising of the proposed activity (Record of Consultation, reference 1.112) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that TE(D)AC and its members may have within the EMBA, information on how TE(D)AC would like to engage and requested that TE(D)AC provide information to other individuals as required.

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- On 17 January 2024, Woodside emailed TE(D)AC via NLC advising of the extended response time. Woodside re-iterated that comments can be made throughout the life of the environment plan. Woodside offered to pay reasonable consultation fees to EMBA relevant Aboriginal Corporations.
- On 18 January 2024, TE(D)AC via NLC emailed Woodside confirming receipt of the email and advising they will be in touch soon. No response has been received.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or concerns to date in response to the information provided since consultation commenced in December 2023.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with TE(D)AC as part of ongoing engagement (Section 7.10 of the EP).

Native Title Representative Bodies

Yamatji Marlpa Aboriginal Corporation (YMAC)

YMAC is the Native Title Representative Body for the Yamatji and Pilbara regions of Western Australia. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with YMAC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. YMAC has indicated that it will not provide substantive comment on EPs:

Sufficient Information:

- Woodside sought direction on YMAC’s preferred method of consultation. This resulted in meetings being coordinated at location of YMAC’s choosing, with YMAC nominated representatives. These meetings included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to YMAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls.

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo,

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Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023).

- Woodside commenced consultation with YMAC in August 2023. Woodside has addressed and responded to YMAC over 5 months, demonstrating a “reasonable period” of consultation.

Woodside asked YMAC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on YMAC functions, interests or activities.

Historical engagement:

- On 13 March 2023, Woodside emailed YMAC as to whether YMAC considers itself a ‘relevant person’ under regulation 25 of the Environment Regulations for the purposes of consultation on EPs and, if so, whether that relevance is limited to a facilitation function in its capacity as a representative of Traditional Owner groups/corporations that overlap or adjacent to the environment that may be affected (EMBA) of a particular activity.
- On 15 March 2023, Woodside emailed YMAC to request a response as to whether YMAC considers itself a ‘relevant person’ under relevant sections of the Environment Regulations for the purposes of consultation in EPs.
- **(1)** On 20 March 2023, YMAC replied to confirm that in its view it is a ‘relevant person’ under regulation 25(1) of the Environment Regulations for the purposes of consultation on EPs only in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation. YMAC does not intend to provide substantive comment on the content of EPs.
- On 20 March 2023, Woodside emailed YMAC to thank it for its reply and to advise that that this assessment would be included in Woodside’s EPs.
- On 20 March 2023, YMAC emailed Woodside confirming that they agree to their advice being included in reporting (YMAC is the representative for NTGAC and Nanda Aboriginal Corporation and was the representative for Yinggarda Aboriginal Corporation until April 2023).
- **(2)** On 12 June 2023, YMAC emailed Woodside on behalf of itself and its clients. The email attached:
 - A proposal to fund in-house expertise to support consultations and administration of the consultation framework.
 - A draft consultation framework.
- On 12 June 2023, Woodside emailed YMAC, thanking them for the documents and informing them that Woodside would respond shortly.
- On 25 July 2023, Woodside emailed YMAC:
 - Agreeing in principle to the draft consultation framework and funding proposal but seeking further discussion on details.
 - Stating that Woodside is open to considering an industry funded position at YMAC to support the work they are facilitating.
 - Attaching Woodside’s Program for Ongoing Engagement with Traditional Custodians.

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- Seeking a meeting with YMAC in relation to the draft consultation framework at YMAC's earliest convenience.

Summary of information provided and record of consultation for this EP:

- On 23 October 2023, Woodside emailed YMAC advising of the proposed activity (Record of Consultation, reference 1.109) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website). The email requested information on the interests that YMAC and its members may have within the EMBA, information on how YMAC would like to engage, and requested that YMAC provide information to other individuals as required.
- On 13 November 2023, Woodside emailed YMAC noting that the previous email had included the Consultation Information Sheet, not the Summary Information Sheet. Woodside attached a copy of the Summary Information Sheet.
- On 14 December 2023, Woodside emailed YMAC re-attaching the Program of Ongoing Consultation and advising that Woodside would like to progress negotiations on consultation frameworks with groups represented by YMAC. Woodside proposed the protocol would include (among other things):
 - The procedures Woodside will follow when a submission requires consultation.
 - Initial and ongoing consultation in relation to activities.
 - Agreement as to how Woodside will provide the information groups requires to make free, prior and informed decisions about Woodside's EPs.
 - Agreement as to how groups will provide feedback and how that can best be represented in EPs.
 - An agreed schedule of rates for groups participation in consultation.
 - How to manage the outputs of the consultations.
- On 21 December 2023, Woodside emailed YMAC providing a list of upcoming activities as requested by YMAC.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) YMAC has provided feedback that in its view it is a 'relevant person' under regulation 25(1) of the Environment Regulations for the purposes of consultation on EPs only in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation and does not intend to provide substantive comment on the content of EPs.</p> <p>(2) YMAC has provided feedback that it is seeking an industry funded position to support consultations for this and other activities. YMAC has provided a</p>	<p>(1) Woodside accepts YMAC's feedback that it is a relevant person only in relation to its facilitation and coordination function as a representative body. Woodside has consulted with YMAC in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation, and it has responded that it does not intend to provide substantive comment on the content of EPs.</p> <p>(2) Woodside has assessed the Program of Ongoing Engagement with Traditional Custodians will support ongoing consultation with YMAC and/or the groups it represents. This can address appropriate support for</p>	<p>(1) Not required.</p> <p>(2) Woodside will continue to engage with YMAC in relation to its request for an industry funded position and has put a proposal to YMAC in December 2023 for a Framework Agreement. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix G).</p>

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Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on KLC functions, interests or activities.

Historical engagement:

- **(1)** On 16 February 2023, Woodside emailed KLC following a telephone discussion about EP consultations confirming that the KLC don't wish to be consulted on EPs but will facilitate consultation with PBC's that they support.
- **(2)** On 11 May 2023, Woodside spoke with KLC to discuss a workshop for spill response training for rangers that would include other industry members and Traditional Custodian groups. KLC stated they were very interested in this and would test with relevant groups to see availability.
- **(2)** On 23 June 2023, Woodside spoke to KLC at the NOPSEMA Summit. KLC confirmed they were still interested in the ranger workshop but would be unavailable for a couple of weeks.

Summary of information provided and record of consultation for this EP:

- On 19 October 2023, Woodside emailed KLC advising of the proposed activity (Record of Consultation, reference 1.77 and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that KLC and its members may have within the EMBA, information on how KLC would like to engage, and requested that KLC provide information to other individuals as required.
- From 25 October to 2 November 2023, Woodside exchanged email correspondence with KLC wanting to get the best point of contact for Wunjina-Wunggurr AC, Wilinggin AC, Wunambal Gaambera AC and Dambimangari ACs and members for Woodside to provide updates and information regarding upcoming EP's.

Woodside has been engaging with KLC on behalf of its represented groups as described in relevant sections above.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) The KLC has previously stated they do not want to be consulted but will facilitate consultations with relevant PBCs.</p> <p>(2) The KLC has previously stated they are seeking support for regional ranger programs and oil spill response training.</p>	<p>(1) Woodside accepts that KLC has no feedback for this activity. KLC is the Native Title Representative Body for the Kimberley regions of Western Australia. As such, they are not a Prescribed or Registered Native Title Body Corporate representing the cultural rights of a Traditional Custodian Community but exist to assist native title claimants and holders. Woodside has consulted with KLC in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.</p>	<p>(1) Existing controls considered sufficient, as described in Section 6 and 7.</p> <p>(2) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with KLC through ongoing engagement and continue engaging with KLC in relation to its request for a ranger workshop, as described in Section 7.10.</p>

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	<p>The KLC was formed in 1978 by Kimberley Aboriginal people as a political land rights organisation and are now the peak Indigenous body in the Kimberley region working with Aboriginal people to secure native title, conduct conservation and land management activities and develop cultural business enterprises. Woodside has consulted with relevant PBCs, facilitated by KLC.</p> <p>(2) Woodside has an ongoing engagement with KLC to explore models for ranger spill response.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Northern Land Council (NLC)
 NLC is the Native Title Representative Body for the northern region of the Northern Territory – including the Tiwi Islands and Groote Eylandt. As such, they are not a Prescribed or Registered Native Title Body Corporate but exist to assist native title claimants and holders.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NLC for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:

- Sufficient Information:**
- Woodside sought direction on NLC preferred method of consultation. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25(1) consultation.
 - Provided Consultation Information Sheets and Summary Information Sheets developed by Indigenous staff to NLC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
 - Articulated planned and unplanned environmental risks and impacts, with proposed controls.

- Reasonable Period:**
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Woodside has addressed and responded to NLC over 3 months, demonstrating a “reasonable period” of consultation.
- Woodside asked NLC if it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.
- Woodside engages in ongoing consultation, beyond that required by Regulation 25(1), throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).
- Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NLC functions, interests or activities.

Summary of information provided and record of consultation for this EP:

- On 16 August 2023, Woodside and NLC exchanged email correspondence attempting to set up a time and date to meet.
- On 12 September 2023, Woodside and NLC exchanged correspondence planning the best suitable time for both parties to set up a virtual meeting.
- On 13 September 2023, Woodside had a teams meeting with NLC to speak generally about processes for informing relevant corporations through the NLC.
- On 13 September 2023, Woodside emailed NLC thanking them for the advice provided in the meeting earlier that day.
- On 15 November 2023, Woodside phoned NLC and left a message asking for its call to be returned.
- **(1)** On 18 December 2023, Woodside emailed NLC advising of the proposed activity (Record of Consultation, reference 1.113) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside’s website) as well as a summary overview fact sheet. The email requested information on the interests that NLC and its members may have within the EMBA, information on how NLC would like to engage, and requested that NLC provide information to other individuals as required.
- On 17 January 2024, Woodside sent a follow up email to NLC about the proposed activity. Woodside advised NLC that comments can be made over the life of the EP and offered to pay reasonable fees to consult with relevant corporations.
- On 18 January 2024, NLC emailed Woodside confirming receipt of Woodside’s previous email and advising the information provided will be reviewed.
- On 18 January 2024, Woodside emailed NLC thanking them for their response.
- On 6 February 2024, NLC emailed Woodside apologising for the delay in response and provided the best contact moving forward.
- **(1)** On 7 February 2024, Woodside emailed NLC thanking them for their response and reached out to the new contact. No response has been received.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
(1) No feedback, objections or claim received despite follow up in response to the information provided since consultation commenced in December 2023.	(1) Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will	(1) Existing controls considered sufficient, as described in Section 6 and 7. Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will

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	apply its Management of Change and Revision process (see Section 7.1.16).	continue to engage with LAC as part of ongoing engagement (Section 7.10 of the EP).
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Self-identified First Nations Groups
Ngarluma Yindjibarndi Foundation Ltd (NYFL)
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with NYFL for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Sought direction on NYFL’s preferred method of consultation. NYFL requested consultation material suitable for Traditional Custodian audience, which was developed and provided. As sufficient information and a reasonable period have been provided (see below), any meetings would be considered as ongoing engagement post regulation 25 of the Environment Regulations consultation. • Provided Consultation Information Sheet and Consultation Summary Sheets developed by Indigenous staff to NYFL. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Articulated planned and unplanned environmental risks and impacts, with proposed controls. • Confirmed purpose of consultation and set out in detail what is being sought through consultation. • Asked for the consultation and information sheets to be distributed to members and individuals as required. • Provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing an environment plan. • Advised that NYFL can request that particular information provided in the consultation not be published (to align with regulation 25(4) of the Environment Regulations). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Woodside published advertisements in national, state, and relevant local newspapers including, the North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023). • Woodside commenced consultation with NYFL in October 2023. Woodside has responded to NYFL over 5 months, demonstrating a “reasonable period” of consultation.

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- Woodside asked NYFL it was aware of any other Traditional Custodian groups or individuals with whom Woodside should consult. None were identified.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of the EP).

Woodside considers the measures and controls described in this EP address the potential impact from the proposed activity on NYFL functions, interests, or activities.

Historical engagement:

- **(1)** On 29 June 2023, in relation to other activities, NYFL confirmed they considered themselves a 'relevant person' and noted they were looking to agree on the next steps in agreeing appropriate consultation frameworks in relation to oil and gas activities.
- **(2)** On 10 July 2023, in relation to other activities, NYFL stated that they would not consult on any activities as they were waiting for the First Nations Sea Country Summit at which a national framework for consultation between industry and First Nations be resolved before they consulted on Environment Plans. NYFL stated that they did not agree with the facilitators record of the NOPSEMA Summit, particularly that there would be parallel ongoing consultation in relation to current EPs prior to the proposed National Summit of Indigenous Groups and Traditional Owners. The national Summit took place in November 2023.
- On 19 July 2023, Woodside emailed NYFL NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that NYFL advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult. No response was received to this email.
- On 26 July 2023, Woodside emailed NYFL Woodside's planned Program of Ongoing Engagement with Traditional Custodians.
- **(3)** On 26 July 2023, NYFL emailed Woodside in response to Woodside's planned Program of Ongoing Engagement with Traditional Custodians, noting it was a good start particularly with the inclusion of Traditional Owner feedback and indicating that assistance with resourcing and internal capacity would be required. NYFL noted their expectations about resourcing as a relevant person.

Summary of information provided and record of consultation for this EP:

- On 19 October 2023, Woodside emailed NYFL regarding the proposed activity (Record of Consultation, reference 1.71) and provided a simplified Consultation Information Sheet (including a link to the detailed information sheet on Woodside's website) as well as a summary overview fact sheet. The email requested information on the interests that NYFL and its members may have within the EMBA, information on how NYFL would like to engage, and requested that NYFL provide information to other individuals as required.
- **(4)** On 27 October 2023, NYFL provided NYFL's position statement regarding industry consultation which was a change of position from its advice on 29 June 2023. NYFL noted that it expects an updated proposal regarding consultation to be provided by Woodside. NYFL advised that it does not have the capacity to respond adequately to EPs or other consultation material sent by proponents nor did it feel the process results in a fair representation of Traditional Owner interests.
- On 3 November 2023, Woodside responded to NYFL stating that Woodside would respond regarding the concerns raised on in the 27 October email. Woodside offered to meet to discuss short term solutions.

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- On 7 November 2023, Woodside emailed NYFL offering to meet to discuss the issues raised, after the National Sea Country Summit taking place on 6-8 November. Woodside offered to meet the week of 20th November.
- **(4)** On 19 November 2023, NYFL emailed Woodside, stating that they were awaiting an updated consultation framework from Woodside and were not able to meet as they didn't have resources to apply to developing a framework but looked forward to providing feedback on an updated framework.
- On 20 November 2023, Woodside emailed NYFL acknowledging their email of 19 November 2023.
- On 4 December 2023, Woodside emailed NYFL:
 - seeking clarification about changes in recent correspondence, noting that NYFL had indicated on several occasions over a number of months that they wished to await outcomes of the First Nations Sea Country Summit in Darwin and would be involved in the development of the National First Nations Led Framework on consultation.
 - Woodside indicated that they had requested to meet face to face with NYFL in November as Woodside wanted to understand NYFL's expectations and discuss the outcomes of the Summit.
 - Woodside also wanted to discuss the strategic sponsorship funding request noting they required a business case to understand what NYFL was suggesting and how it would align with NYFL's strategic objectives.
- On 6 December 2023, NYFL emailed Woodside noting that:
 - At the meeting of 30 August 2023 there was discussion about challenges and proposed solutions to progress EP consultation.
 - **(4)** NYFL operate in a resource-constrained environment.
 - A proposal to NYFL responding to issues raised at the above meeting was expected.
 - **(2)** The Summit had been referred to as a potential useful resource for developing an updated framework.
 - **(3)** NYFL had agreed to progress the Program of Ongoing Engagement with Traditional Custodians.
 - Social investment and capacity building funding should remain separate to consultation regarding EPs and other environment and heritage matters.
- On 14 December 2023, Woodside emailed NYFL, following up on previous emails about consultation on EPs, acknowledging NYFL's resource constraints and limitations that can be allocated to consultation on the EPs. Woodside proposed/noted the following to support consultation activities that would provide NYFL with the ability to engage and provide input and feedback:
 - Woodside intends engaging a senior Ngarluma person in an advisory/liason capacity, which will include facilitating consultation with NYFL members in relation to EPs.
 - A consultation framework on EPs which includes:
 - Agreement between Woodside and NYFL to consult in a meaningful and genuine manner.
 - The procedures Woodside will follow when a submission requires consultation.
 - Initial and ongoing consultation in relation to relevant Woodside EPs and the senior Ngarluma person's role in facilitating those consultations.

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- Agreement as to how Woodside will provide NYFL with the information NYFL requires to make free, prior and informed decisions about Woodside's EPs.
 - Agreement as to how NYFL will provide feedback and how that can best represent NYFL's feedback to NOPSEMA or other relevant organisations.
 - An agreed schedule of rates for NYFL's participation in consultation regarding Woodside's EPs.
 - How to manage the outputs of consultation.
 - Agreement on an approach to minimise duplication of consultation activities conducted with NAC, Yindjibarndi and NYFL.
- An EP Consultation Working Group with representation from Woodside and NYFL.
 - Suggested further discussion on the proposal at the NYFL/Woodside Quarterly meeting on 19 December 2023.

NYFL is also consulted through its membership on the Karratha Community Liaison Group (KCLG) and the Quarterly Heritage Group.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) NYFL self-identified and advised Woodside they are a relevant person for activities.</p> <p>(2) NYFL wished to pause consultation on activities until after the First Nations National Summit was held and a framework for consultation developed. NYFL noted they were working with First Nations Organisations and representative Bodies to develop a framework for consultation. This has not yet been proposed to Woodside. The summit took place in Darwin in November 2023.</p> <p>(3) NYFL have noted they operate in a restrained resource environment.</p> <p>(4) NYFL have acknowledged they support an agreement to enable a process of consultation. They have previously indicated they were working with other organisations to develop a consultation framework, more recently they have indicated they are waiting on Woodside to put forward a proposal.</p>	<p>(1) Woodside has responded to NYFL's self-identification and consulted with them as a relevant person. NYFL was created to act as Trustee for the Northwest Shelf Agreement 1998. NYFL's membership is made up of Ngarluma people and Yindjibarndi people, membership is not open to any person who is not accepted as Ngarluma or Yindjibarndi. Woodside has also consulted with Ngarluma and Yindjibarndi Aboriginal Corporations individually. Ngarluma and Yindjibarndi Aboriginal Corporations were appointed by the Federal Court, at the request of the Ngarluma and Yindjibarndi common law native title holders as PBCs to represent the communal interests of the Ngarluma and Yindjibarndi people respectively. Ngarluma and Yindjibarndi Aboriginal Corporations are representative of all Ngarluma and Yindjibarndi people regardless of membership.</p> <p>(2) Woodside did not consider the proposal that consultation be paused until the proposed First Nations National Summit was reasonable. Woodside continued to offer to meet to progress discussions with NYFL, a meeting was held on 30 August 2023 and further meetings were proposed by Woodside over the following months during September to December but were not taken up. Separate from</p>	<p>(1) NYFL has been consulted with in accordance with the methodology described in Section 5 of the EP.</p> <p>(2) Not required.</p> <p>(3) The proposed Framework Agreement will address appropriate NYFL resourcing.</p> <p>(4) Woodside is implementing a program to actively support Traditional Custodians' capacity for ongoing engagement and consultation on environment plans. This is described further in the Program of Ongoing Engagement with Traditional Custodians, (Appendix G). This includes continued engagement regarding the proposed Framework Agreement which would be applied to ongoing consultation for this activity.</p>

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	<p>consultation under regulation 25 of the Environment Regulations, Woodside is open to engaging with a joint First Nations framework for consultation, however, notes that this is not required to undertake and/or complete consultation while preparing this EP. The framework could be used to frame ongoing consultation. Sufficient information to allow informed assessment has already been provided by other means, including summary sheets developed by Indigenous staff. Woodside has an existing engagement framework in place with NYFL via the Quarterly Heritage Group which enables regular communication about Woodside activities.</p> <p>(3) Woodside assesses that the proposed Framework Agreement would be an effective mechanism to address resourcing for ongoing consultation. Woodside supports reasonable requests for resourcing.</p> <p>(4) NYFL had on several occasions informed Woodside they were working with other organisations to develop a consultation framework which would inform both Traditional Owners and Industry. Recently NYFL indicated that they are waiting on Woodside to put forward a proposal. Woodside have put the framework of a proposal to NYFL and expect discussions with NYFL to settle the proposal in early 2024.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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Local government and community representative groups or organisations

Shire of Exmouth

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Exmouth for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Exmouth on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Exmouth with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed Shire of Exmouth advising of the proposed activity (Record of Consultation, reference 1.18) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shire of Exmouth following up on the proposed activity (Record of Consultation, reference 2.1).

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Ashburton

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Ashburton for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 13 September 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Ashburton on 15 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to Shire of Ashburton over a 5-month period.

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed Shire of Ashburton advising of the proposed activity (Record of Consultation, reference 1.16) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 2 October 2023, Shire of Ashburton responded thanking Woodside for its correspondence and noting its support of the significant contribution the oil and gas sector makes to the community. The Shire asked for consideration of the following comments:
 - **(1)** The Shire confirmed it had no objections to the proposed activities.
 - **(2)** The Shire expects that Woodside will identify, manage and mitigate all possible impacts and risks in line with relevant regulatory frameworks.
 - **(3)** The Aboriginal Cultural Heritage Inquiry System (ACHIS) should be consulted to ensure site of significance are not impacted without consents.
 - **(4)** The Shire requires Woodside to brief the Shire's Local and District Emergency Management Committee's on its planned responses to such events before any activities commence.
 - **(5)** Asks that Woodside has communicated with appropriate emergency management agencies at either/or National, State, District and Local levels on potential hazards and risks around the activity; collaboration and/or cooperation on risk mitigation; considered impacted areas response capacity and capability and sustainability of response activities and escalation triggers.
 - **(6)** The Shire anticipates that Woodside has undertaken their own emergency management planning to mitigate risk and recover from a risk related incident, has engaged with external emergency management agencies to ensure emergency management plans are aligned with outcomes to respond and/or recovery from the incident.
 - **(7)** The Shire anticipates that Woodside has engaged with the community regarding what may happen in areas that are affected by the proposed activities.
 - The Shire proposes that Woodside consider the Shire-operated Pilbara Regional Waste Management Facility (PRWMF) for its decommissioning, recycling and waste disposal purposes.
 - **(8)** The Shire appreciates the opportunity to comment on the proposed activities and requests that Woodside provide the Shire with further updates as the proposal progresses.
- On 6 November 2023, Woodside responded thanking Shire of Ashburton for its feedback and noted:
 - That Woodside is required to manage environmental impacts and risks to the environment that may be affected (EMBA) by its proposed activities to As Low As Reasonably Practicable (ALARP) and to an acceptable level, as required by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Environment Regulations), through the implementation of the EP. Woodside's proposed EPs will be submitted to the National Offshore Petroleum Safety Environmental Management Authority (NOPSEMA) for assessment and acceptance.
 - Woodside routinely utilises the Department of Planning, Land and Heritage Aboriginal Cultural Heritage Inquiry System as part of the EP development process and includes the results of these inquiry system searches as an appendix to each EP.

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- Woodside was looking forward to presenting to the Shire at its Local and District Emergency Management Committee (LEMC) on 21 November 2023 on its approach to managing a hydrocarbon release in the highly unlikely event this occurs. Woodside confirmed it would welcome questions regarding this EP during the presentation. Woodside also sought to clarify the Shire's request to provide a briefing prior to activities commencing as this would potentially mean Woodside is providing frequent briefings on the same issue.
- Woodside has an Oil Pollution First Strike Plan in place for all EPs which details potential impacts, notifications and response mitigations that may be executed to manage an emergency event.
- In the course of developing EPs, Woodside develops oil spill preparedness and response positions tailor for individual projects, and consults with the relevant external emergency management agencies.
- Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 11A (now regulation 25)of the Environment Regulations, and as per Woodside's ongoing consultation approach, feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP.
- Woodside notes the Shire's interest in ongoing local content opportunities and aims to work with local business through employment and contracting opportunities, where practical, to create and building community capacity and capability.
- On 14 November 2023, Shire of Ashburton responded and, regarding Woodside's query seeking clarification on LEMC briefing requirements, confirmed:
 - **(9)** Woodside is not required to give a briefing on its response capability every time it undertakes an activity that has a risk of a hydrocarbon release.
 - **(10)** It is proposed that Woodside, when operating in an area, provides a briefing that covers its program of activities over a period of time, which can be determined by Woodside's own assessment of the need and liaising with the relevant LEMC/DEMC.
 - **(11)** The word briefing should not be confused with advising stakeholders of any assessed high-risk activity where it is appropriate to inform those who may be impacted or involved in a response or recovery process.
- On 21 November 2023, Woodside presented at the Shire of Ashburton LEMC meeting and provided:
 - An overview of proposed activities relevant to the Shire including this EP.
 - An outline of the consultation approach and explanation of the EMBA as a modelling process of the broadest extent a diesel could spread based on a number of conditions.
 - Details of the oil spill response approach in the highly unlikely event of a hydrocarbon spill.
 - Woodside's key steps when activating an oil spill response plan.
 - Shire of Ashburton thanked Woodside for presenting to the committee and no questions or concerns were raised.
- On 22 November 2023, Woodside responded thanking the Shire for its email from 14 November 2023 and confirmed:
 - It noted the Shire's advice that it was not required to provide a briefing on its response capability every time it undertakes an activity that has a risk of a hydrocarbon release.

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<ul style="list-style-type: none"> - It accepted the Shire’s proposal to provide briefings that cover its program of activities over a period of time, as determined by Woodside’s own assessment of need and in liaison with the relevant LEMC. - It will provide notifications to relevant stakeholders if required as per Woodside’s oil spill response arrangements. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) The Shire of Ashburton advised it had no objections to the proposed activity.</p> <p>The Shire also noted a number of expectations around:</p> <p>(2) Identifying, managing and mitigating all possible impacts and risks.</p> <p>(3) Consulting the ACHIS.</p> <p>(4) Briefing the Shire’s Local and District Emergency Management Committee before activities commence.</p> <p>(5) Ensuring Woodside is communicating with appropriate national and state emergency management agencies.</p> <p>(6) Assuming Woodside has emergency management planning in place.</p> <p>(7) Woodside has engaged with the community.</p> <p>(8) Provide updates as activities progress.</p> <p>(9) Amended its advice regarding the timing of briefings to the LEMC.</p> <p>(10) Proposed Woodside give briefings that cover its program of activities over a period of time.</p> <p>(11) Clarified the need for stakeholders to be advised of any assessed high-risk activity.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted the Shire of Ashburton had no objections to the activity.</p> <p>(2) Woodside confirmed it was required to manage environmental impacts and risks to the environment by the proposed activities to As Low As Reasonably Practicable (ALARP), as per the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Environment Regulations).</p> <p>(3) Woodside advised it routinely utilised the Department of Planning, Land and Heritage Aboriginal Cultural Heritage Inquiry System as part of the EP development.</p> <p>(4) Woodside noted it was looking forward to presenting to the Shire of Ashburton’s LEMC meeting on 21 November 2023 regarding its approach to managing a hydrocarbon release in the highly unlikely event this occurred, and would be happy to take questions regarding this EP during the presentation. On 21 November 2023, Woodside presented at the Shire of Ashburton’s LEMC on oil spill responses.</p> <p>(5) Woodside confirmed it had an Oil Pollution First Strike Plan in place for this EP which detailed potential impacts, notifications and response mitigations that may be executed to manage an emergency event.</p> <p>(6) Woodside confirmed that in the course of developing EPs, it developed oil spill preparedness and response positions tailored for individual projects. Woodside consults with the relevant external management agencies to ensure all emergency management plans are aligned with effective outcomes.</p> <p>(7) Woodside advised it consulted relevant persons in the course of preparing an EP, and as per Woodside’s ongoing</p>	<p>(1) Not required.</p> <p>(2) Existing controls considered sufficient as described in Sections 6 and 7 of this EP.</p> <p>(3) A search of DPLH’s Aboriginal Cultural Heritage Inquiry System was undertaken for this EP (see Appendix G).</p> <p>(4) Not required.</p> <p>(5, 6) In the course of developing this EP, Woodside has developed oil spill preparedness and response positions and an Oil Pollution First Strike Plan (see Appendix H and I of this EP).</p> <p>(7) Woodside complies with regulation 25 of the Environment Regulations and consults relevant persons in the course of developing an EP, as described in Section 5.3 of this EP. Woodside also engages in ongoing consultation throughout the life of an EP as described in Section 7.10 of the EP.</p> <p>(8) Woodside will provide notification of significant change to relevant persons as referenced in Section 7.10 of the EP.</p> <p>(9, 10) Not required.</p> <p>(11) The Oil Pollution First Strike Plan (Appendix I) for this EP includes a requirement to notify stakeholders who may be affected by a spill. No additional measures or controls are required.</p>

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	<p>consultation approach, feedback and comments from relevant persons continued to be assessed and responded to, as required, throughout the life of an EP.</p> <p>(8) Woodside confirmed it would continue to provide the Shire with significant updates with respect to the proposed activities when relevant.</p> <p>(9) Woodside noted the Shire’s advice regarding the frequency of briefings to the LEMC.</p> <p>(10) Woodside accepted the Shire’s proposal to deliver briefings that cover its program of activities in an area over a period of time.</p> <p>(11) Woodside confirmed it would notify relevant stakeholders if required as per Woodside’s oil spill response arrangements.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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City of Karratha

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Karratha for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Karratha on 15 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Karratha with the opportunity to provide feedback over a 5-month period.

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Summary of information provided and record of consultation:

- On 15 September 2023, Woodside emailed City of Karratha advising of the proposed activity (Record of Consultation, reference 1.19) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to City of Karratha following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Carnarvon

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Carnarvon for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Carnarvon on 13 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Carnarvon with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 13 September 2023, Woodside emailed Shire of Carnarvon advising of the proposed activity (Record of Consultation, reference 1.4) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to Shire of Carnarvon following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Town of Port Hedland		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Town of Port Hedland for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Town of Port Hedland on 15 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Town of Port Hedland with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 15 September 2023, Woodside emailed Town of Port Hedland advising of the proposed activity (Record of Consultation, reference 1.20) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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- On 16 October 2023, Woodside sent a reminder email to Town of Port Hedland following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Wyndham-East Kimberley

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Wyndham-East Kimberley for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Wyndham-East Kimberley on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Wyndham-East Kimberley with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Shire of Wyndham-East Kimberley advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shire of Wyndham-East Kimberley following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside’s website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Shire of Derby/West Kimberley		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Derby/West Kimberley for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Shire of Derby/West Kimberley on 18 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has addressed and responded to Shire of Derby/West Kimberley over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 18 September 2023, Woodside emailed Shire of Derby/West Kimberley advising of the proposed activity (Record of Consultation, reference 1.24) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a follow-up email to the Shire of Derby/West Kimberley (Record of Consultation, reference 2.1 and included a link to the Consultation Information Sheet on Woodside's website) • On 24 October 2023, Shire of Derby/West Kimberley responded and: <ul style="list-style-type: none"> - (1) Confirmed it had no specific feedback regarding the unlikely oil spill impacts. - (2) Advised it expected to be notified as part of any oil spill response needed. 		

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<ul style="list-style-type: none"> On 03 November 2023, Woodside responded thanking Shire of Derby/West Kimberley for its feedback and confirming that in the highly unlikely event a hydrocarbon release was to enter the Shire's area of responsibility, Woodside would at that time contact the Shire with respect to response arrangements. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Shire of Derby/West Kimberley provided feedback that:</p> <p>(1) It had no specific feedback regarding unlikely oil spill impacts.</p> <p>(2) It expected to be notified as part of any oil spill response needed.</p>	<p>(1) Woodside noted Shire of Derby/West Kimberley had no specific feedback on the activity.</p> <p>(2) Woodside confirmed that in line with the Oil Pollution First Strike Plan, in the highly unlikely event a hydrocarbon release was to enter the Shire's area of responsibility, Woodside would at that time contact the Shire with respect to response arrangements.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Not required.</p> <p>(2) The Oil Pollution First Strike Plan (Appendix I) includes a requirement to notify stakeholders who may be affected by a spill.</p> <p>No additional controls or inclusions required.</p>
Shire of East Pilbara		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of East Pilbara for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Shire of East Pilbara on 02 October 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. 		

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- Woodside has provided Shire of East Pilbara with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 02 October 2023, Woodside emailed Shire of East Pilbara advising of the proposed activity (Record of Consultation, reference 1.52) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 24 October 2023, Woodside sent a reminder email to Shire of East Pilbara following up on the proposed activity (Record of Consultation, reference 2.8).

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Broome

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Broome for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Broome on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has addressed and responded to Shire of Broome over a 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed Shire of Broome advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 22 September 2023, Shire of Broome responded to Woodside and:

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- (1) Confirmed it had no comment on the proposal due to the significant distance from Broome.
- (2) Noted it looked forward to receiving referrals related to proposals closer to Broome.
- On 5 October 2023, Woodside responding thanking Shire of Broome for its email. Woodside noted Shire of Broome had no comment on the environment plan and confirmed it would continue to consult the Shire on activities closer to Broome.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Shire of Broome advised:</p> <p>(1) Due to the distance from Broome, it had no comment on the proposal.</p> <p>(2) It looked forward to receiving referrals related to proposals closer to Broome.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted the Shire of Broome had no comments on the proposal.</p> <p>(2) Woodside confirmed it would continue to consult Shire of Broome on proposals closer to Broome.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1, 2) Not required.</p> <p>No additional measures or controls are required.</p>

Shire of Shark Bay

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Shark Bay for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Shark Bay on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Shire of Shark Bay over a 5-month period.

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Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Shire of Shark Bay advising of the proposed activity (Record of Consultation, reference 1.28) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shire of Shark Bay following up on the proposed activities (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.
- On 17 October 2023, Woodside met with the Shire of Shark Bay during a community information session in Denham. The discussion with the Shire included:
 - Woodside explaining the purpose of consultation for EPs.
 - Woodside noting that consultation is based on the EMBA and no activities are planned in Shark Bay.
 - Woodside providing an overview of activities including this EP.
 - The Shire advising it would provide a list of other potentially relevant persons to consult.
- On 18 October 2023, the Shire of Shark Bay emailed Woodside thanking it for the meeting. The Shire:
 - **(1)** Recommended a list of contacts in Shark Bay who might be interested in providing feedback on the proposed activity and expressed an interest in setting up a meeting with interested contacts in the future. Woodside has sent consultation information to these contacts.
 - **(2)** Provided advice on the best consultation channels for the broader Shark Bay community.
 - **(3)** Advised that as a local government, Shire of Shark Bay could not post Woodside content on its website but could share graphics containing consultation information on its Facebook page on behalf of Woodside.
- On 20 October 2023, Woodside sent an email thanking Shire of Shark Bay for the meeting and:
 - Confirmed it would consult the stakeholders recommended by the Shire.
 - Thanked the Shire for its advice on the best consultation methods for reaching the broader community.
 - Provided information, including links to the Consultation Information Sheet, for this EP and a separate Woodside EP which the Shire had shown interest in.
 - Explained the environment that may be affected (EMBA) and how it affected the Shire of Shark Bay for this EP and the separate Woodside EP.
 - Confirmed Woodside looked forward to meeting with the Shire in the future.
- On 31 October 2023, Woodside sent an email to three Shire of Shark Bay representatives providing another overview of the proposed activity (Record of Consultation, reference 1.60).
- On 15 December 2023, Woodside sent a reminder email to three Shire of Shark Bay representatives following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>Shire of Shark Bay:</p> <p>(1) Provided Woodside with a list of contacts who may be interested in providing feedback on the activities proposed in this EP.</p> <p>(2) Provided advice on consultation channels for Shark Bay.</p> <p>(3) Advised it could share Woodside consultation graphics on its Facebook page.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside assessed the Shire of Shark Bay's feedback regarding potentially relevant persons for this EP and provided consultation information to those stakeholders.</p> <p>(2) Woodside noted Shire of Shark Bay's advice for the best consultation channels for the broader community and will action this approach for consultation on future EPs where relevant.</p> <p>(3) Woodside noted the Shire of Shark Bay's advice regarding sharing consultation information on Facebook on behalf of Woodside.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1) Woodside updated its Assessment of Relevance (see Appendix F, Table 1) to include the stakeholders Shire of Shark Bay identified as potentially relevant.</p> <p>(2, 3) Not required.</p> <p>No additional measures or controls are required.</p>
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Shire of Christmas Island

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Christmas Island for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Christmas Island on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Shire of Christmas Island over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Shire of Christmas Island advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- On 16 October 2023, Woodside sent a reminder email to Shire of Christmas Island following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.
- On 25 October 2023, Woodside emailed Shire of Christmas Island to provide details for its contact for First Nations Peoples and seek contact details for the Christmas Island Malay Peoples.
- On 2 November 2023, Woodside sent a follow-up email regarding contacts for the Christmas Island Malay Peoples and explaining its intention to provide an overview of Woodside Energy and its projects to the community and broader Shire.
- On 3 November 2023, Woodside had a phone call with Shire of Christmas Island to discuss consultation opportunities. During the discussion:
 - Woodside provided an overview of role responsibilities and points of contact with First Nations communities and Corporations in WA and NT.
 - Woodside discussed the recent changes to consultation and engagement as a result of the Santos Tiwi Island matter.
 - The Shire provided history and context about the island and Shire roles.
 - **(1)** The Shire noted it was unaware of prior correspondence regarding this EP.
 - Woodside explained the process for determining the EMBA for this EP and confirmed why Christmas Island had been consulted.
 - **(2)** The Shire noted it appreciated and supported Woodside's methodology for identifying and including First Nations stakeholder input.
 - **(3)** The Shire identified other Malay and Chinese contacts that Woodside should consider including in future engagements where relevant.
 - **(4)** The Shire welcomed the opportunity for a potential meeting with Woodside on Christmas Island and provided information about flight availability.
- On 3 November 2023, Woodside sent an email in follow-up to the phone call. Woodside noted:
 - It wanted to ensure Shire of Christmas Island has an opportunity to hear about Woodside Energy projects in the region and to take feedback.
 - Potential opportunities to meet with Shire of Christmas Island during November or December.
- On 3 November 2023, Shire of Christmas Island responded thanking Woodside for its email and:
 - **(4)** Provided information about flight availability to Christmas Island during December for a potential meeting.
 - **(1)** Advised it had checked previous correspondence between Woodside and Christmas Island and noted a series of emails for licenced fishers about a separate Woodside drilling project earlier in 2023.
- On 6 November 2023, Woodside responded thanking Shire of Christmas Island for its email and advised it was also looking to organise a consultation session with Cocos (Keeling) Islands.
- On 6 November 2023, the Shire of Christmas Island responded and confirmed flights were available from Christmas Island to Cocos (Keeling) Islands.
- On 15 December 2023, Woodside emailed Shire of Christmas Island Fisheries Management Committee (FMC) advising of the proposed activity (Record of Consultation, reference 1.103) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- On 9 January 2024, Woodside sent a reminder email to the FMC following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.
- On 19 January 2024, the FMC responded thanking Woodside for the opportunity to provide feedback. The FMC:
 - **(5)** Stated its experience of emergency communications in the external Indian Ocean Territories (IOTs) during times of widespread natural disasters that impacted the WA coastline and IOTs simultaneously was less than satisfactory, and advised it would like to submit to Woodside that dedicated communication, care and mitigation plans needed to be committed to for Christmas Island and the neighbouring Cocos (Keeling) Islands.
 - **(6)** Noted that while the mainland had a larger population and potentially greater economic impact from a significant failure at the facility, the livelihoods of residents in the external territories also needed careful consideration, and the recent 2022 declaration of the Christmas Island and Cocos (Keeling) Islands Marine Parks further underscored the importance of addressing the unique concerns and circumstances of the external territories. The FMC further stated it would welcome a dedicated emergency plan from Woodside for the IOT territories of Christmas Island and Cocos (Keeling) Islands and would like to underline the dramatic effect on life on the islands in the event their waters sustained effects from an unwanted event at the Woodside facilities. The FMC asked that mitigation plans be discussed and workshopped with relevant stakeholders in the Commonwealth, local government and emergency services in the IOTs to ensure a planned response was on file.
- On 5 February 2024, Woodside phoned the Shire of Christmas Island following up on discussions regarding a potential meeting. The Shire advised that it had provided written feedback via its FMC. Woodside thanked the Shire and confirmed it would respond to the Shire via its FMC.
- On 12 February 2024, Woodside responded thanking the FMC for its correspondence and for seeking clarification on oil spill responses. Woodside:
 - Confirmed its process for oil spill response planning included the following steps:
 - Assess the credible spill risk for the activity.
 - Establish areas that may be contacted by an oil spill based on the outputs of computer simulation modelling, which use credible spill information together with weather and oceanographic data.
 - Select appropriate oil spill response clean-up methods for the credible spill event.
 - Develop an activity-specific Oil Pollution First Strike Plan to set out the steps to take if an oil spill does occur.
 - Regularly test, train and assure the First Strike Plan.
 - Advised that for Ngujima-Yin operations, the computer oil spill simulation modelling predicted a minimum contact time at Christmas Island of 44 days in the event of a highly unlikely oil spill. This was considered to be a significant lead time to mount appropriate spill response measures.
 - Noted that while oil spill response within the IOTs fell under the jurisdiction of AMSA, Woodside would make resources available to the response effort via oil spill response contractors and that Woodside maintained an equipment stockpile and trained staff on the mainland that could be deployed if required during a spill event.
 - Advised that Woodside, together with other Australian energy companies, had developed a suite of site-specific 'tactical response plans' (TRPs) which were shared across the industry. Woodside noted:

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- The plans provided information on suitable clean-up equipment required closest stockpiles, local infrastructure, specific sensitivities, and other pertinent information to improve efficiency during a spill.
 - As a result of FMC's feedback, Woodside had sought advice from an oil spill contractor on the development of a TRP appropriate for Christmas Island and understood a request had also been made for the contractor to develop a TRP for Cocos (Keeling) Islands.
 - Woodside would provide an update to FMC once it had received information from the oil spill contractor on an appropriate way forward for the Christmas Island TRP and may seek inputs for the TRP's development.
- Advised that further to the proposed TRPs for Christmas and Cocos (Keeling) Islands, it could add a relevant contact for Christmas and Cocos (Keeling) Islands into the notifications table within the First Strike Plan for this activity, which would ensure timely notifications were made to relevant parties if a spill event occurred that risked contacting Christmas and Cocos (Keeling) Islands. Woodside asked that if this would be considered useful, the FMC provide relevant contact information.
 - Sought additional advice on whether further consultation with Christmas Island's Malay community was requested. Woodside noted that a member of its First Nations Engagement team had received advice that the point of contact for the Malay community and the FMC were the same.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Shire of Christmas Island:</p> <p>(1) Noted it was unaware of Woodside consultation correspondence related to this EP prior to the phone call from Woodside on 3 November 2023, but had seen a series of emails for fishery licence holders regarding a separate Woodside EP earlier in 2023.</p> <p>(2) Noted it appreciated and supported Woodside's methodology for identifying and including First Nations stakeholder input.</p> <p>(3) Identified Malay and Chinese communities on Christmas Island that Woodside should consider engaging for future EPs.</p> <p>(4) Welcomed the opportunity for a potential meeting with Woodside and provided information about flight schedules and bookings.</p> <p>(5) The Shire's Fishing Management Committee (FMC) provided feedback and described its</p>	<p>(1) Woodside noted Shire of Christmas Island's feedback that it had not seen the email correspondence regarding this EP and that the Shire appreciated Woodside's phone call regarding the proposed activity and welcomed the opportunity to meet in-person to discuss Woodside Energy projects.</p> <p>(2) Woodside noted the Shire's support for its methodology and efforts in identifying and seeking input from First Nations stakeholders.</p> <p>(3) Woodside noted the Shire's advice regarding Malay and Chinese communities on Christmas Island who may be interested in providing feedback on Woodside activities in the future and would consider the additional stakeholders during relevancy assessments for future EPs. As part of ongoing consultation, Woodside would also continue to consult following acceptance of this EP.</p> <p>(4) Woodside confirmed it would like to ensure Christmas Island had an opportunity to hear about Woodside Energy projects and</p>	<p>(1, 2) Not required.</p> <p>(3) Woodside will consider the relevancy of additional stakeholders identified by the Shire of Christmas Island for future EPs.</p> <p>(4) As identified in Section 7.10 of this EP, Woodside will continue to consult following acceptance of the EP, as requirement by the implementation strategy as set out regulation 22(15) of the Environment Regulations.</p> <p>(5) Woodside's process for identifying potential response options for hydrocarbon release scenarios is described in the OSPRMA (Appendix H).</p> <p>(6) At FMC's discretion, Woodside will include a relevant Christmas Island contact in the notification table for the Oil Pollution First Strike Plan for this activity (Appendix I).</p> <p>No additional measures or controls are required.</p>

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<p>experience of emergency communications during natural disasters as less than satisfactory and advised it would like to submit to Woodside that dedicated communication, care and mitigation plans needed to be committed to for Christmas and Cocos (Keeling) Islands. While feedback has been received, there were no objections or claims.</p> <p>(6) The FMC also noted that the livelihoods of residents in the external territories needed careful and unique consideration and stated it would welcome a dedicated emergency plan from Woodside for Christmas and Cocos (Keeling) Islands. While feedback has been received, there were no objections or claims.</p>	<p>would work towards dates in late November or December for a potential meeting.</p> <p>(5) Woodside assessed the feedback from the FMC and provided a explanation of its process for oil spill response planning. Woodside advised that in the highly unlikely event of an oil spill, simulation modelling predicted a minimum contact time at Christmas Island of 44 days, which was considered to be significant lead time to mount appropriate spill response measures. Woodside noted that while oil spill response in the IOTs fell under the jurisdiction of AMSA, Woodside would make resources available to the response effort. Woodside confirmed it maintained an equipment stockpile and trained staff on the mainland that could be deployed if required.</p> <p>(6) As a result of FMC's feedback, Woodside sought advice from an oil spill response contractor on the development of a TRP for Christmas Island, and understands a TRP is also being developed for Cocos (Keeling) Islands. Woodside advised it would provide an update to the FMC once it received information on an appropriate way forward for the Christmas Island TRP. Woodside also advised it could include relevant contacts in its First Strike Plan, and for Christmas Island to provide contact information if this would be useful.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	
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City of Greater Geraldton

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Greater Geraldton for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to City of Greater Geraldton based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Greater Geraldton with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed City of Greater Geraldton advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to City of Greater Geraldton following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Augusta Margaret River

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Augusta Margaret River for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Augusta Margaret River on 21 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up seeking feedback on the proposed activities.
- Woodside has provided Shire of Augusta Margaret River with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Augusta Margaret River advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Augusta Margaret River following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Chapman Valley

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Chapman Valley for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Chapman Valley on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided Shire of Chapman Valley with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Shire of Chapman Valley advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shire of Chapman Valley following up on the proposed activity (Record of Consultation, reference 2.1).

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Dandaragan

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Dandaragan for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Dandaragan on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Dandaragan with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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- On 19 September 2023, Woodside emailed Shire of Dandaragan advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Shire of Dandaragan following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Gingin

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Gingin for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Gingin on 19 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Gingin with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 19 September 2023, Woodside emailed Shire of Gingin advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder email to Shire of Gingin following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Shire of Northampton		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Northampton for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Shire of Northampton on 19 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Shire of Northampton with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 19 September 2023, Woodside emailed Shire of Northampton advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to Shire of Northampton following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
City of Albany		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Albany for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to City of Albany on 21 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided City of Albany with the opportunity to provide feedback over a 2-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, Woodside emailed City of Albany advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to City of Albany following up on the proposed activities (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside	No additional measures or controls are required.

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	will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
City of Bunbury		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Bunbury for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to City of Bunbury on 21 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided City of Bunbury with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, Woodside emailed City of Bunbury advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to City of Bunbury following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
City of Busselton		

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Busselton for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Busselton on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Busselton with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Busselton advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Busselton advising of the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Town of Cambridge

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Town of Cambridge for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Town of Cambridge on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Town of Cambridge with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Town of Cambridge advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Town of Cambridge following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Capel

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Capel for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Shire of Capel on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Capel with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Capel advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Capel following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Carnamah

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Carnamah for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Carnamah on 21 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Carnamah with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Carnamah advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Carnamah following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Cockburn

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Cockburn for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Cockburn on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided City of Cockburn with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Cockburn advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, City of Cockburn sent a reminder email to City of Cockburn following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Cocos (Keeling) Islands

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Cocos (Keeling) Islands for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Cocos (Keeling) Islands on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has addressed and responded to Shire of Cocos (Keeling) Islands over 5-month period.

Summary of information provided and record of consultation:

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- On 15 September 2023, Woodside telephoned the Shire of Cocos (Keeling) Islands seeking details for the best person to contact regarding consultation with the Cocos Island Malays. Woodside was advised the Shire CEO was the best person to speak to, however they were on leave.
- On 21 September 2023, Woodside emailed Shire of Cocos (Keeling) Islands advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 4 October 2023, Woodside telephoned Shire of Cocos (Keeling) Islands following up on the 15 September 2023 phone call regarding the Cocos Malays.
- On 4 October 2023, Woodside emailed the Shire CEO to provide information on this EP and to request feedback on interests/concerns.
- On 18 October 2023, Woodside sent a reminder email to Shire of Cocos (Keeling) Islands following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.
- On 24 October 2023, Woodside sent a follow-up email and reconfirmed its offer to conduct a consultation meeting or to provide additional project information.
- On 3 November 2023, Woodside telephoned Shire of Cocos (Keeling) Islands to confirm if the Cocos Island Malays considered themselves relevant persons as defined by NOPSEMA. The Shire CEO advised:
 - **(1)** The Commonwealth does not currently recognise the Cocos Malays as First Nations peoples, but the Shire CEO would speak to the Shire President and respond to Woodside via email. Woodside advised that if Cocos Malays did not wish to be consulted for this EP, they were welcome to contact Woodside in the future.
- **(2)** On 6 November 2023, the Shire emailed Woodside to confirm that as mapping showed the Cocos (Keeling) Islands may, while highly unlikely, be impacted by hydrocarbon release, it would like to have a roundtable discussion – preferably on-site but at a minimum online - with the Cocos Malays, Parks Australia, and the council, to fully understand the EMBA.
- On 6 November 2023, Woodside emailed the Shire and acknowledged the request for a meeting. Woodside enquired about availability and preferred dates/times over the following weeks and confirmed it would discuss logistics for the meeting, with a face-to-face meeting preferred if possible.
- On 7 November 2023, Woodside emailed the Shire noting it had spoken to the travel advisor on the island and proposing potential meeting dates in late November or early December, or February if the 2023 dates did not align with the Shire's schedule.
- On 14 November 2023, Woodside emailed to follow up on potential dates for a meeting.
- On 5 February 2024, Woodside telephoned Shire of Cocos (Keeling) Islands to organise arrangements for an online meeting on 15 February 2024.
- On 15 February 2024, Woodside met with Shire of Cocos (Keeling) Islands via MS Teams. Woodside provided information about three EPs including this one and described how the EMBA was developed and why it extended to the Cocos (Keeling) Islands. During the meeting:
 - **(3)** The Shire noted it appreciated Woodside's consultation and the explanation of the EMBA, and had no comments or concerns specific to this EP.
 - The Shire advised many groups on the island had strong interests in environmental matters and suggested a further meeting with additional Shire representatives regarding Woodside activities. Woodside and the Shire agreed to arrange another meeting to address this.
 - Woodside advised that it welcomed feedback throughout the life of an EP.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) The Shire advised that the Commonwealth did not recognise the Cocos Malays as First Nations peoples, but the Shire would advise if the Cocos Malays wished to be consulted for this EP.</p> <p>(2) The Shire confirmed that while highly unlikely, the Cocos Island could be impacted by a hydrocarbon release, it would like a consultation meeting with Woodside.</p> <p>(3) Following a Teams meeting between Woodside and the Shire, the Shire thanked Woodside for its explanation of the EMBA and how it related to the Shire. The Shire had no specific comments or concerns on this EP.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted the Shire's advice that the Commonwealth did not recognise the Cocos Malays as First Nations peoples, but advised that should the Cocos Malays consider themselves to be relevant persons as defined by NOPSEMA, they were welcome to contact Woodside in the future.</p> <p>(2) Woodside acknowledged the Shire's request for a meeting. Woodside proposed potential meeting dates in November and December, and advised the meeting could be pushed back until February if the 2023 dates didn't align. The meeting took place on 15 February 2024.</p> <p>(3) Woodside noted the Shire had no specific comments or concerns regarding this EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).</p>	<p>(1, 2, 3) Woodside engages in ongoing consultation with relevant persons as described in Section 7.10 of the EP.</p> <p>No additional measures or controls are required.</p>

Shire of Coorow

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Coorow for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Coorow on 21 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Coorow with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Coorow advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Coorow following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Denmark

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Denmark for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Denmark on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided Shire of Denmark with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Denmark advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Denmark following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Dundas

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Dundas for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Dundas on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Dundas with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 21 September 2023, Woodside emailed Shire of Dundas advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Shire of Dundas following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Town of Cottesloe		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Town of Cottesloe for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Town of Cottesloe on 21 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Town of Cottesloe with the opportunity to provide feedback over 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 21 September 2023, Woodside emailed Town of Cottesloe advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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- On 18 October 2023, Woodside sent a reminder email to Town of Cottesloe following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Esperance

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Esperance for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Esperance on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Esperance with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Esperance advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Esperance following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Fremantle

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Fremantle for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Fremantle on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Fremantle with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Fremantle advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Fremantle following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been	No additional measures or controls are required.

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	<p>accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	
<p>Shire of Harvey</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Harvey for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Shire of Harvey on 21 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Shire of Harvey with the opportunity to provide feedback over <u>5-month</u> period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, Woodside emailed Shire of Harvey advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet. • On 18 October 2023, Woodside sent a reminder email to Shire of Harvey following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>No additional measures or controls are required.</p>
<p>This document is protected by copyright. No part of this document may be reproduced, adapted, transmitted, or stored in any form by any process (electronic or otherwise) without the specific written consent of Woodside. All rights are reserved.</p> <p>Controlled Ref No: V0000AH0500 Revision: 0 Page 363 of 892</p> <p style="text-align: center;">Uncontrolled when printed. Refer to electronic version for most up to date information.</p>		

Shire of Irwin

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Irwin for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Irwin on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has provided Shire of Irwin with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Irwin advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Irwin following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Jerramungup

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Jerramungup for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Jerramungup on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Jerramungup with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Jerramungup advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Jerramungup following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Joondalup

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Joondalup for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Joondalup on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Joondalup with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Joondalup advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Joondalup following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Mandurah

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Mandurah for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to City of Mandurah on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Mandurah with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Mandurah advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Mandurah following up on the proposed activities (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Kwinana

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Kwinana for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Kwinana on 21 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Kwinana with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Kwinana advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Kwinana following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shire of Manjimup

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Manjimup for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Manjimup on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided Shire of Manjimup with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Manjimup advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Manjimup following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Town of Mosman Park

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Town of Mosman Park for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Town of Mosman Park on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Town of Mosman Park with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 21 September 2023, Woodside emailed Town of Mosman Park advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Town of Mosman Park following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Shire of Nannup		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Nannup for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Shire of Nannup on 21 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Shire of Nannup with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 21 September 2023, Woodside emailed Shire of Nannup advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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- On 18 October 2023, Woodside sent a reminder email to Shire of Nannup following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

City of Nedlands

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Nedlands for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Nedlands on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Nedlands with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Nedlands advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Nedlands following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
City of Rockingham		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Rockingham for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to City of Rockingham on 21 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided City of Rockingham with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, Woodside emailed City of Rockingham advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to City of Rockingham following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
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City of Stirling

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Stirling for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to City of Stirling on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided City of Stirling with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed City of Stirling advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to City of Stirling following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside	No additional measures or controls are required.

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	will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
City of Wanneroo		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with City of Wanneroo for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to City of Wanneroo on 21 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided City of Wanneroo with the opportunity to provide feedback over 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 September 2023, Woodside emailed City of Wanneroo advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to City of Wanneroo following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Shire of Waroona		
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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Shire of Waroona for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Shire of Waroona on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Shire of Waroona with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Waroona advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Waroona following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Exmouth Community Liaison Group (CLG)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Exmouth CLG for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Exmouth CLG on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided the Exmouth CLG with the opportunity to provide feedback over 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed Exmouth CLG advising of the proposed activity (Record of Consultation, reference 1.25) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Exmouth CLG following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.
- On 21 November 2023, Woodside presented to the Exmouth CLG meeting on a range of Woodside activities, including this EP. Woodside presented a slide which listed Environment Plans on which the CLG members had recently been consulted (Record of Consultation, reference 3.4.2). The slide included a QR code and URL to the Consultation Activities page of the Woodside website. 12 individuals attended the meeting, representing: Exmouth Volunteer Marine Rescue; Gascoyne Development Commission; Shire of Exmouth; PHI Helicopters; Bhagwan Marine; Exmouth Chamber of Commerce and Industry; Ningaloo Coast World Heritage Advisory Council; Australia's Coral Coast Tourism; Santos. No feedback was received regarding this specific EP.
- On 4 December 2023, Woodside's presentation was emailed to the CLG regardless of whether they attended the meeting.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Karratha Community Liaison Group (CLG)

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Karratha CLG for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Karratha CLG on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Karratha CLG with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed Karratha CLG advising of the proposed activity (Record of Consultation, reference 1.26 and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 29 September 2023, Woodside presented to the Karratha CLG meeting on a range of Woodside activities, including this EP. Woodside presented a slide which listed EPs which Woodside was currently consulting on (Record of Consultation, reference 3.3.2). The slide included a QR code and URL to the Consultation Activities page of the Woodside website. 14 individuals attended the meeting: City of Karratha (council and staff representatives); Karratha Central Health Care; Bechtel; Dampier Community Association; Regional Development Australia; Karratha & Districts Chamber of Commerce and Industry; Ngarluma Yindjibarndi Foundation Ltd; Pilbara Ports Authority. No feedback was received regarding this specific EP.
- On 16 October 2023, Woodside sent a reminder email to Karratha CLG following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.
- On 24 November 2023, Woodside presented to the Karratha CLG meeting on a range of Woodside activities, including this EP. Woodside presented a slide which listed Environment Plans on which the CLG members had recently been consulted (Record of Consultation, reference 3.3.6). The slide included a QR code and URL to the Consultation Activities page of the Woodside website. Five individuals attended the meeting, representing: City of Karratha (staff representatives); Dampier Community Association; Ngarluma Yindjibarndi Foundation Ltd; Department of Education. No feedback was received regarding this specific EP.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been	No additional measures or controls are required.

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	accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
Onslow Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Onslow Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Onslow Chamber of Commerce and Industry on 15 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided the Onslow Chamber of Commerce and Industry with the opportunity to provide feedback over 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 15 September 2023, Woodside emailed Onslow Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.16) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Onslow Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Port Hedland Chamber of Commerce and Industry		
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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Port Hedland Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Port Hedland Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Port Hedland Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed Port Hedland Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.27) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to Port Hedland Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Carnarvon Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Carnarvon Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Carnarvon Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Carnarvon Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed Carnarvon Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.23) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Carnarvon Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Karratha and Districts Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Karratha and Districts Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Karratha and Districts Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Karratha and Districts Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Karratha and Districts Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.49) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2023, Woodside sent a reminder email to Karratha and Districts Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Exmouth Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Exmouth Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Exmouth Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Exmouth Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Exmouth Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.50) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Exmouth Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

East Kimberley Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with East Kimberley Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to East Kimberley Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided East Kimberley Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 18 September 2023, Woodside emailed East Kimberley Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.28) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to East Kimberley Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Derby Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Derby Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Derby Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Derby Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 18 September 2023, Woodside emailed Derby Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.28) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Derby Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Broome Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Broome Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Broome Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Broome Chamber of Commerce with the opportunity to provide feedback over 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 18 September 2023, Woodside emailed Broome Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.22) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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<ul style="list-style-type: none"> On 18 October 2023, Woodside sent a reminder email to Broome Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Mid West Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Mid West Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Mid West Chamber of Commerce and Industry on 18 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Mid West Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 18 September 2023, Woodside emailed Mid West Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.28) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to Mid West Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Margaret River Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Margaret River Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Margaret River Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Margaret River Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Margaret River Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 16 October 2023, Woodside sent a reminder email to Margaret River Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Jurien Bay Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Jurien Bay Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Jurien Bay Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Jurien Bay Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Jurien Bay Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to Jurien Bay Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside	No additional measures or controls are required.

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	will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
Lancelin Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Lancelin Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Lancelin Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Lancelin Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Lancelin Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to Lancelin Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

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Albany Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Albany Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Albany Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Albany Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Albany Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Albany Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Bunbury Geographe Chamber of Commerce and Industry

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Bunbury Geographe Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Bunbury Geographe Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Bunbury Geographe Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On September 2023, Woodside emailed Bunbury Geographe Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Bunbury Geographe Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Busselton Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Busselton Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Busselton Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Busselton Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Busselton Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Busselton Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Dunsborough Yallingup Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Dunsborough Yallingup Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River

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Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Dunsborough Yallingup Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Dunsborough Yallingup Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Dunsborough Yallingup Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Dunsborough Yallingup Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Capel Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Capel Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Capel Chamber of Commerce and Industry based on their function, interest and activities.

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- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Capel Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Capel Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Capel Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Melville Cockburn Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Melville Cockburn Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Melville Cockburn Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.

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- Woodside has provided Melville Cockburn Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Melville Cockburn Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Melville Cockburn Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Denmark Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25(1) of the Environment Regulations and consultation with Denmark Chamber of Commerce and Industry for the purpose of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Denmark Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Denmark Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

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<ul style="list-style-type: none"> On 27 September 2023, Woodside emailed Denmark Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Denmark Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plans
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Esperance Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Esperance Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Esperance Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Esperance Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 September 2023, Woodside emailed Esperance Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

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<ul style="list-style-type: none"> On 18 October 2023, Woodside sent a reminder email to Esperance Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Fremantle Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Fremantle Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. Consultation Information provided to Fremantle Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent a follow up email seeking feedback on the proposed activities. Woodside has provided Fremantle Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 27 September 2023, Woodside emailed Fremantle Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 18 October 2023, Woodside sent a reminder email to Fremantle Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Peel Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Peel Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Peel Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Peel Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Peel Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to Peel Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
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Rockingham Kwinana Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Rockingham Kwinana Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Rockingham Kwinana Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Rockingham Kwinana Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Rockingham Kwinana Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Rockingham Kwinana Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been	No additional measures or controls are required.

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	accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
Manjimup Chamber of Commerce and Industry		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Manjimup Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since 12 September 2023. • Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback. • Consultation Information provided to Manjimup Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent a follow up email seeking feedback on the proposed activities. • Woodside has provided Manjimup Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 27 September 2023, Woodside emailed Manjimup Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 18 October 2023, Woodside sent a reminder email to Manjimup Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

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Nannup Chamber of Commerce and Industry

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Nannup Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Nannup Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Nannup Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Nannup Chamber of Commerce advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Nannup Chamber of Commerce following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Augusta Chamber of Commerce and Industry

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Augusta Chamber of Commerce and Industry for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Augusta Chamber of Commerce and Industry on 27 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Augusta Chamber of Commerce and Industry with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 27 September 2023, Woodside emailed Augusta Chamber of Commerce and Industry advising of the proposed activity (Record of Consultation, reference 1.51) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Augusta Chamber of Commerce and Industry following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Christmas Island Business Association

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Christmas Island Business Association for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Christmas Island Business Association on 15 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Christmas Island Business Association with the opportunity to provide feedback over a 2-month period.

Summary of information provided and record of consultation:

- On 15 December 2023, Woodside emailed Christmas Island Business Association advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to Christmas Island Business Association following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Indian Ocean Territories Regional Development Organisation

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Indian Ocean Territories Regional Development Organisation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.

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- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Indian Ocean Territories Regional Development Organisation on 15 December 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Indian Ocean Territories Regional Development Organisation with the opportunity to provide feedback over a 2-month period.

Summary of information provided and record of consultation:

- On 15 December 2023, Woodside emailed Indian Ocean Territories Regional Development Organisation advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to Indian Ocean Territories Regional Development Organisation following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Research institutes and local conservation groups or organisations

Cape Conservation Group (CCG)

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Cape Conservation Group (CCG) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

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- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.
- Consultation Information provided to Cape Conservation Group on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Cape Conservation Group with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Cape Conservation Group advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2023, Woodside sent a reminder email to Cape Conservation Group following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Protect Ningaloo

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Protect Ningaloo for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since 12 September 2023.
- Woodside published advertisements in a national, state and relevant local newspapers including The Australian, The West Australian, NT News, Pilbara News, North West Telegraph, Midwest Times, Manjimup-Bridgetown Times, Kalgoorlie Miner (13 September 2023), Broome Advertiser, South Western Times, Kimberley

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Echo, Albany Advertiser, Countryman, Narrogin Observer, Great Southern Herald, Harvey Waroona Reporter (14 September 2023) and Augusta Margaret River Times, Busselton Dunsborough Times, Geraldton Guardian (15 September 2023), Koori Mail (20 September 2023) and National Indigenous Times (26 September 2023) advising of the proposed activities and requesting feedback.

- Consultation Information provided to Protect Ningaloo on 21 September 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent a follow up email seeking feedback on the proposed activities.
- Woodside has provided Protect Ningaloo with the opportunity to provide feedback over a 5-month period.

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Protect Ningaloo advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2023, Woodside sent a reminder email to Protect Ningaloo following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Table 3: Engagement Report with Persons or Organisations Assessed as Not Relevant

Commonwealth, Western Australia and Northern Territory Government Departments of Agencies – Marine
Department of Territory Families, Housing and Communities (TFHC) – Heritage Branch
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 15 December 2023, Woodside emailed TFHC – Heritage Branch advising of the proposed activity (Record of Consultation, reference 1.102) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 9 January 2024, Woodside sent a reminder email to TFHC – Heritage Branch following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside’s website. • (1) On 10 January 2024, TFHC – Heritage Branch emailed Woodside asking for clarification on whether any works would occur within Northern Territory waters. • On 12 January 2024, Woodside responded thanking TFHC – Heritage Branch for its email. Woodside: <ul style="list-style-type: none"> – Advised that the Operational Area for the EP was near Exmouth in Western Australia and therefore no planned activities would occur in NT waters. – Following changes to Commonwealth EP consultation, Woodside is now consulting persons or organisations in the EMBA. The EMBA for this EP extends into NT waters. – Provided a close-up map showing where the EMBA extends into NT waters. • On 15 January 2024, TFHC – Heritage Branch responded thanking Woodside for highlighting where the EMBA extends into NT waters. TFHC – Heritage Branch: <ul style="list-style-type: none"> – (2) Noted that Woodside’s report made no comment on the potential impact of hydrocarbon release for underwater cultural heritage (UCH) and that it appeared the impact would only affect marine life. If correct, TFHC – Heritage Branch had no further comments at this time. • On 7 February 2024, Woodside responded thanking TFHC – Heritage Branch for its response regarding the potential impact of hydrocarbon release on UCH. Woodside advised: <ul style="list-style-type: none"> – In the highly unlikely event of a hydrocarbon release, Woodside’s Oil Pollution First Strike Plan included a requirement to contact relevant persons throughout the response period. – Woodside has an Unexpected Finds Procedure within the EP which describes the actions to take should potential UCH be discovered during activities. This included engaging a maritime archaeologist to assess the potential UCH and, if confirmed, informing relevant stakeholders such as Traditional Custodians, DCCEEW and the WA Museum.

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- Woodside is aware there are numerous known shipwrecks within the EMBA for the EP, including both protected and more recent shipwrecks. However, the EMBA does not overlap any shipwrecks currently listed on the Australian National Shipwreck Database within NT waters, with the closest shipwreck in NT waters identified as the Editha, 98km to the south-east of the EMBA.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) TFHC – Heritage Branch asked for clarification on whether any works would occur in NT waters.</p> <p>(2) TFHC – Heritage Branch noted that if there were no potential impacts of a hydrocarbon release on UCH, it had no further comments at this time.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside confirmed to TFCH – Heritage Branch that there were no planned activities in NT waters, however it had been consulted because the EMBA for the EP extends into NT waters.</p> <p>(2) Woodside advised the EMBA for the EP did not overlap any known shipwrecks within NT waters. In the unlikely event of a hydrocarbon release, Woodside’s Oil Pollution First Strike Plan included a requirement to notify relevant persons, and Woodside had an Unexpected Finds Procedure which describes the actions to take should potential UCH be discovered during activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>(2) The potential environmental impacts of planned and unplanned activities are assessed in Section 6.6, 6.7 and 6.8 of this EP. Woodside’s Unexpected Finds Procedure for Underwater Cultural Heritage is described in Section 7.5. No additional measures or controls are required.</p>

Commonwealth Commercial fisheries and representative bodies

Australian Southern Bluefin Tuna Industry Association (ASBTIA)

Summary of information provided and record of consultation:

- On 03 October 2023, Woodside emailed ASBTIA advising of the proposed activity (Record of Consultation, reference 1.56) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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- On 01 November 2023, Woodside sent a reminder email to ASBTIA following up on the proposed activity (Record of Consultation, reference 2.13) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted AFMA, DAFF - Fisheries, CFA and Tuna Australia. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.10.1 of this EP. No additional measures or controls are required.

Western Australian Commercial fisheries and representative bodies

Pilbara Trap Managed Fishery

Summary of information provided and record of consultation:

- On 21 September 2023, WAFIC, on behalf of Woodside, emailed Pilbara Line Fishery advising of the proposed activity (Record of Consultation, reference 1.32) and provided a Consultation Information Sheet.
- As per advice from WAFIC regarding its consultation guidelines, no follow-up email was required for the Pilbara Line Fishery.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside has consulted DPIRD, WAFIC and individual relevant licence holders (via WAFIC). Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16).	Woodside has assessed the potential for interaction with State managed commercial fisheries in Section 4.10.1 of this EP. Woodside has implemented a consultation program to advise relevant persons of the PAP and provide opportunity to raise objections or claims, as referenced as PS 1.4 in this EP.

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		No additional measures or controls are required.
Northern Territory commercial fisheries and representative bodies		
Northern Territory Seafood Council (NTSC)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 15 December 2023, Woodside emailed NTSC advising of the proposed activity (Record of Consultation, reference 1.104) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 9 January 2024, Woodside sent a reminder email to NTSC following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Northern Territory Aquarium Fish/Display Fish Fishery		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 22 September 2023, Woodside sent a letter to Northern Territory Aquarium Fish/Display Fish Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder letter to Northern Territory Aquarium Fish/Display Fish Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has consulted NT Fisheries and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>No additional measures or controls are required.</p>
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Northern Territory Spanish Mackerel Fishery

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to Northern Territory Spanish Mackerel Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to Northern Territory Spanish Mackerel Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside has consulted NT Fisheries and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>No additional measures or controls are required.</p>

Northern Territory Offshore Net and Line Fishery

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to Northern Territory Offshore Net and Line Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

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<ul style="list-style-type: none"> On 16 October 2023, Woodside sent a reminder letter to Northern Territory Offshore Net and Line Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP. No additional measures or controls are required.
Northern Territory Demersal Fishery		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 22 September 2023, Woodside sent a letter to Northern Territory Demersal Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder letter to Northern Territory Demersal Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside has consulted NT Fisheries and individual relevant licence holders. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP. No additional measures or controls are required.
Northern Territory Mud Crab Fishery		
Summary of information provided and record of consultation:		

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- On 22 September 2023, Woodside sent a letter to Northern Territory Mud Crab Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to Northern Territory Mud Crab Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside's website.
- On 20 October 2023, a licence holder from the Northern Territory Mud Crab Fishery responded thanking Woodside for the opportunity to be consulted. It explained its business undertakings related to sea country activities and enquired about:
 - (1) The process of reporting accidental waste discharged into the environment.
 - (2) The process for reporting damage to sea life on the sea floor, such as giant clams and any other protected or endangered species.
 - (3) Opportunities for local Aboriginal sea rangers to work on the activities associated with this EP or other activities.
 - (4) Opportunities for the licence holder to work with Woodside on any activities.
- On 17 November 2023, Woodside responded and thanked the licence holder for its feedback. Woodside:
 - Advised that activities that occur under this EP have requirements for reporting to NOPSEMA which includes accidental waste discharged to the environment. The Environment Regulations specify when and what Woodside would need to report depending on the severity of the incident. There may also be requirements for reporting to other regulators that Woodside would follow, for example, to the Australian Maritime Safety Authority.
 - Advised that activities associated with this EP are located where the sea floor is predominantly soft, sandy seabed and sea life such as giant clams and other protected or endangered species are not known to occur. However, if the activities described in the EP result in the unintentional death of or injury to a fauna species listed as Threatened or Migratory, and the activity was not authorised by a permit, this would be reported to the Department of Climate Change, Energy, Environment and Water
 - Noted the Aboriginal Sea Company's interest in opportunities for local Aboriginal sea rangers and broader opportunities between Woodside and the Traditional Owners and advised Woodside was currently looking to work through both the Northern Land Council and Tiwi Land Council.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>An individual licence holder asked for information on:</p> <p>(1) The process for reporting the discharge of accidental waste.</p> <p>(2) The process for reporting damage to the sea life on the sea floor.</p> <p>(3) Opportunities for local Aboriginal sea rangers on the activity.</p>	<p>(1) Woodside assessed the licence holder's feedback and provided information on the process for reporting accidental waste discharged into the environment.</p> <p>(2) Woodside assessed the licence holder's feedback and provided information on the sea floor where the activities associated with this EP were located, and on the process for reporting the unintentional death of or</p>	<p>(1, 2) Existing controls considered sufficient as described in Sections 6 and 7 of the EP.</p> <p>(3, 4) Not required.</p> <p>Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>No additional measures or controls are required.</p>

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<p>(4) Opportunities for the licence holder to work with Woodside on broader activities.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>injury to a fauna species listed as Threatened or Migratory.</p> <p>(3, 4) Woodside noted ASC's interest in opportunities for local Aboriginal sea rangers and broader opportunities between Woodside and the Traditional Owners. Woodside advised it was currently looking to work through both the Northern Land Council and Tiwi Land Council and was open to further discussion with ASC.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	
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Northern Territory Mollusc Fishery

Summary of information provided and record of consultation:

- On 22 September 2023, Woodside sent a letter to Northern Territory Mollusc Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder letter to Northern Territory Mollusc Fishery following up on the proposed activity (Record of Consultation, reference 2.5).

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP.</p> <p>No additional measures or controls are required.</p>

Northern Territory Aquaculture Fishery

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<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 22 September 2023, Woodside sent a letter to Northern Territory Aquaculture Fishery advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder letter to Northern Territory Aquaculture Fishery following up on the proposed activity (Record of Consultation, reference 2.5) and included a QR code link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	Woodside has assessed the potential for interaction with Northern Territory managed commercial fisheries in Section 4.10.1 of this EP. No additional measures or controls are required.

Recreational marine users and representative bodies

Shark Bay marine users		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Shark Bay marine, dive and charter operators that may be potentially relevant persons for this EP. On 31 October 2023, Woodside emailed the Shark Bay marine users advising of the proposed activities (Record of Consultation, reference 1.63) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 15 December 2023, Woodside sent a reminder email to Shark Bay marine users following up on the proposed activity (Record of Consultation 2.19) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
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Amateur Fishermen’s Association of the NT

Summary of information provided and record of consultation:

- On 15 December 2023, Woodside emailed Amateur Fishermen’s Association of the NT advising of the proposed activity (Record of Consultation, reference 1.101) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 9 January 2024, Woodside sent a reminder email to Amateur Fishermen’s Association of the NT following up on the proposed activity (Record of Consultation, reference 2.20) and included a link to the Consultation Information Sheet on Woodside’s website.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Northern Territory Guided Fishing Industry Association (NTGFIA)

Summary of information provided and record of consultation:

- On 18 December 2023, Woodside telephoned NTGFIA advising of the proposed activity and seeking guidance on whether it was necessary to consult individual operators.
- On 18 December 2023, Woodside emailed NTGFIA with further information about the proposed activity (Record of Consultation, reference 1.104) and provided a Consultation Information Sheet, a close-up map of where the EMBA extends into NT waters (Record of Consultation, reference 1.105), and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 20 December 2023, NTGFIA responded thanking Woodside for the email. NTGFIA:

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<ul style="list-style-type: none"> - (1) Noted that given the very limited portion of NT waters impacted and the unlikelihood of its members operating in those areas, it had no comment at this time. • On 21 December 2023, Woodside responded thanking NTGFIA for its feedback. Woodside: <ul style="list-style-type: none"> - Noted the unlikelihood of members operating in those areas and that the NTGFIA therefore had no comment at this time. - Advised that on that basis, Woodside would not consult individual operators for this activity. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) NTGFIA advised that due to the limited portion of NT waters impacted and the unlikelihood of its members operating in those areas, it had no comment at this time. While feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside assessed NTGFIA’s feedback and noted the unlikelihood of its members operating in the EMBA and that NTGFIA therefore had no comment. Woodside advised NTGFIA that on that basis it would not consult individual operators.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required. No additional measures or controls are required.</p>

Peak Industry Representative bodies

National Energy Resource Australia (NERA)

Summary of information provided and record of consultation:

- On 5 October 2023, Woodside emailed NERA advising of the proposed activity (Record of Consultation, reference 1.55) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 30 October 2023, Woodside sent a reminder email to NERA following up on the proposed activity (Record of Consultation, reference 2.11) and included a link to the Consultation Information Sheet on Woodside’s website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Local government and community representative groups of organisations

Shire of Ravensthorpe

Summary of information provided and record of consultation:

- On 21 September 2023, Woodside emailed Shire of Ravensthorpe advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 18 October 2023, Woodside sent a reminder email to Shire of Ravensthorpe following up on the proposed activity (Record of Consultation, reference 2.2) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shark Bay Community Resource Centre

Summary of information provided and record of consultation:

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- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Shark Bay Community Resource Centre as a potentially relevant person for this EP.
- On 31 October 2023, Woodside emailed Shark Bay Community Resource Centre advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 15 December 2023, Woodside sent a reminder email to Shark Bay Community Resource Centre following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

RAC Monkey Mia Dolphin Resort

- Summary of information provided and record of consultation:**
- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified RAC Monkey Mia Dolphin Resort as a potentially relevant person for this EP.
 - On 31 October 2023, Woodside emailed RAC Monkey Mia Dolphin Resort advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
 - On 15 December 2023, Woodside sent a reminder email to RAC Monkey Mia Dolphin Resort following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Dirk Hartog Island

- Summary of information provided and record of consultation:**

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- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Dirk Hartog Island as a potentially relevant person for this EP.
- On 31 October 2023, Woodside emailed Dirk Hartog Island advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 15 December 2023, Woodside sent a reminder email to Dirk Hartog Island following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Shark Bay Aviation

- Summary of information provided and record of consultation:**
- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Shark Bay Aviation as a potentially relevant person for this EP.
 - On 31 October 2023, Woodside emailed Shark Bay Aviation advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
 - On 15 December 2023, Woodside sent a reminder email to Shark Bay Aviation following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Naturetime Tours

Summary of information provided and record of consultation:

- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Naturetime Tours as a potentially relevant person for this EP.
- On 31 October 2023, Woodside emailed Naturetime Tours advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 15 December 2023, Woodside sent a reminder email to Naturetime Tours following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Wula Gula Nyinda Eco Cultural Tours

Summary of information provided and record of consultation:

- On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Wula Gula Nyinda Eco Cultural Tours as a potentially relevant person for this EP.
- On 31 October 2023, Woodside emailed Wula Gula Nyinda Eco Cultural Tours advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 15 December 2023, Woodside sent a reminder email to Wula Gula Nyinda Eco Cultural Tours following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate,	No additional measures or controls are required.

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	Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
Shark Bay Coastal Tours		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified Shark Bay Coastal Tours as a potentially relevant person for this EP. On 31 October 2023, Woodside emailed Shark Bay Coastal Tours advising of the proposed activities (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 15 December 2023, Woodside sent a reminder email to Shark Bay Coastal Tours following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 18 October 2023, in an email to Woodside, Shire of Shark Bay identified [REDACTED] as a potentially relevant person. On 31 October 2023, Woodside emailed [REDACTED] advising of the proposed activity (Record of Consultation, reference 1.62) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 15 December 2023, Woodside sent a reminder email to [REDACTED] following up on the proposed activity (Record of Consultation, reference 2.19) and provided a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate,	No additional measures or controls are required.
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	Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
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Cocos Island Malay Community

Summary of information provided and record of consultation:

- On 15 September 2023, Woodside telephoned the Shire of Cocos (Keeling) Islands seeking how best to engage with the Cocos Island Malay Community.
- On 4 October 2023, Woodside telephoned the Shire following up on the phone call with regards to contacting the Cocos Island Malay Community.
- On 4 October 2023, Woodside emailed the Shire advising that it was seeking to establish Woodside’s relationship with the Cocos Island Traditional Owner group, the Cocos Malays.
- On 24 October 2023, Woodside emailed the Shire and offered to conduct a consultation meeting or provide additional information to the Cocos Island Malay Community.
- On 3 November, Woodside phoned the Shire to ask whether the Cocos Malays considered themselves relevant persons.
- On 6 November 2023, the Shire emailed Woodside and advised it would like to organise a meeting with Woodside and it would be good to include the Cocos Malay community.
- On 15 February 2024, Woodside held an online meeting with the Shire of Cocos (Keeling) Islands, in which the Shire confirmed it would like to arrange a further meeting regarding Woodside activities with other Shire representatives including members of the Malay community.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Malay Association of Christmas Island

Summary of information provided and record of consultation:

- On 25 October 2023, in an email to the Shire of Christmas Island, Woodside sought contact details for the Malay Association of Christmas Island.
- On 2 November 2023, Woodside sent a follow-up email regarding contacts for the Malay Association of Christmas Island and explaining its intention to provide an overview of Woodside Energy and its projects to the community and broader Shire.

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<ul style="list-style-type: none"> On 3 November 2023, Woodside had a phone call with Shire of Christmas Island to discuss consultation opportunities. During the discussion: <ul style="list-style-type: none"> The Shire noted it appreciated and supported Woodside's methodology for identifying and including First Nations stakeholder input. The Shire identified other Malay contacts that Woodside should consider including in future engagements where relevant. On 5 February 2024, Woodside phoned the Shire of Christmas Island following up on whether the Malay community wished to meet. The Shire advised the best point of contact for the Malay Association of Christmas Island and noted it was the same contact who had provided feedback to Woodside via the Shire's Fisheries Management Committee (FMC). On 12 February 2024, in an email to the FMC on separate feedback, Woodside noted that it was aware the FMC contact was also the best contact for the Malay association, and enquired as to whether consultation was requested with the Malay community. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims receive despite follow-up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No feedback, objections or claims received.

Research institutes and local conservation groups or organisations

Australian Institute of Marine Science (AIMS)

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed AIMS advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 28 September 2023, AIMS responded thanking Woodside for its email and confirming no AIMS activities were impacted by the ongoing venture.
- On 02 October 2023, Woodside responded thanking AIMS for its email.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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<p>(1) AIMS advised none of its activities were impacted by the ongoing venture.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted AIMS' advice that none of its activities would be impacted by the ongoing operations related to this EP.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on AIMS's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
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University of Western Australia (UWA)

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed UWA advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to UWA following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>No additional measures or controls are required.</p>

Western Australian Marine Science Institution (WAMSI)

Summary of information provided and record of consultation:

- On 13 September 2023, Woodside emailed WAMSI advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 16 October 2023, Woodside sent a reminder email to WAMSI following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Commonwealth Scientific and Industrial Research Organisation (CSIRO)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 13 September 2023, Woodside emailed CSIRO advising of the proposed activity (Record of Consultation, reference 1.3) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 October 2023, Woodside sent a reminder email to CSIRO following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Other non-government groups or organisations		
350 Australia (350A)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 September 2023, Woodside emailed 350A advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to 350A following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Greenpeace Australia Pacific (GAP)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 September 2023, Woodside emailed GAP advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to GAP following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Australia Conservation Foundation (ACF)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 September 2023, Woodside emailed ACF advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to ACF following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

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No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.
Australian Marine Conservation Society (AMCS)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 September 2023, Woodside emailed AMCS advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to AMCS following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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Conservation Council of Western Australia (CCWA)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 September 2023, Woodside emailed CCWA advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to CCWA following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
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	Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	
Sea Shepherd Australia (SSA)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 26 September 2023, Woodside emailed SSA advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 17 October 2023, Woodside sent a reminder email to SSA following up on the proposed activity (Record of Consultation, reference 2.1) and included a link to the Consultation Information Sheet on Woodside's website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).	No additional measures or controls are required.

Other
Member of the public
Summary of information provided and record of consultation:
<ul style="list-style-type: none"> (1) On 14 September 2023, a member of the public phoned Woodside's feedback line and raised concerns regarding the clarity of the map in the advertisement for consultation on this EP which appeared in the West Australian newspaper on 13 September 2023 (Record of Consultation, reference 3.1). On 14 September 2023, Woodside phoned the member of the public to discuss their concerns. Woodside: <ul style="list-style-type: none"> Advised it had reviewed the advertisement and the Operational Area and EMBA were clear in the map, and that the advertisement had also run in numerous other newspapers where the map was clear. Offered to email a copy of the map to the member of the public, however the offer was declined.

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Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) A member of the public phoned Woodside with concerns regarding the clarity of the map in a newspaper advertisement regarding consultation for this EP.</p>	<p>(1) Woodside assessed the member of the public's feedback and reviewed the map, which clearly showed the Operational Area and EMBA. Woodside offered to email a copy of the map to the member of the public however the offer was declined.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.1.16 of this EP).</p>	<p>(1) Not required.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the member of the public's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>

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1. Initial Consultation

1.1 Consultation Information Sheet



NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

CARNARVON BASIN, NORTH-WEST AUSTRALIA

Woodside consults relevant persons in the course of preparing an environment plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. This is the intended outcome of consultation.

Woodside's aim is to ensure activities are carried out in a manner that is consistent with the principles of ecologically sustainable development (ESD), by which the environmental impacts and risks of the activity are reduced to as low as reasonably practicable (ALARP) and of an acceptable level. Woodside want relevant persons whose functions, interests or activities that may be affected by the proposed activity to have the opportunity to identify themselves and provide feedback on our proposed activity, in accordance with the intended outcome of consultation.

Woodside is consulting for both the:

- Pyrenees Floating Production, Storage and Offloading (FPSO) and associated subsea infrastructure (Pyrenees Facilities) Operations EP; and
- Ngujima-Yin Floating Production, Storage and Offloading (FPSO) and associated subsea infrastructure (Ngujima-Yin Facilities) Operations EP, together as their operations and associated activities are similar, and located 13 km apart in adjacent title areas.

Overview

Woodside will submit a five year revision of the Operations EPs for the Pyrenees and Ngujima-Yin Facilities located in Commonwealth waters, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (regulations).

Operations began in 2008 for the Ngujima-Yin Facilities and 2010 for Pyrenees Facilities.

Activity Overview

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin Facilities.

The activities that will continue at the Pyrenees and Ngujima-Yin Facilities are:

- Routine oil production, crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place.

In addition to the above, the revised Ngujima-Yin Facility EP will also include:

- Production from an additional two wells via a subsea tieback to existing infrastructure and the operation of a new fuel gas flowline. The proposed wells will be located within the Operational Area (Figure 2). The location of the proposed flowline can be seen in Figure 2 and will originate from either the Pyrenees or Macedon field.

Drilling, construction and installation activities associated with the Ngujima-Yin tieback and fuel gas project will be subject to separate future EPs.

Stylised figures showing the existing Pyrenees Facilities are shown in Figure 3. Figure 4 shows the existing Ngujima-Yin Facilities. These figures are not to scale and are for illustration purposes.

Future decommissioning of infrastructure will be subject to separate future EPs.

Vessels

During normal operations, vessels will typically be limited to supply/support vessels and IMMR vessels. The vessel size and type will be dependent on the work scope. Vessels are not planned to anchor/moor on the seabed except in emergency situations. Offtake tankers will be used for offloading operations in both fields. It is anticipated vessels will operate 24 hours per day for the duration of activities.

Location and Operations

The Pyrenees FPSO is located about 45 km north of Exmouth, Western Australia, with the subsea facilities located within the Production Licenses WA-42-L and WA-43-L, and in water depths ranging from approximately 180 to 215 m (Figure 1). The Pyrenees FPSO is connected to the adjacent Macedon gas field located approximately 6 km southeast of the FPSO. The Macedon field is also operated by Woodside, and the connection allows gas to be supplied from the Macedon gas field for fuel gas on the FPSO, or produced via the Macedon subsea infrastructure to the onshore Macedon Gas Plant for domestic gas production.

The Ngujima-Yin FPSO is located about 57 km north of Exmouth, Western Australia, with the subsea facilities located within Production Licenses WA-28-L, WA-59-L and Pipeline License WA-28-PL, in water depths ranging from approximately 340 to 850 m (Figure 2).

Communication with mariners

The locations of the Pyrenees FPSO and the Ngujima-Yin FPSO as well as associated subsea infrastructure are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. The Ngujima-Yin FPSO petroleum safety zone is measured from the riser turret mooring at the bow of the vessel. Vessels are not permitted within the exclusion zone without permission. In addition, a 2.5 nm (4.6 km) radius cautionary zone is also marked on nautical charts around both FPSOs.

Assessment

Woodside has undertaken an assessment of the potential impacts and risks to the environment, as well as to relevant persons arising from the planned activities and unplanned events. This assessment considers timing, duration and location of activities and events. A number of mitigation and management measures will be implemented and are summarised in Table 3. Further details will be provided in each EP being revised to manage proposed activities.

In preparing the EPs, our intent is to minimise environmental, social or cultural impacts associated with the proposed activities, and Woodside are seeking any interest or comments you may have to inform our decision making.



CONSULTATION INFORMATION SHEET

CONSULTATION

September 2023

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

CARNARVON BASIN, NORTH-WEST AUSTRALIA

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Assessment

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In preparing the EPs, our intent is to minimise environmental, social or cultural impacts associated with the proposed activities, and Woodside are seeking any interest or comments you may have to inform our decision making.

1 Pyrenees and Ngujima-Yin FPSO Facility Operations Environment Plan | September 2023

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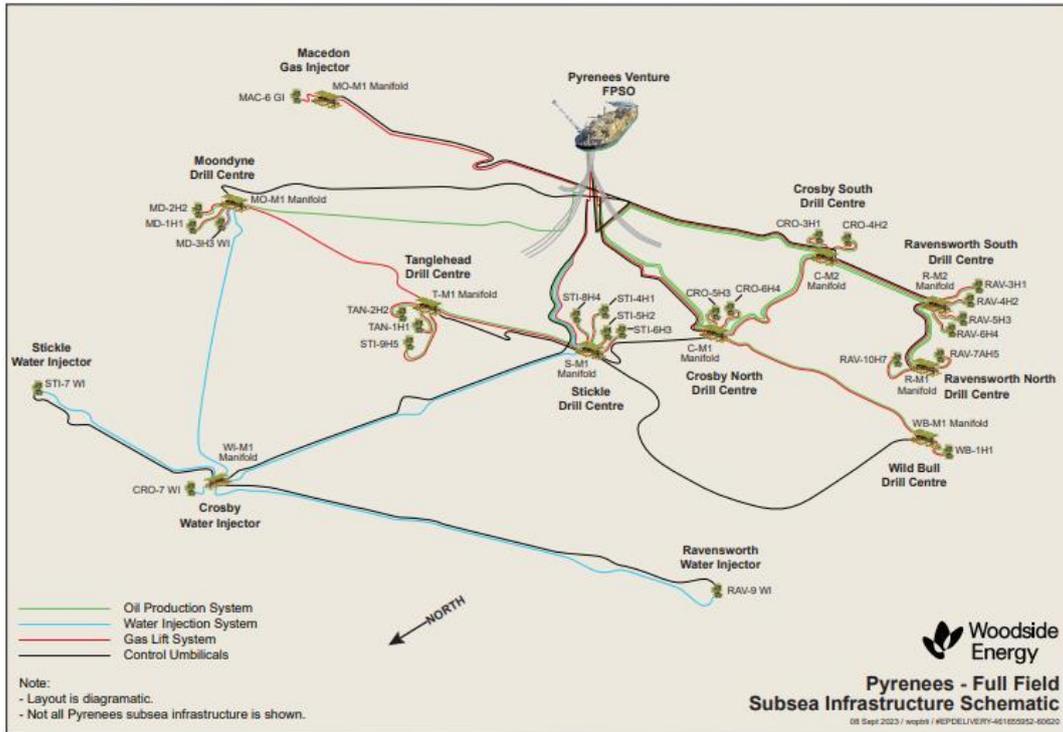


Figure 3. Overview of subsea infrastructure layout associated with the Pyrenees FPSO (not to scale)

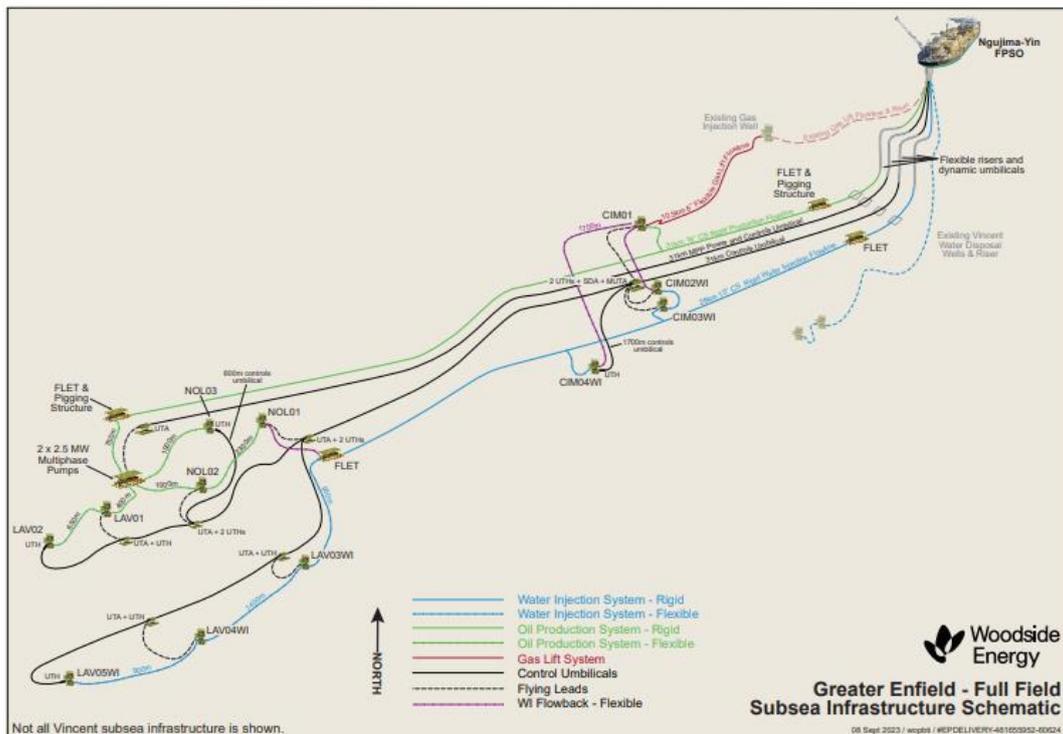


Figure 4. Overview of the subsea infrastructure layout associated with the Ngujima-Yin FPSO (not to scale)

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Table 1. Activity summary

	Pyrenees Facility Operations Environment Plan	Ngujima-Yin Facility Operations Environment Plan
Facility type	Floating Production Storage and Offloading (FPSO) and associated subsea infrastructure	Floating Production Storage and Offloading (FPSO) and associated subsea infrastructure
Production License Areas	WA-42-L and WA-43-L	WA-28-L, WA-59-L and WA-28-PL
Approximate water depth	Ranging from approximately 180 to 215 m	Ranging from approximately 340 to 850 m
Commencement date	Production Commenced: 2010	Production Commenced: 2008
Approximate estimated duration	Routine Operations: Ongoing Estimated End of Field Life: 2035	Routine Operations: Ongoing Estimated End of Field Life: 2028
Infrastructure connected to the facility	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 midwater arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible Flowlines and Jumpers • Subsea support structures 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly • Flexible Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures <p>Potential new infrastructure that could be installed in the next 5 years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Oil tanker • IMMR support vessels including multi-purpose support vessels and dive support vessels 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offloading tanker • IMMR support vessels including multi-purpose support vessels
Operational Areas and Exclusion zones	<p>Operational Area comprises:</p> <ul style="list-style-type: none"> • Pyrenees FPSO and an area extending out to 1500 m to allow for offtake activities • Pyrenees subsea infrastructure, including wells, flowlines and associated infrastructure, and an area within 1500 m around the infrastructure <p>Exclusion Zones:</p> <ul style="list-style-type: none"> • A petroleum safety zone, comprising the length of the FPSO which is 260 m plus a 500 m safety zone, which extends to a distance of 760 m radius from the internal Turret of the Pyrenees FPSO 	<p>Operational Area comprises:</p> <ul style="list-style-type: none"> • Ngujima-Yin FPSO and an area extending out to 1500 m to allow for offtake activities • Ngujima-Yin subsea infrastructure including wells, flowlines, a pipeline and associated infrastructure, and an area within 1500 m around the infrastructure. • An area within 1500 m around the proposed route of a subsea flowline either from Pyrenees or from Macedon <p>Exclusion Zones:</p> <ul style="list-style-type: none"> • A 500 m petroleum safety zone around the Ngujima-Yin FPSO
Distance to nearest town from FPSO	45 km north of Exmouth, Western Australia	57 km north of Exmouth, Western Australia
Distance to nearest marine park/nature reserve from FPSO	<p><i>Pyrenees FPSO:</i></p> <ul style="list-style-type: none"> • -14 km from the northern boundary of the Commonwealth Ningaloo Marine Park 	<p><i>Ngujima-Yin FPSO:</i></p> <ul style="list-style-type: none"> • -26 km from the northern boundary of the Commonwealth Ningaloo Marine Park

Table 2. Approximate Locations

Structure	Approximate Water depth	Approximate Latitude	Approximate Longitude	Petroleum Titles
Pyrenees Facility FPSO				
Pyrenees Facility	200	21° 32' 28.12671822" S	114° 06' 58.55946505" E	WA-42-L
Production wells				
Crosby - 3H1	204	21° 32' 43.06267192" S	114° 05' 42.50447160" E	WA-42-L
Crosby - 4H2	204	21° 32' 42.98265112" S	114° 05' 40.46821800" E	WA-42-L
Crosby - 5H3	202	21° 31' 44.49422152" S	114° 06' 05.84823600" E	WA-42-L
Crosby - 6H4	202	21° 31' 44.59731472" S	114° 06' 03.83841720" E	WA-42-L
Moodyne-1H1	191	21° 32' 05.45036872" S	114° 09' 17.97139800" E	WA-42-L
Moodyne-2H2	191	21° 32' 05.47982032" S	114° 09' 19.71615240" E	WA-42-L
Ravensworth - 3H1	209	21° 32' 19.94805832" S	114° 05' 03.26322240" E	WA-43-L
Ravensworth - 4H2	209	21° 32' 18.92186752" S	114° 05' 03.37507800" E	WA-43-L
Ravensworth - 5H3	208	21° 32' 17.27543992" S	114° 05' 04.40305800" E	WA-43-L
Ravensworth - 6H4	208	21° 32' 16.56928912" S	114° 05' 04.34562360" E	WA-43-L
Ravensworth - 7H5	210	21° 31' 48.52389952" S	114° 05' 05.83185840" E	WA-42-L
Ravensworth - 8H6	210	21° 31' 46.28295712" S	114° 05' 06.99909360" E	WA-42-L
Ravensworth- 10H7	209	21° 31' 48.36774232" S	114° 05' 09.24021240" E	WA-42-L
Stickle - 4H1	199	21° 31' 23.67887032" S	114° 06' 35.28941400" E	WA-42-L
Stickle - 5H2	199	21° 31' 22.04032312" S	114° 06' 33.72709320" E	WA-42-L
Stickle - 6H3	199	21° 31' 21.55597912" S	114° 06' 33.11816040" E	WA-42-L
Stickle - 8H4	198	21° 31' 23.96606752" S	114° 06' 37.27612440" E	WA-42-L
Stickle-9H5	195	21° 31' 09.48247552" S	114° 07' 23.40927120" E	WA-42-L
Tanglehead-1H1	195	21° 31' 21.41918992" S	114° 07' 26.10295680" E	WA-42-L
Tanglehead-2H2	195	21° 31' 21.58738192" S	114° 07' 27.71560200" E	WA-42-L
Wildbull-1H1	212	21° 31' 13.20441112" S	114° 05' 06.05845680" E	WA-42-L
Gas Injection Well				
Macedon - 6	181	21° 34' 03.49066432" S	114° 10' 00.84305640" E	WA-42-L
Water Injection Well				
Crosby - 7WI	197	21° 29' 57.59613112" S	114° 07' 36.30057960" E	WA-42-L
Moodyne-3WI	191	21° 32' 03.80817832" S	114° 09' 18.00202680" E	WA-42-L
Ravensworth - 9WI	213	21° 30' 09.55413592" S	114° 05' 43.14401520" E	WA-42-L
Stickle - 7WI	191	21° 30' 09.27344032" S	114° 08' 41.61371280" E	WA-42-L

Environment That May Be Affected (EMBA)

The environment that may be affected (EMBA) is the largest spatial extent where the Pyrenees Facility Operations activities and the Ngujima-Yin Facility Operations activities could potentially have an environmental consequence (direct or indirect). The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these EPs, is determined by modelling the highly unlikely event of a hydrocarbon release. The worst-case credible spill scenario for these EPs is a release from a loss of well control or a vessel collision with the FPSO with enough force to breach the hull, releasing crude to the environment.

The EMBA does not represent the extent of the predicted impact of the highly unlikely unplanned release of hydrocarbons. Rather, the EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release. This means in the highly unlikely event a hydrocarbon release does occur, the whole EMBA will not be affected - the specific and minimal part of the EMBA that is affected will only be known at the time of the release.

Figure 5 displays the EMBA for the Ngujima-Yin EP and Figure 5 displays the EMBA for the Pyrenees EP.

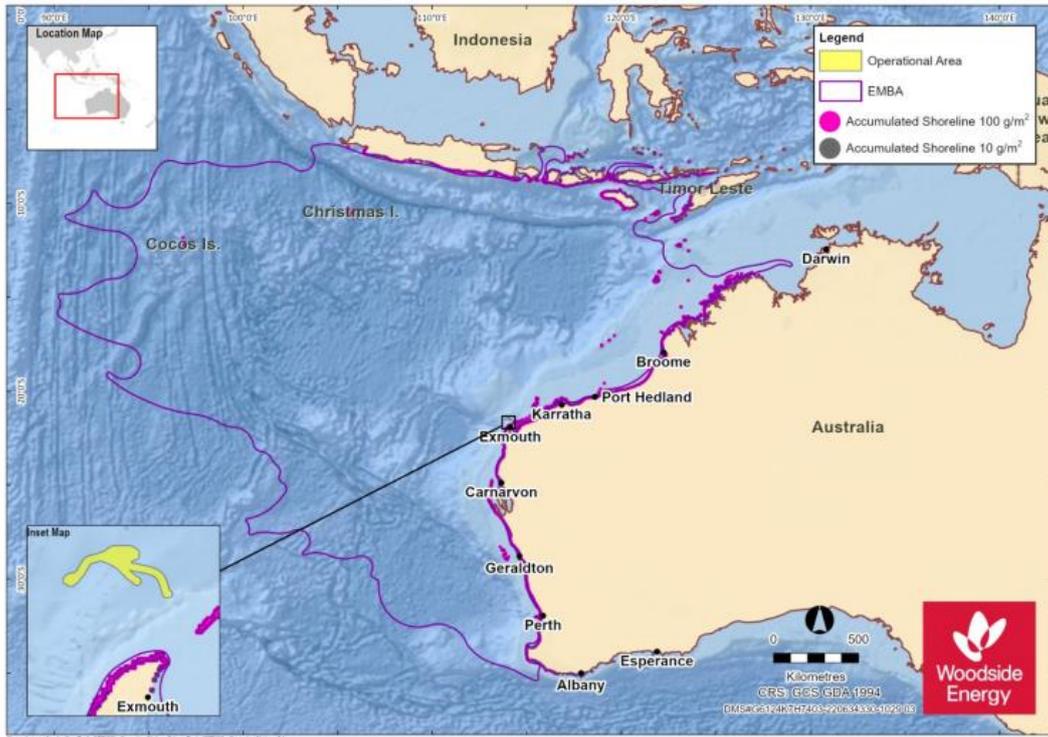


Figure 5. Ngujima-Yin FPSO Operations Environment that May Be Affected (EMBA) by an unplanned hydrocarbon release from an accident/ incident during the Petroleum Activities Program.

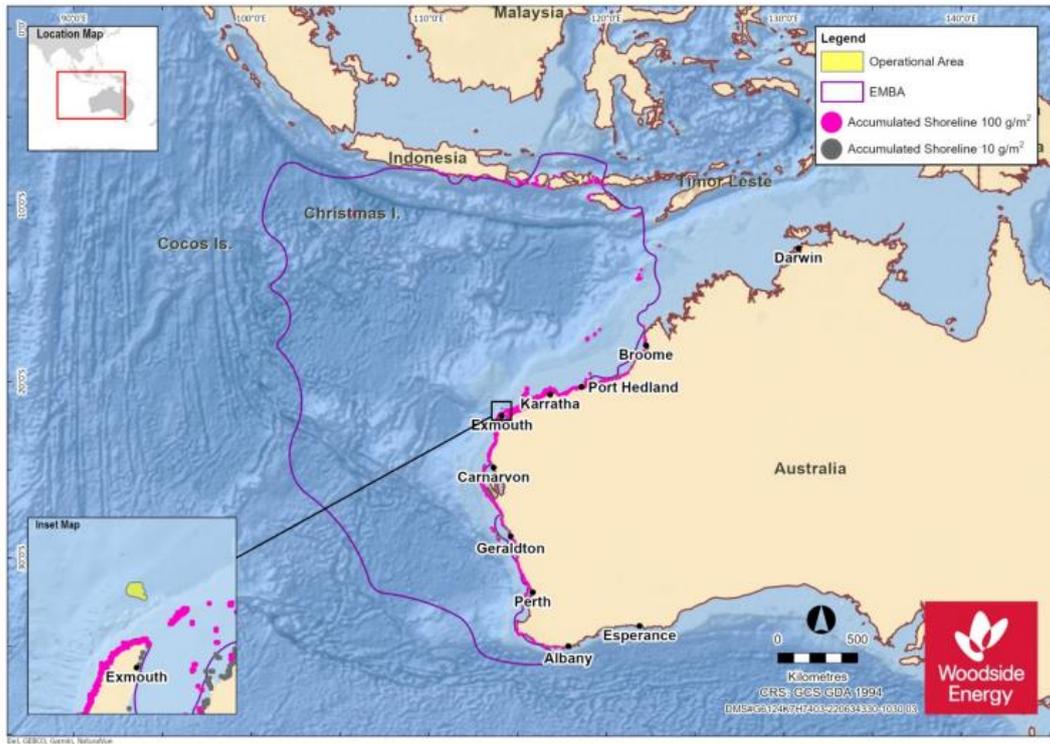


Figure 6. Pyrenees FPSO Operations Environment that May Be Affected (EMBA) by an unplanned hydrocarbon release from an accident/incident during the Petroleum Activities Program.

Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the environment arising from the Pyrenees and Ngujima-Yin facilities operations activity, including IMMR activities and other contingent activities. A number of mitigation and management measures for the activity are outlined in Table 4. Further details will be provided in the EPs.

Table 4. Summary of key risks and/or impacts and preliminary management measures for the Activity*

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/ Risks	Proposed Mitigation and/or Management Measure
Planned Activities (Routine and Non-routine)			
Physical Presence: Interaction with other Marine Users, Cultural Values & Heritage	<ul style="list-style-type: none"> The presence of FPSOs, other vessels and subsea infrastructure has the potential to exclude and/or displace other users from the Pyrenees or Ngujima-Yin Petroleum Safety Zone and Operational Areas respectively. Physical presence of project vessels and activities may have potential to impact cultural values and heritage. 	<ul style="list-style-type: none"> Localised displacement of commercial fishing from the Operational Area. Displacement of recreational fishing activity is likely to be low level due to the distance from boating facilities, lack of natural attractions (e.g. reefs or shoals) and water depth of Operational Area. The presence of support vessels could cause temporary disruption to commercial shipping. No recognised shipping lanes overlap the Operational Areas. Tourism and recreation within the Operational Areas is expected to be infrequent due to the lack of emergent features or natural attractions (eg. reefs or shoals) and water depth. 	<ul style="list-style-type: none"> Vessels adhere to regulatory requirements for navigational safety. Maintain a permanent Petroleum Safety Zone around the FPSO. Notify Australian Hydrographic Office (AHO) of locations of new permanent infrastructures to enable update of maritime charts. Consult with relevant persons so that they are informed of the proposed activities. FPSO collision prevention system implemented to alert marine vessels of the facility location. Woodside will actively support the capacity of Traditional Custodians for ongoing engagement and consultation on environment plans, for the purpose of avoiding impacts to cultural heritage values.
Physical Presence: Seabed disturbance	<p>Seabed disturbance may result from the following activities:</p> <ul style="list-style-type: none"> Presence of FPSO, wells and subsea infrastructure (including moorings) modifying marine habitats. Subsea operations, inspection, maintenance and repair activities resulting. Anchoring as required in emergency conditions. 	<ul style="list-style-type: none"> Localised modification of seabed habitat within the Operational area through seabed scouring around subsea infrastructure or formation of artificial reef. The infrastructure provides hard substrate for marine organisms and a fouling community. This may result in local increase biological productivity and diversity within the Operational Area. During IMMR activities, a localised and temporary decline in water quality due to an increase of suspended sediment concentration and sediment deposition may occur. 	<ul style="list-style-type: none"> Monitoring and maintenance of all subsea infrastructure completed as per IMMR process. Any new subsea infrastructure to have an as-left survey completed and location to be recorded.
Routine Light Emissions: Light Emissions from FPSO, Vessel Operations and Operational Flaring	<ul style="list-style-type: none"> The FPSOs, vessels (including IMMR) and Remote Operation Vehicles (ROV) will use external lighting to conduct safe operations. Light emissions from FPSO during flaring. 	<ul style="list-style-type: none"> Light emissions have the potential to temporarily affect fauna such as fish, marine reptiles and seabirds by influencing changes in their behaviour or impacting orientation in close proximity to the FPSOs or vessels. 	<ul style="list-style-type: none"> Lighting limited to the minimum required for navigational and safety requirements, except for emergency events. Flare management through reinjection to reduce flare intensity. Implementation of appropriate measures based on recommendations of the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds.

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Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure
Routine Acoustic Emissions: Generation of Noise During Routine Operations	<p>Noise generated within the Operational Areas from:</p> <ul style="list-style-type: none"> FPSOs and associated subsea infrastructure; Vessels; Helicopters; and IMMR activities (e.g. ROVs, AUVs, side scan sonar, echo sounder, vessels on DP). 	<ul style="list-style-type: none"> Elevated underwater noise can potentially disturb marine fauna, including marine mammals, turtles, and fish through behavioural effects, masking or interfering with other biologically important sounds (echolocation, vocal communication, signals, and sounds produced by predators or prey) or as direct physical damage. The migration corridor (Biologically Important Area (BIA)) for pygmy blue whales and humpback whales overlaps with a small portion of the Operational Areas and may expose the mammals to underwater noise during seasonal migrations. Given the underwater noise levels and low likelihood of the whales being present in the Operational Area, the potential for impact is considered highly unlikely. 	<ul style="list-style-type: none"> Comply with regulatory requirements for interactions with marine megafauna in attempt to prevent adverse interactions.
Routine and Non-routine Atmospheric and Greenhouse Gas (GHG) Emissions	<ul style="list-style-type: none"> Atmospheric emission and GHG emissions generated through fuel combustion from FPSO, vessels and helicopters, FPSO operational flaring and fugitive emissions (e.g. compressors, generators etc.). 	<ul style="list-style-type: none"> Emissions could result in temporary, localised reductions in air quality in the immediate vicinity. Contribution to GHG emissions. 	<ul style="list-style-type: none"> Comply with regulatory requirements for GHG emissions and reporting. Monitoring, review and optimisation of facility fuel and flaring emissions where possible.
Routine and Non-Routine Discharges: Subsea Operations and Activities	<ul style="list-style-type: none"> Discharge of subsea control fluids from the actuation of valves or during subsea operations and activities. Potential discharge of hydrocarbons or chemicals remaining in subsea pipework and equipment due to subsea intervention works (including pigging) and/or IMMR activities. 	<ul style="list-style-type: none"> Localised, short-term decrease in water quality around the subsea system within Operational Area due to relatively small volumes discharged and rapid dilution of release. Any impacts to fauna should be minor and the potential for bioaccumulation in organisms or accumulation in sediments is considered negligible. The Operational Area overlaps Key Ecological Features (KEFs), namely the Continental Slope Demersal Fish Communities and Canyons Linking the Cuvier Abyssal Plain and the Cape Range Peninsula. Discharges are not likely to have impacts to the ecosystem function of the KEFs. 	<ul style="list-style-type: none"> Marine discharges managed according to regulatory requirements. Chemicals selected with lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. Subsea infrastructure flushed and isolated where practicable during IMMR activities.
Routine and Non-routine Discharges: Utility Systems and Drains	<ul style="list-style-type: none"> Discharge of sewage, grey water and putrescible waste from FPSOs or vessels to the marine environment. Discharge of deck, bilge and drain water from FPSOs or vessels to marine environment. 	<ul style="list-style-type: none"> Potential slight, short-term, localised ongoing increase in nutrients and oxygen demand around FPSOs and vessels with no lasting effect. Potential slight, short-term, localised ongoing decrease in water quality at discharge location. Discharges are not likely to impact on the overlapping KEFs in the Operational Areas. 	<ul style="list-style-type: none"> Marine discharges managed according to regulatory requirements. Chemicals selected with lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. Onboard treatment and open / closed draining systems are monitored and maintained.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/ Risks	Proposed Mitigation and/or Management Measure
Routine and Non-Routine Discharges: FPSO production waste (Pyrenees only)	<ul style="list-style-type: none"> Discharge of production waste from Pyrenees FPSO (produced water). Note: All produced water from Ngujima-Yin FPSO is reinjected to the reservoir and discharge is not permitted in this EP. 	<ul style="list-style-type: none"> Overboard discharges causing localised changes in water quality may result in potential environmental impacts to biota within the Operational Areas 	<ul style="list-style-type: none"> Marine discharges managed according to regulatory requirements. Continuous measurements and monitoring of Produced Water (PW) Systems. Diversion of PW if measurements exceed acceptable baseline levels. Chemicals selected with lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. Maximise the reinjection of produced water.

Unplanned Events (Accidents / Incidents)

Unplanned Hydrocarbon or Chemical Release: Hydrocarbon release during Bunkering / Refuelling and Chemical release during transfer, storage, and use	<ul style="list-style-type: none"> Accidental spill of hydrocarbons (diesel) to the marine environment during bunkering / refuelling. Chemical release to marine environment during transfer, storage and use. 	<ul style="list-style-type: none"> Potential to cause localised and temporary changes to water quality from a marine diesel or chemical spill. Marine diesel is a relatively volatile, nonpersistent hydrocarbon with up to approximately 40% evaporating within the first 24 hours for a surface spill. Potential impacts across the EMBA may include injury/mortality to seabirds, fish, plankton, marine mammals and marine reptiles. Mortality of larger fauna is not expected to occur. No impacts to KEFs are expected, as these KEFs are mainly benthic and will therefore not be affected by a small surface release. 	<ul style="list-style-type: none"> Vessels compliant with regulatory guidelines for safe operations including bunkering / refuelling and emergency response. Chemicals selected with lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. Safe storage of chemicals with spill clean-up equipment available. Equipment for bunkering / refuelling regularly inspected / maintained and replaced as required. Reporting of unplanned releases.
Unplanned Hydrocarbon Release: Loss of Hazardous and Non-Hazardous Waste / Equipment	<ul style="list-style-type: none"> Incorrect disposal or accidental discharge of non-hazardous and hazardous waste / equipment from FPSOs or vessels to the marine environment. 	<ul style="list-style-type: none"> The potential impacts of waste accidentally discharged to the marine environment include localised direct pollution and contamination of the environment, and secondary impacts potentially leading to injury and/or death to marine fauna (e.g. entanglement or ingestion). The temporary or permanent loss of waste materials/equipment into the marine environment is not likely to have a significant environmental impact, based on the location of the Operational Area, the types, size and frequency of waste that could occur and species present. 	<ul style="list-style-type: none"> Compliance with regulatory requirements for the prevention of marine pollution and handling of hazardous wastes (i.e. Marine Orders 95 and 94). Compliance with Waste Management Plans for the storage, handling and transportation of wastes. Attempted recovery of dropped waste objects where safe and practicable.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/ Risks	Proposed Mitigation and/or Management Measure
Physical Presence (Unplanned): Vessel Collision with Marine Fauna	<ul style="list-style-type: none"> Vessel movements have the potential to result in collisions between the vessel (hull and propellers) and marine fauna. 	<ul style="list-style-type: none"> Vessel interaction presents a potential threat to marine mammals, marine reptiles and fish, sharks and rays. Whilst a portion of both Operational Areas overlap the pygmy blue whale and humpback whale migration BIAs, this overlap represents a very small proportion of the BIA. Given the slow speeds at which project vessels generally operate, interactions with whales are considered unlikely. Whale shark presence in the Operational Areas is likely during their migrations to and from Ningaloo Reef. Whale sharks are only expected in the area for short durations and their presence would be migratory. The Pyrenees Operational Area overlaps BIAs for sensitive turtle areas but given the water depth and absence of potential for nesting, turtles are likely to only use the area infrequently for transit. Vessel activities are unlikely to result in a consequence greater than short-term disruption to fauna, with no expected impact on critical habitat. 	<ul style="list-style-type: none"> Comply with regulatory requirements for interactions (e.g., EPBC Regulations 2000 - Part 8 Division 8.1) with marine fauna to reduce the likelihood of a collision occurring.
Physical Presence (Unplanned): Introduction of Invasive Marine Species (IMS)	<ul style="list-style-type: none"> Vessels transiting to the Operational Area may be subject to marine fouling whereby organisms attach to the vessel hull. Organisms can also be drawn into ballast tanks during onboarding of ballast water. IMS can also be present as biofouling on subsea structures. 	<ul style="list-style-type: none"> Transfer of IMS from infected vessels to the Operational Areas and establishment on the seafloor or subsea infrastructure is not likely due to the deep offshore waters which are not conducive to the settlement and establishment of IMS. There is potential for IMS to transfer from infected vessels and attach to FPSO or turret. Risk is considered remote that IMS will secondarily transfer from the FPSO or turret to another vessel given the offshore open ocean environment. 	<ul style="list-style-type: none"> Ballast water and biofouling will be managed according to regulatory requirements, including the Australian Ballast Water Management Requirements, and the Australian Biofouling Management Requirements, as applicable. Woodside's IMS risk assessment process applied to project vessels and immersible equipment entering the Operational Areas. Inspection of FPSOs by IMS Inspector prior to return from international sail away.
Unplanned Hydrocarbon Release: Subsea Infrastructure	<ul style="list-style-type: none"> Accidental release of hydrocarbons resulting from loss of containment of subsea infrastructure. 	<p>Potential significant impacts to marine environment including:</p> <ul style="list-style-type: none"> Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential interference with or displacement of other sea users including fisheries and tourism and recreation. 	<ul style="list-style-type: none"> Compliance with Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case. The Subsea Infrastructure design includes a range of measures that specifically aid in minimising the risk of external damage. Woodside management system implemented during operations to maintain infrastructure integrity, communication systems and safety instrumented systems to an acceptable standard. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Maintain a permanent Petroleum Safety Zone around FPSO. Reporting of unplanned releases.

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Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure
Unplanned Discharges: Loss of Well Containment	<ul style="list-style-type: none"> Accidental release of hydrocarbons to the marine environment due to loss of well containment. 	<ul style="list-style-type: none"> Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential interference with or displacement of other sea users including fisheries, tourism and recreation. 	<ul style="list-style-type: none"> Compliance with Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011: WOMP, which describes the well design and barriers to be used to prevent a loss of well control and to Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Maintain Well Safety Instrumented Systems to detect and act on events that have potential to cause a hydrocarbon event. Reporting of unplanned releases.
Unplanned Hydrocarbon Release: Vessel Collision	<ul style="list-style-type: none"> Vessel collision involving a project vessel or third-party vessel, resulting in the release of marine diesel fuel if the collision has enough force to penetrate the vessel hull in the exact fuel location. 	<ul style="list-style-type: none"> In the highly unlikely event of a vessel collision it may cause a release of hydrocarbons, impacts to water quality and marine ecosystems could occur. Marine diesel is a relatively volatile, nonpersistent hydrocarbon with up to approximately 40% evaporating within the first 24 hours for a surface spill. Potential impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Potential disruption to marine fauna, including protected species. Potential interference with or displacement of other sea users including fisheries, tourism and recreation. 	<ul style="list-style-type: none"> Compliance with regulatory requirements for safe vessel operations (i.e. Marine Orders 21, 27 and 30). Maintain a permanent Petroleum Safety Zone around FPSO. Management plans for simultaneous operations in place when working in vicinity of other Woodside operations / activities. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Reporting of unplanned releases.
Unplanned Hydrocarbon Release: Turret Operations	<ul style="list-style-type: none"> Release of hydrocarbons from turret operations, including spill from failure to connect / disconnect from turret, failure of mooring system, accidental leaks from storage and equipment, including ROVs. 	<ul style="list-style-type: none"> Potential localised decline in water quality caused by accidental pollution/contamination. 	<ul style="list-style-type: none"> Implemented Turret Mooring System Connect and Disconnect Procedure. Monitor the mooring system to identify potential issues with a mooring line. Management of wells in accordance with Well Integrity Management System to prevent loss of well control and associated overpressure of turret equipment. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Reporting of unplanned releases.

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Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts/Risks	Proposed Mitigation and/or Management Measure
Unplanned Hydrocarbon Release: Offtake Operations	<ul style="list-style-type: none"> Release of hydrocarbons from FPSO offloading equipment to the marine environment and atmosphere during offloading / transferring operations. 	<ul style="list-style-type: none"> Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential interference with or displacement of other sea users including fisheries and tourism and recreation 	<ul style="list-style-type: none"> Compliance to Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case. Implemented offloading procedures and all offtake tankers vetted to ensure they meet Woodside requirements. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Maintain a permanent Petroleum Safety Zone around FPSO. Reporting of unplanned releases.
Unplanned Hydrocarbon Release: Loss of Containment of Crude Oil from FPSO	<ul style="list-style-type: none"> Release of hydrocarbons from FPSO to the marine environment due to loss of containment from bulk storage, topsides processing equipment, non-process topsides equipment or loss of structural integrity. 	<ul style="list-style-type: none"> Long-term impacts to sensitive nearshore areas of offshore islands and coastal shorelines. Disruption to marine fauna, including protected species. Potential interference with or displacement of other sea users including fisheries and tourism and recreation. 	<ul style="list-style-type: none"> Compliance to Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009: Accepted Safety Case. Maintain a permanent Petroleum Safety Zone around FPSO. Maintenance of facility as per Performance Standard requirements. Implemented Emergency Response and Spill Management Plans and maintained environmental response equipment. Reporting of unplanned releases.

**These mitigation and management measures are subject to change through the consultation and subsequent assessment process and may not represent content in the publicly available EP or in the final plan once accepted.*

Feedback

Woodside consults relevant persons in the course of preparing Environment Plans to notify them of the activity and to obtain relevant feedback to inform its planning for proposed petroleum activities in the region.

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **27 October 2023** via:

E: Feedback@woodside.com

Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:

www.woodside.com/sustainability/consultation-activities.

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in our Environment Plan for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) and support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

1.2 Summary Consultation Sheet

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CONSULTATION

SUMMARY INFORMATION SHEET

September 2023

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

CARNARVON BASIN, NORTH-WEST AUSTRALIA

When preparing an environment plan (EP), Woodside needs to notify relevant persons and obtain their input. This helps confirm current measures or identify additional measures, that may need to be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. Woodside wants to give relevant persons whose functions, interests or activities may be affected by the proposed activity the opportunity to identify themselves and provide feedback on our proposed activity.

This summary information sheet provides a high-level overview of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees FPSO Operations environment plans. Further details, including an assessment of the potential impacts and risks to the environment, as well as mitigation and management measures, are available within the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plan Consultation Information Sheet (September 2023) which can be found at:

www.woodside.com/sustainability/consultation-activities

Overview

Woodside plans to submit a five-year revision of the Operations EPs for the Pyrenees and the Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The Pyrenees FPSO and associated production infrastructure is located in water depths ranging from -180 m to 215 m, in Commonwealth waters around 45 km north of Exmouth, Western Australia. Crude oil is produced on the Pyrenees FPSO from the Ravensworth, Crosby, Stickle, Tanglehead, Wild Bull and Moondyne reservoirs.

The Ngujima-Yin FPSO and associated production infrastructure is located in water depths ranging from -340 m to 850 m, in Commonwealth waters around 57 km north of Exmouth, Western Australia. Crude oil is produced on the Ngujima-Yin FPSO from the Vincent reservoir and the Greater Enfield development, which includes the Norton-over-Laverda, Laverda Canyon Reservoir and Cimatti fields.

Crude oil from both operations will be offloaded using Offtake Tankers. Other activities that will occur include surveys, inspection, maintenance, monitoring and repair activities, and other contingent activities.

Maps showing the location of the activities are provided below.

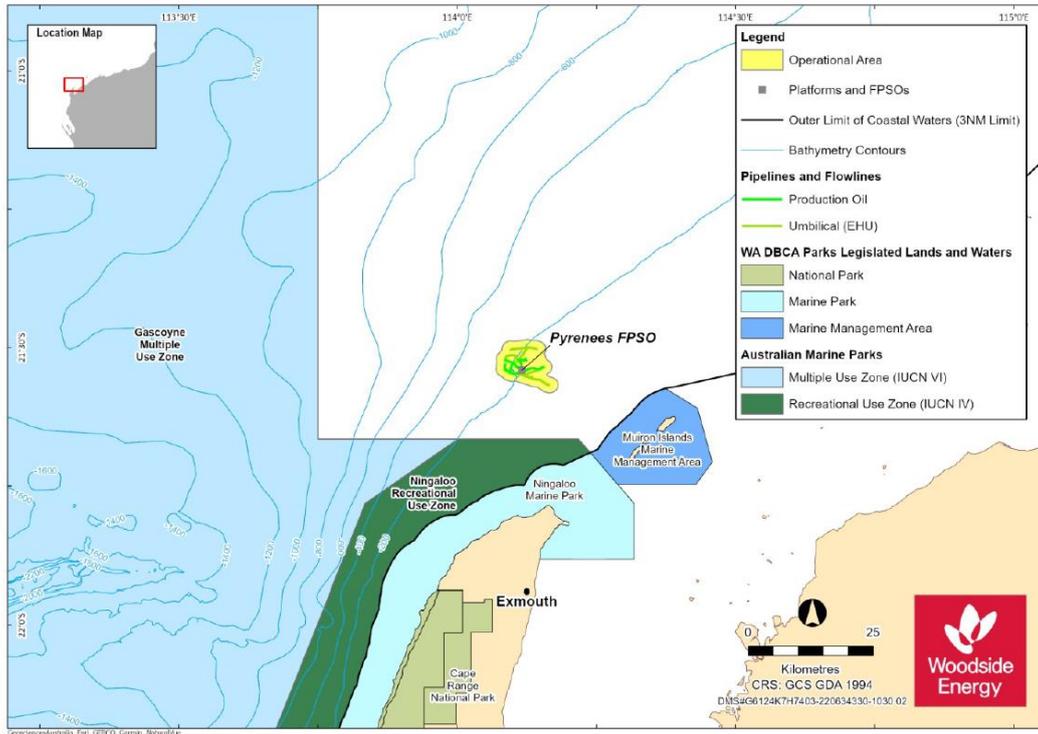


Figure 1. Pyrenees FPSO Location and Operational Area

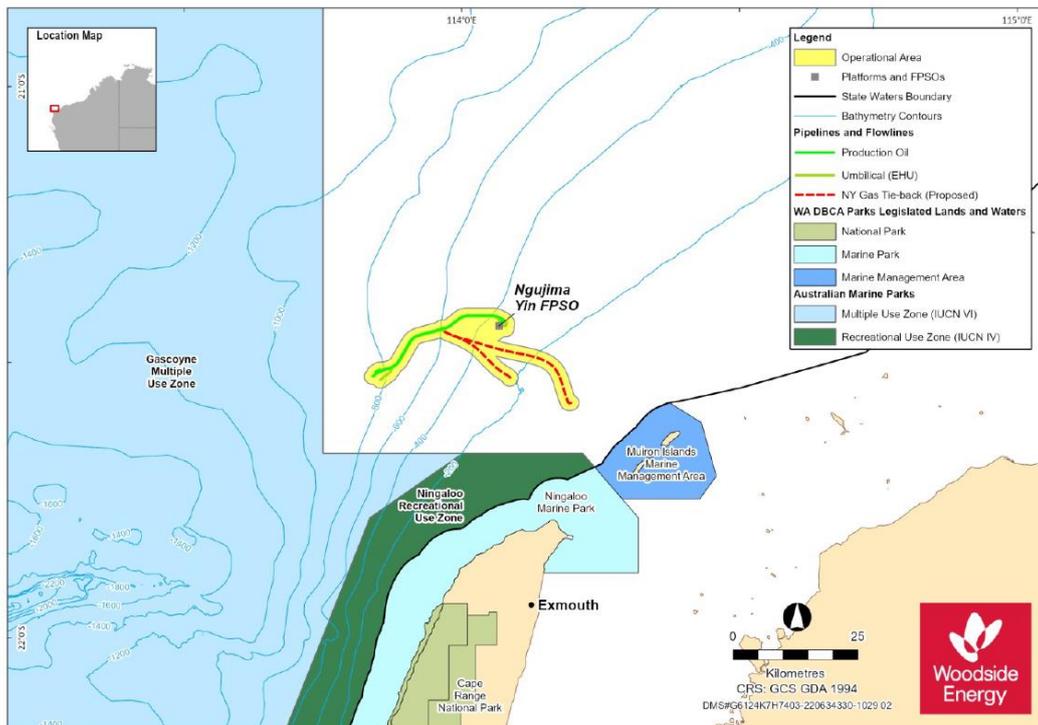


Figure 2. Ngujima-Yin FPSO Location and Operational Area

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Work Method

Key features of the Floating Production Storage and Offloading (FPSO) facilities include:

- Floating hull with integrated storage tanks.
- Connected to the seabed and subsea production system through turret mooring system which includes risers, umbilicals and chain mooring systems illustrated schematically in Figure 3 and 4.
- Above the water there will be supporting processing systems and equipment, flare systems, utilities, cranes, laydown and storage areas, utility buildings, living quarters and helideck.
- The FPSO provides oil processing to make the oil suitable for offloading to an Offtake Tanker.

- For Ngujima-Yin, two potential future development activities may include production from an additional two wells via a subsea tieback to existing subsea infrastructure and the operation of a new fuel gas flowline. Drilling, construction and installation activities associated with the tieback and fuel gas project will be subject to separate future EPs.

During normal operations, vessels will typically be limited to supply/support vessels and Inspection, Monitoring, Maintenance and Repair (IMMR) vessels. Offtake tankers will be used for offloading operations in both fields. It is anticipated vessels will operate 24 hours per day for the duration of activities.



Summary of key activities includes:

- Routine production operations involve the offloading of crude oil to Offtake Tankers.
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.
- Other activities include surveys, inspection, maintenance, monitoring, and repair (IMMR) activities on the FPSO and subsea infrastructure, and other contingent activities.

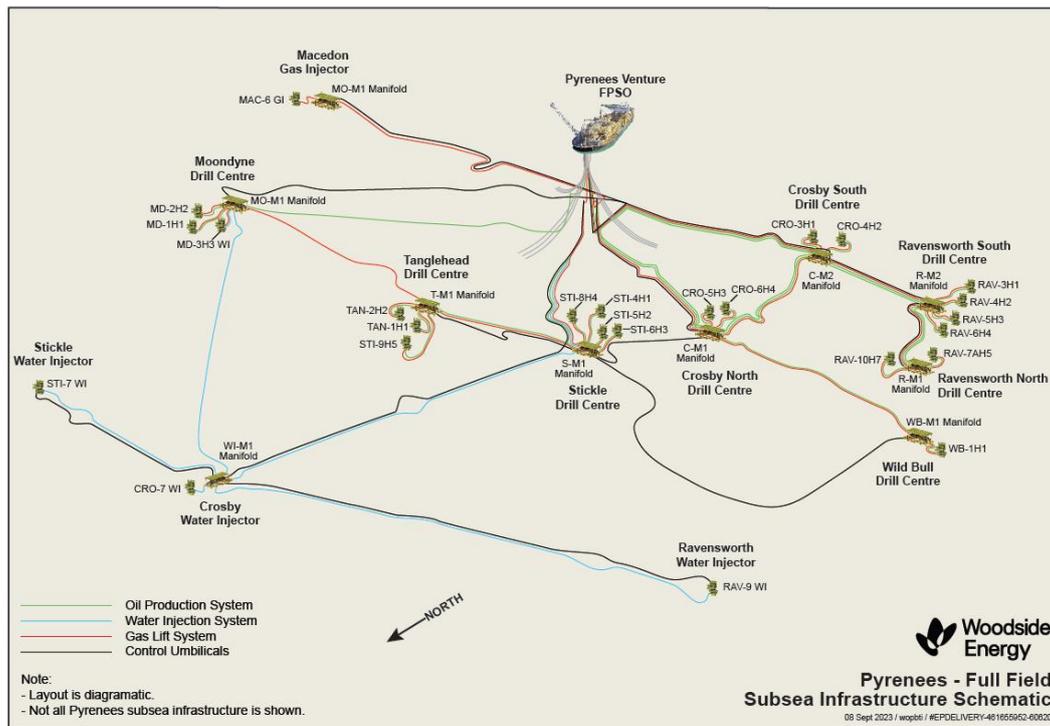


Figure 3. Overview of subsea infrastructure layout associated with the Pyrenees FPSO (not to scale)

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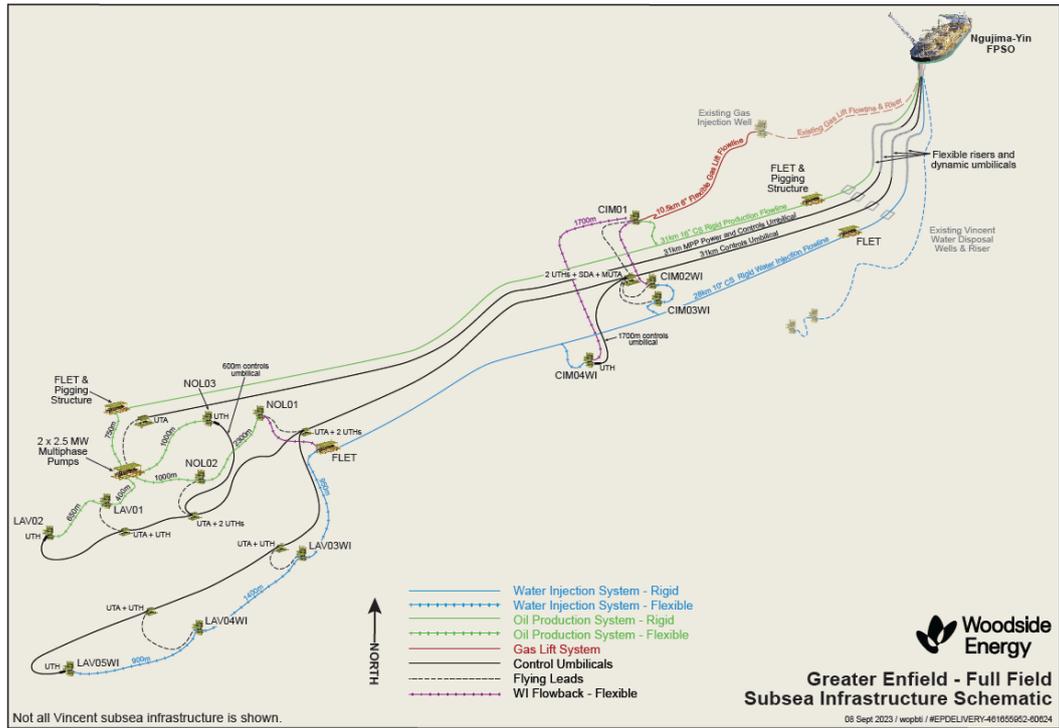


Figure 4. Overview of the subsea infrastructure layout associated with the Ngujima-Yin FPSO (not to scale)

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Environment That May Be Affected (EMBA)

The environment that may be affected (EMBA) is the largest spatial extent where the Pyrenees Floating Production, Storage and Offloading (FPSO) Operations and the Ngujima-Yin FPSO Operations' activities could potentially have an environmental consequence (direct or indirect). The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these EPs, is determined by modelling the highly unlikely event of a hydrocarbon release. The worst-case credible spill scenario for these EPs is a release from a loss of well control or a vessel collision with the FPSO with enough force to breach the hull, releasing crude to the environment.

The EMBA does not represent the extent of the predicted impact of the highly unlikely unplanned release of hydrocarbons. Rather, the EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release. This means in the highly unlikely event a hydrocarbon release does occur, the whole EMBA will not be affected - the specific and minimal part of the EMBA that is affected will only be known at the time of the release.

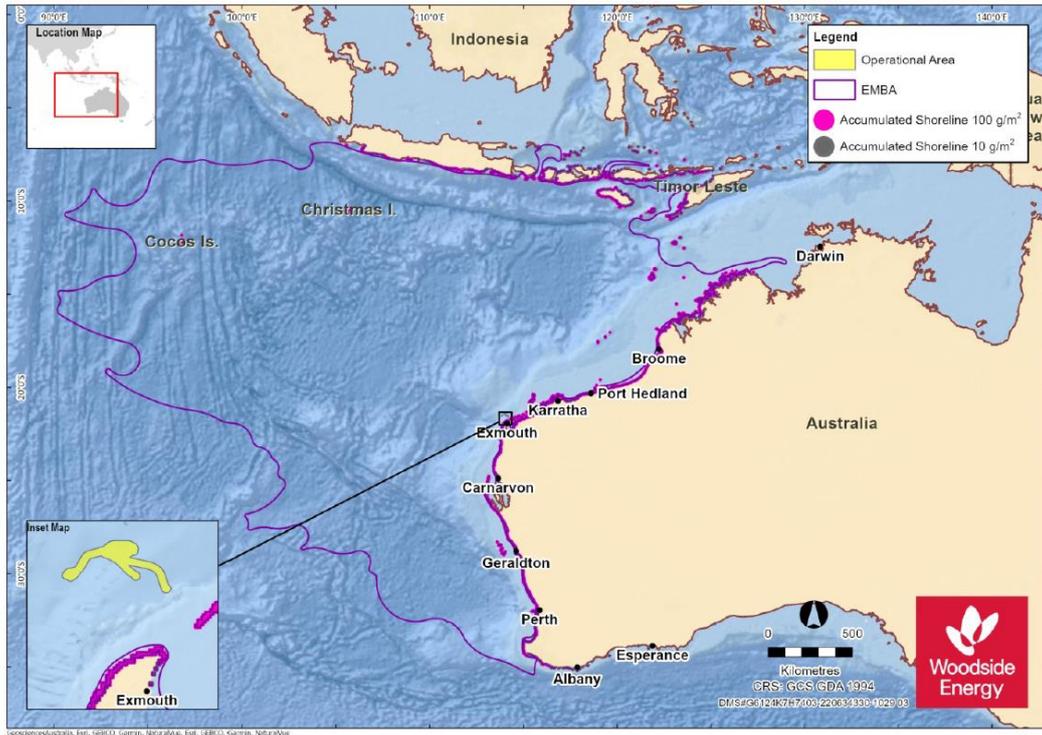


Figure 4. Ngujima-Yin FPSO Operations Environment that May Be Affected (EMBA) by an unplanned hydrocarbon release from an accident/incident during the Petroleum Activities Program.

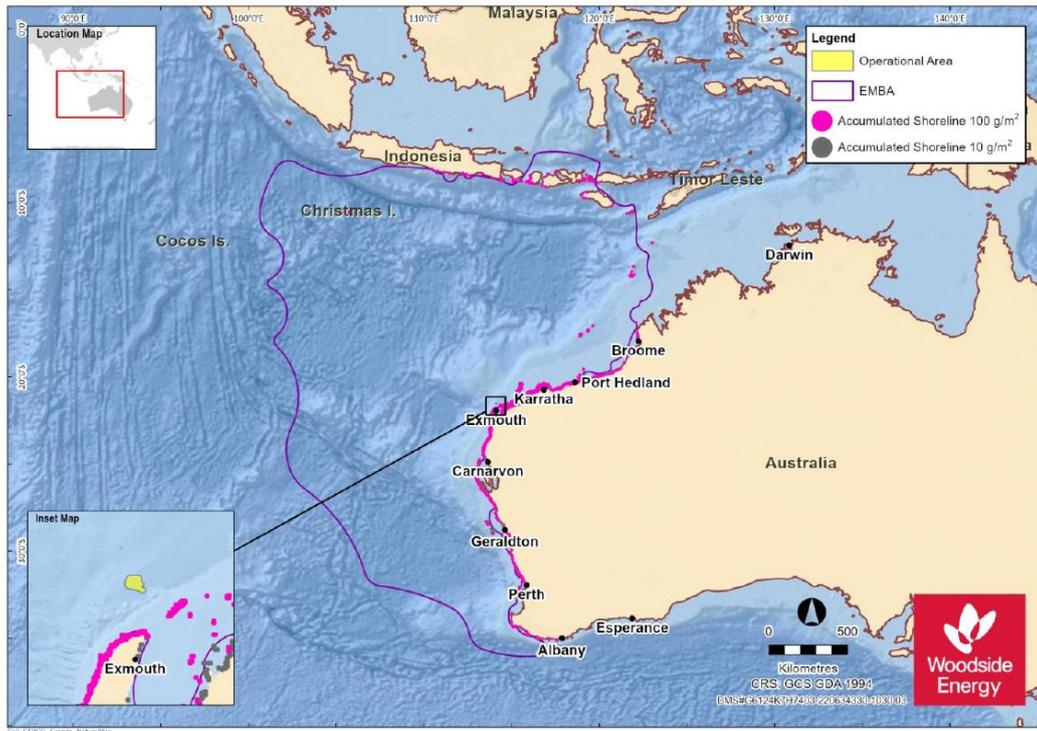


Figure 5. Pyrenees FPSO Operations Environment that May Be Affected (EMBA) by an unplanned hydrocarbon release from an accident/incident during the Petroleum Activities Program.

Feedback

Woodside consults relevant persons in the course of preparing Environment Plans to notify them of the activity and to obtain relevant feedback to inform its planning for proposed petroleum activities in the region.

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **27 October 2023** via:

E: Feedback@woodside.com
Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:

www.woodside.com/sustainability/consultation-activities

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in our Environment Plan for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) and support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

1.3 Email sent to Australian Border Force (ABF), Department of Foreign Affairs and Trade (DFAT), Department of Transport (DoT), Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Department of Biodiversity, Conservation and Attractions (DBCAs), Department of Industry, Science and Resources (DISR), Department of Mines, Industry Regulation and Safety (DMIRS), Australian Energy Producers (AEP) (Formerly Australian Petroleum Production and Exploration Association), University of Western Australia (UWA), Western Australian Marine Science Institution (WAMSI), Australian Institute of Marine Science (AIMS), Commonwealth Scientific and Industrial Research Organisation (CSIRO) - 13 September 2023

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200

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times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via</p>

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		<p>a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules

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	<p>across 4 Midwater Arches and 1 flexible riser with buoyancy modules</p> <ul style="list-style-type: none"> • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled Consultation on offshore petroleum environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.4 Email sent to Shire of Carnarvon (13 September 2023)

Dear Shire of Carnarvon,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the

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time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated</p>

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		with each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds

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	<ul style="list-style-type: none"> • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled Consultation on offshore petroleum environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.5 Email sent to Western Gas, Exxon Mobil Australia Resources Company, Shell Australia, BP Developments Australia, PE Wheatstone, Kyushu Electric Wheatstone, Eni Australia, FINDER Energy, Jadestone, KUFPEC, Vermilion Oil & Gas, Santos NA Energy Holdings / Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos (BOL) / Santos WA PVG/ Santos Browse, Coastal Oil and Gas, Bounty Oil and Gas, OMV Australia / Sapura OMV Upstream, KATO Energy / KATO Corowa / KATO NWS / KATO Amulet, INPEX Alpha, JX Nippon O&G Exploration (Australia), 3D Oil Ltd, AGI Tubridgi P/L, Good Earth Energy Corporation, Pathfinder Energy P/L, Pilot Energy Ltd, Petro China International Investment, Triangle Energy, VRX Silica Ltd, Beach Energy, Origin Energy Browse, Strike Energy, Carnarvon Energy (14 September 2023)

Dear Titleholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be

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affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and

		<ul style="list-style-type: none"> A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>

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<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.6 Email sent to Exmouth Recreational Marine Users, Karratha Recreational Marine Users, Christmas Island Recreational Marine Users, Recfishwest, Marine Tourism Association, WA Game Fishing Association – 14 September 2023

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

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The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the

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	<p>(260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)*. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.7 Email sent to Department of Defence (DoD) (15 September 2023)

Dear Department of Defence,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)* (Environment Regulations).

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.
<p>Vessels may not enter the exclusion zone without permission from the</p>		

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	Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

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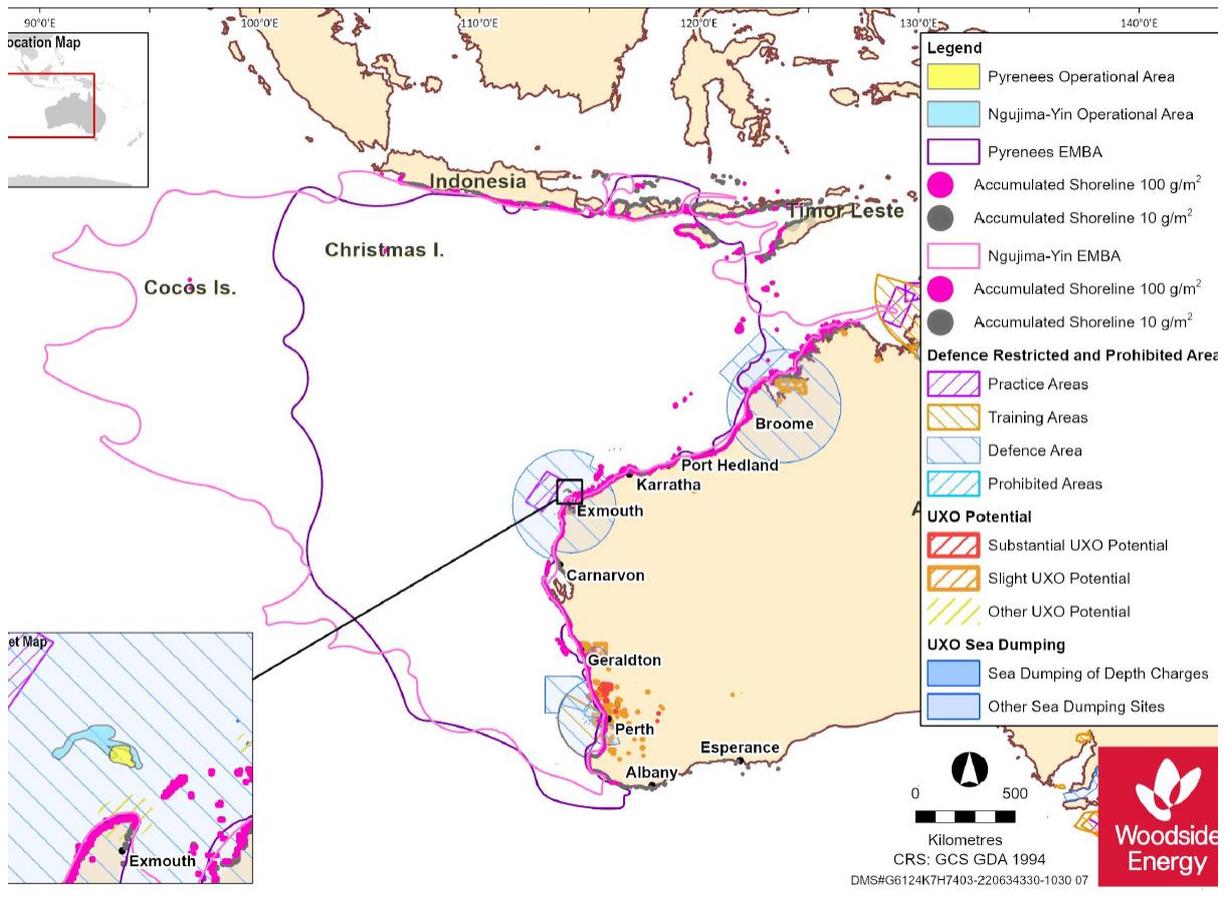
If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.8 Defence zone map sent to Department of Defence



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1.9 Email sent to Department of Climate Change, Energy, the Environment and Water (DCCEE) (15 September 2023)

Dear Department of Climate Change, Energy, the Environment and Water,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and

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associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>

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Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs)

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	<ul style="list-style-type: none"> • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.10 Email sent to Western Australian Museum (15 September 2023)

Dear Western Australian Museum,

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Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). **Also attached is a list of shipwrecks in State waters within the EMBA.** You can also choose to receive updates on our consultation activities by subscribing [here](#).

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>

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Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures.

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		<p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.11 Email sent to Department of Planning, Lands and Heritage (DPLH) (15 September 2023)

Dear DPLH

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
<p>Approx. Water Depth (m)</p>	<p>~ 180 to 215 m.</p>	<p>~ 340 to 850 m.</p>
<p>Schedule</p>	<p>Production Commenced: 2010. Routine Operations: Ongoing.</p>	<p>Production Commenced: 2008. Routine Operations: Ongoing.</p>

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	Estimated End of Field Life: 2035.	Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.12 Email sent to Chevron Australia Osaka Gas Gorgon, Tokyo Gas Gorgon, JERA Gorgon (15 September 2023)

Dear Chevron,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

We would be grateful if you could please forward this consultation information to your Joint Venture participants Osaka Gas Gorgon, Tokyo Gas Gorgon and JERA Gorgon for feedback.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities:	Continuation of activities:

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	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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	Estimated End of Field Life: 2035.	
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.13 Email sent to Australian Hydrographic Office (AHO), Australian Maritime Safety Authority (AMSA) – Marine Safety (15 September 2023)

Dear AHO / AMSA

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). **A shipping lane map is also attached. A GIS Shape File will be emailed to you separately.** You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities:	Continuation of activities:

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	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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	Estimated End of Field Life: 2035.	
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

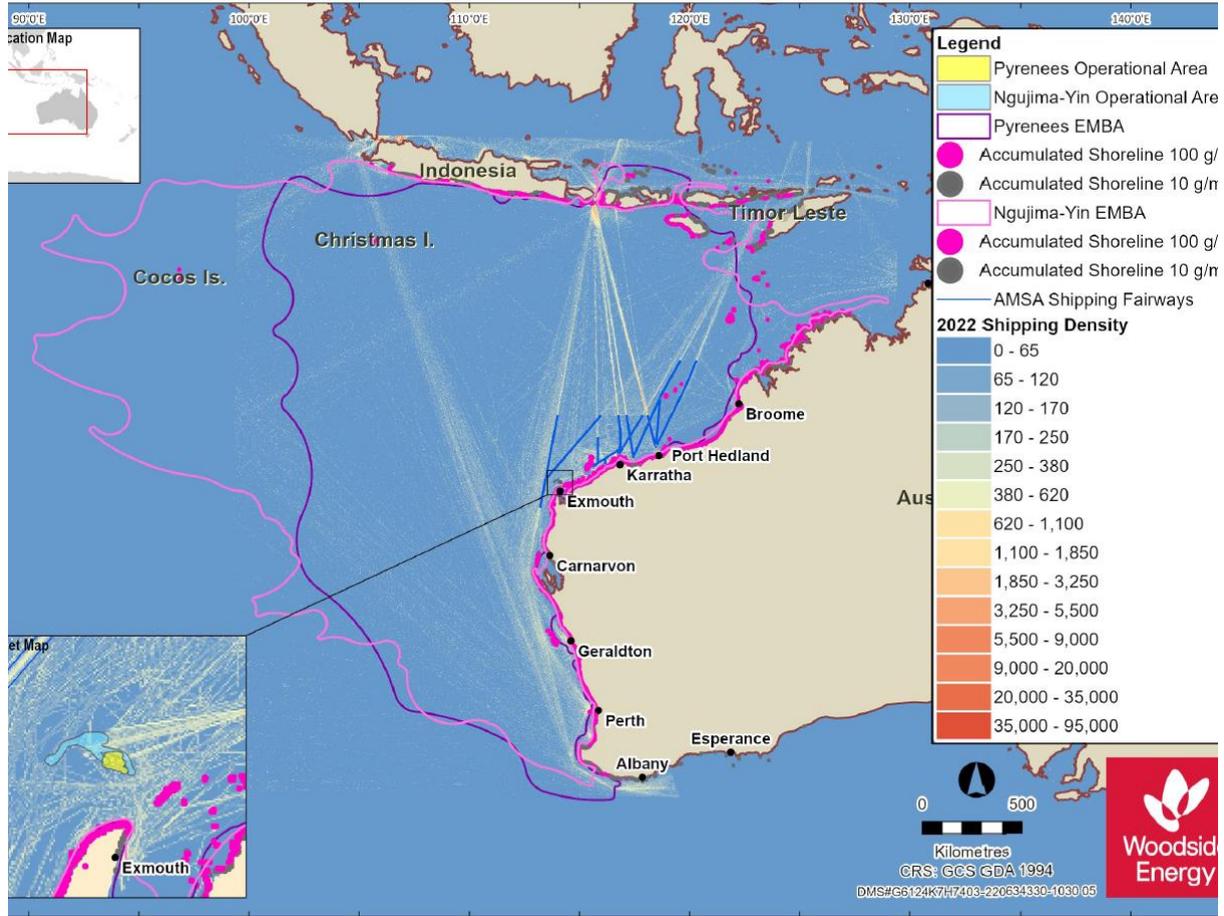
If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

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1.14 Shipping lane map sent to AHO and AMSA



1.15 Email sent to Australian Maritime Safety Authority (AMSA) – Marine Pollution (15 September 2023)

Dear [REDACTED]

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the

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	<p>(260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.16 Email sent to Onslow Chamber of Commerce and Industry (15 September 2023)

Dear [REDACTED]

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (Environment Regulations).

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the

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	<p>(260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)*. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.17 Email sent to Shire of Ashburton (15 September 2023)

Dear Shire of Ashburton,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)* (Environment Regulations).

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs

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	<p>FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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1.18 Email sent to Shire of Exmouth (15 September 2023)

Dear [REDACTED],

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
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The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
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Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

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1.19 Email to City of Karratha (15 September 2023)

Dear [REDACTED],

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
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Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

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The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.20 Email to Town of Port Hedland (15 September 2023)

Dear Town of Port Hedland,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
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Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

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1.21 Email sent to Shire of Broome (18 September 2023)

Dear [REDACTED]

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1.22 Email sent to Broome Chamber of Commerce and Industry (18 September 2023)

Dear Broome Chamber of Commerce and Industry,

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.23 Email sent to Carnarvon Chamber of Commerce and Industry (18 September 2023)

Dear Carnarvon Chamber of Commerce and Industry,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.24 Email sent to Shire of Derby/West Kimberley (18 September 2023)

Dear [REDACTED]

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

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1.25 Email sent to Exmouth Community Liaison Group (18 September 2023)

Dear Exmouth Community Liaison Group,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

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Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.26 Email sent to Karratha Community Liaison Group (18 September 2023)

Dear Karratha Community Liaison Group,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

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1.27 Email sent to Port Hedland Chamber of Commerce and Industry (18 September 2023)

Dear Port Hedland Chamber of Commerce and Industry,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
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Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities;

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	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

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1.28 Email sent to Derby Chamber of Commerce and Industry, Mid West Chamber of Commerce and Industry, East Kimberley Chamber of Commerce and Industry (18 September 2023)

Dear Stakeholder,

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities:	Continuation of activities:

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	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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	Estimated End of Field Life: 2035.	
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1.29 Email sent to Shire of Wyndham/East Kimberley, Shire of Shark Bay, City of Greater Geraldton, Shire of Chapman Valley, Shire of Dandaragan, Shire of Gingin, Shire of Northampton, Shire of Christmas Island, Pilbara Ports Authority, Kimberley Ports Authority, Mid West Ports Authority (19 September 2023)

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
<p>Approx. Water Depth (m)</p>	<p>~ 180 to 215 m.</p>	<p>~ 340 to 850 m.</p>
<p>Schedule</p>	<p>Production Commenced: 2010. Routine Operations: Ongoing.</p>	<p>Production Commenced: 2008. Routine Operations: Ongoing.</p>

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	Estimated End of Field Life: 2035.	Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.30 Email sent to Director of National Parks (DNP) (19 September 2023)

Dear Director of National Parks

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Australian Marine Parks

We note Australian Government Guidance on consultation activities and confirm that:

- The proposed activities are outside the boundaries of any proclaimed Australian Marine Parks (AMPs).
 - The Pyrenees FPSO Petroleum Activity Area is located approximately 14 km from the northern boundary of the Commonwealth Ningaloo Marine Park, approximately 138 km south-west of the Barrow Island Marine Park and approximately 179 km south-west of the Montebello Island Marine Park.
 - The Ngujima-Yin FPSO Petroleum Activity Area is located approximately 26 km from the northern boundary of the Commonwealth Ningaloo Marine Park, approximately 140 km south-west of the Barrow Island Marine Park and approximately 180 km south-west of the Montebello Island Marine Park.
- We have assessed potential impacts to AMPs in the development of the proposed EP revisions and believe that planned activities have no potential to impact the values of the Marine Parks.
- For these EPs, the worst-case credible spill scenario is a hydrocarbon release from a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull, releasing crude oil to the environment. Through review of hydrocarbon spill modelling, and with consideration of a 50 ppb dissolved and 100 ppb entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:
 - Ningaloo Marine Park
 - Gascoyne Marine Park
 - Montebello Marine Park
 - Dampier Marine Park
 - Shark Bay Marine Park
 - Carnarvon Canyon Marine Park
 - Argo-Rowley Terrace
 - Abrolhos
 - Eighty Mile Beach Marine Park
 - Mermaid Reef Marine Park
 - Kimberley Marine Park
 - Roebuck Marine Park
 - Jurien Marine Park
 - Two Rocks Marine Park
 - Perth Canyon Marine Park
 - Geographe Marine Park
 - South-west Corner Marine Park

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- Ashmore Reef Marine Park
- A Commonwealth Government-approved oil spill response plan will be in place for the duration of the activities, which will include notification to relevant agencies and organisations as to the nature and scale of the event, as soon as practicable following an occurrence. The Director of National Parks will be advised if an environmental incident occurs that may impact on the values of any Marine Park.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea

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	subsea infrastructure remaining in place.	<p>infrastructure remaining in place.</p> <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.

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	Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers

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	<ul style="list-style-type: none"> • IMMR support vessels including multi-purpose support vessels. 	<ul style="list-style-type: none"> • IMMR support vessels including multi-purpose support vessels.
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.31 Email sent to WAFIC (20 September 2023)

Hi [REDACTED],

Please see below for consultation information regarding the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans. The consultation period is due to close on 27 October 2023. I've also attached the consultation information sheet.

Under fee for service, could WAFIC please provide the consultation information to:

- Mackerel Managed Fishery (Schedule 2- Area 2) – Both activities
- Marine Aquarium Fish Managed Fishery – Both activities
- Pilbara Line Fishery (Condition) – Both activities
- West Coast Deep Sea Crustacean Managed Fishery – Both activities
- Specimen Shell Managed Fishery – Pyrenees
- Pilbara Trap Managed Fishery – Pyrenees

If this could go out today or tomorrow it would be much appreciated – this was the one from last Friday however it wasn't finalised at that time.

Kind regards,

[REDACTED]

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Woodside Feedback

Dear Commercial Licence Holders

WAFIC is contacting you regarding activities Woodside is proposing in Commonwealth waters across the North West Shelf of WA. WAFIC is now working with Woodside to strategically streamline consultation with the commercial fishing industry.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia.

Overview of Activities:

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

The table below provides a summary of the proposed activities under this EP. The attached Information Sheet provides additional information including a map of impacted areas, summaries of potential impacts and risks relating to the proposed activities, and associated management measures. These are also available on Woodside's [website](#).

Activity: Pyrenees Facility Operations, and Ngujima-Yin Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> · Routine oil production, crude oil offloading and associated activities; · Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and · Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> · Routine oil production, crude oil offloading and associated activities; · Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and · Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> · A subsea tie back of two new wells to existing subsea infrastructure; and · A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline

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		supplying fuel gas from either Pyrenees or Macedon.
Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	Mackerel Managed Fishery (Schedule 2- Area 2) Marine Aquarium Fish Managed Fishery Pilbara Line Fishery West Coast Deep Sea Crustacean Managed Fishery Specimen Shell Managed Fishery Pilbara Trap Managed Fishery	Mackerel Managed Fishery (Schedule 2- Area 2) Marine Aquarium Fish Managed Fishery Pilbara Line Fishery West Coast Deep Sea Crustacean Managed Fishery

Feedback

Please provide any feedback specific to the proposed activities to [REDACTED] at WAFIC at [REDACTED] by **27 October 2023**.

Your feedback and Woodside’s response will be included in the Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the proposed activities (which may or may not be confidential). Please advise if you would like any information to remain confidential and Woodside will make this known to NOPSEMA upon submission of the Environment Plan. To receive updates on Woodside’s consultation activities, please subscribe [here](#).

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1.32 Email sent to Mackerel Managed Fishery (Area 2), West Coast Deep Sea Crustacean Managed Fishery, Pilbara Line Fishery and Pilbara Trap Managed Fishery, via WAFIC (21 September 2023)

Dear Commercial Licence Holders

WAFIC is contacting you regarding activities Woodside is proposing in Commonwealth waters across the North West Shelf of WA. WAFIC is now working with Woodside to strategically streamline consultation with the commercial fishing industry.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia.

Overview of Activities:

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

The table below provides a summary of the proposed activities under this EP. The attached Information Sheet provides additional information including a map of impacted areas, summaries of potential impacts and risks relating to the proposed activities, and associated management measures. These are also available on Woodside's [website](#).

If you would like to receive notifications prior to and on completion of activities, please let us know. Woodside will notify WAFIC.

Activity: Pyrenees Facility Operations, and Ngujima-Yin Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel

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		gas from either Pyrenees or Macedon.
Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	Mackerel Managed Fishery (Schedule 2- Area 2) Pilbara Line Fishery West Coast Deep Sea Crustacean Managed Fishery Pilbara Trap Managed Fishery	Mackerel Managed Fishery (Schedule 2- Area 2) Pilbara Line Fishery West Coast Deep Sea Crustacean Managed Fishery

Feedback

Please provide any feedback specific to the proposed activities to [REDACTED] at WAFIC at [REDACTED] by **27 October 2023**.

Your feedback and Woodside’s response will be included in the Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the proposed activities (which may or may not be confidential). Please advise if you would like any information to remain confidential and Woodside will make this known to NOPSEMA upon submission of the Environment Plan.

To receive updates on Woodside’s consultation activities, please subscribe [here](#).

Best regards

1.33 Email sent to Department of Agriculture Fisheries and Forestry (DAFF) – Fisheries (20 September 2023)

Dear DAFF – Fisheries and Biosecurity,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • a new flowline to provide fuel gas from a neighboring field to the facility.

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		<p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>

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<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offloading tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offloading tankers • IMMR support vessels including multi-purpose support vessels.
<p>Relevant fisheries</p>	<p><u>Commonwealth fisheries</u> Operational Area: Nil</p>	<p><u>Commonwealth fisheries</u> Operational Area: Nil</p>

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	<p>EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery</p>	<p>EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery</p>
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Biosecurity

With respect to biosecurity matters, please note the following information below:

Environment description

The Pyrenees Operational Area (which includes the FPSO and subsea infrastructure) is located in water depths of approximately 180 to 215 m on the outer continental shelf of the North West Shelf Province, approximately 45 km north of Exmouth. The seabed is generally flat and featureless, with some minor depressions and comprises primarily of soft sediment, which is consistent with the wider North West Shelf Province.

The Ngujima-Yin Operational Area (which includes the FPSO and subsea infrastructure) is located in water depths of approximately 340 to 850 m on the outer continental shelf and continental slope of the North West Shelf Province, approximately 57km north of Exmouth. The seabed in the north-east half of the Operational Area is relatively flat and featureless and comprises primarily of soft sediment which is consistent with the wider North West Shelf Province. The seabed in the south-west of the Operational Area intersects the Canyons linking the Cuvier Abyssal Plain Key Ecological Feature. A survey was undertaken in 2015 of the Enfield Canyon observed that the canyon comprised flat unconsolidated sediments composed of sand- and mud-sized particles and that the canyon does not appear significantly different than the surrounding region, with seabed habitats and deep-water biota being typical and representative in the wider region.

As such, the sediment throughout the Ngujima-Yin Operational Area are broadly consistent with those in the North West Shelf Province, which are characterised by fine to medium sediment (silts and sands) with patches of coarser sediments (shells/gravels).

Potential IMS risk

IMS risk mitigation management

Accidental introduction and establishment of invasive marine species

All vessels are required to comply with *the Australian Biosecurity Act 2015*, specifically the Australian Ballast Water Management Requirements (as defined under the Act) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent introducing Invasive Marine Species (IMS).

Vessels entering the Operation Areas for Pyrenees and Ngujima-Yin will have Woodside's IMS risk assessment process applied, including for immersible equipment entering the Operation Area. Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as the

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treatment of internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced. Inspection of the FPSOs will be completed by a qualified IMS Inspector prior to return from international sail away.

Feedback

If you have feedback specific to the proposed activities described under the EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 **by 27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.34 Email sent to Australian Fisheries Management Authority (AFMA) (20 September 2023)

Dear AFMA,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

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The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • a new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>

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Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility

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	<ul style="list-style-type: none"> • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offloading tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offloading tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Commonwealth fisheries</u></p> <p>Operational Area:</p> <p>Nil</p> <p>EMBA:</p> <p>North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery</p>	<p><u>Commonwealth fisheries</u></p> <p>Operational Area:</p> <p>Nil</p> <p>EMBA:</p> <p>North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>

Feedback

If you have feedback specific to the proposed activities described under the EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 **by 27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.35 Email sent to Protect Ningaloo, Cape Conservation Group (21 September 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with</p>

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		each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds

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	<ul style="list-style-type: none"> • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum](#)

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environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.36 Email sent to City of Albany, City of Bunbury, City of Busselton, Town of Cambridge, Shire of Capel, Shire of Carnamah, City of Cockburn, Shire of Cocos Islands, Shire of Coorow, Shire of Denmark, Town of Cottesloe, Shire of Dundas, Shire of Esperance, City of Fremantle, Shire of Harvey, Shire of Irwin, Shire of Jerramungup, City of Joondalup, City of Mandurah, Shire of Kwinana, Shire of Manjimup, Town of Mosman Park, Shire of Nannup, City of Nedlands, City of Rockingham, City of Stirling, City of Wanneroo, Shire of Waroona, Shire of Ravensthorpe, Shire of Augusta Margaret River, Margaret River Chamber of Commerce and Industry, Southern Ports (Albany), Southern Ports (Bunbury), Fremantle Port Authority (21 September 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

There are some questions and answers at the bottom of this email explaining why you have received this email.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be

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affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and

		<ul style="list-style-type: none"> A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
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Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>

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<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Questions and Answers

Why have I received this email?

Your organisation has been identified by Woodside as potentially being relevant to consult with for Environment Plans relating to our operations of the Pyrenees Floating Production Storage and Offloading (FPSO) Facility and Ngujima-Yin FPSO Facility, located off Exmouth, WA.

Woodside consults relevant persons to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential effects of the operations on the environment. This is the intended outcome of consultation.

But I'm not located near Exmouth?

Late last year a Federal Court decision looked at the way the Australian offshore energy industry consults relevant persons. Upon the establishment of this new case law, Woodside now consults much more broadly and consults with persons based on potential impacts from an unplanned event rather than planned impacts of a proposed offshore activity.

Woodside uses the environment that may be affected or 'EMBA' to help identify who may be a relevant person. This brochure from the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has more information regarding consultation on offshore petroleum environment plans.

What is an EMBA?

The environment that may be affected or EMBA is the largest area where unplanned events from the operations off Exmouth could have an environmental consequence (impact) based on modelling.

For the Pyrenees and Ngujima-Yin Facility Operations Environment Plans, the EMBA represents the merged area of many possible modelled paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of release. This is based on oil trajectory modelling.

What does oil trajectory modelling involve and why is the EMBA so big?

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The process of identifying and mapping out an EMBA for each petroleum activity is primarily for assessment of potential impacts and oil spill response planning purposes. As the events that may lead to a spill are unknown, for planning purposes, the worst case credible spill scenario is identified. This looks at the worst case credible volume, location, timing etc, and modelling is undertaken to understand where the oil may go, if unmitigated (i.e. if no response strategies are applied).

To account for weather and ocean current variables, the spill scenario is modelled multiple times (typically 100 to 200 times) to see where the weather and ocean currents may take the oil.

All the modelled spill trajectories are then merged to create an EMBA. This means in the highly unlikely event a hydrocarbon release does occur, the entire EMBA will not be affected. The specific and minimal part of the EMBA that is affected will only be known at the time of the release.

In order to be able to pre-prepare, response plans are built around the potential impacts resulting from a selection of the worst case modelling runs.

Where can I get more information?

For more information on consultation and oil spill modelling visit the [NOPSEMA website](#).

1.37 Email sent to Tuna Australia, Commonwealth Fisheries Association (CFA), North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Northern Prawn Fishery, Christmas Island Line Fishery (22 September 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
<p>Approx. Water Depth (m)</p>	<p>~ 180 to 215 m.</p>	<p>~ 340 to 850 m.</p>

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Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery</p>	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

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1.38 Email sent to Department of Primary Industries and Regional Development (DPIRD) (22 September 2023)

Dear [REDACTED],

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200

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times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#). We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and

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		<ul style="list-style-type: none"> A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> 1 FPSO 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> 1 FPSO

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	<ul style="list-style-type: none"> • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>State Fisheries</u></p> <p>Operational Area:</p> <p>Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Trap Managed Fishery, Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery</p> <p>EMBA:</p> <p>Abalone Managed Fishery, Abrolhos Islands and Mid West</p>	<p><u>State Fisheries</u></p> <p>Operational Area:</p> <p>Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery</p> <p>EMBA:</p> <p>Abalone Managed Fishery, Abrolhos Islands and Mid West Trawl Managed Fishery, Broome</p>

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	<p>Trawl Managed Fishery, Broome Prawn Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Open Access in the North Coast, Gascoyne Coast, Pearl Oyster Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South West Trawl Fishery, Specimen Shell Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast</p>	<p>Prawn Managed Fishery, Cockburn Sound (Fish Net) Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf Prawn Managed Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Kimberley Prawn Managed Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Open Access in the North Coast, Gascoyne Coast, Pearl Oyster Managed Fishery, Pearl Oyster Managed Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Beach Seine and Mesh Net Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South</p>
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	Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery	West Trawl Fishery, Specimen Shell Managed Fishery, Trochus Fishery, Warnbro Sound Crab Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery
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Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.39 Email sent to NT Fisheries (22 September 2023)

Dear NT Fisheries,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and

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associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p>

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		The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds

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	<ul style="list-style-type: none"> • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Northern Territory Fisheries</u> Operational Area: Nil EMBA: Nil</p>	<p><u>Northern Territory Fisheries</u> Operational Area: Nil EMBA: Northern Territory Demersal Managed Fishery, Northern Territory Offshore Net and Line Managed Fishery, Northern Territory Spanish Mackerel Managed Fishery, Northern Territory Aquarium Managed Fishery, Northern Territory Aquaculture Managed Fishery, Northern Territory Mollusc Managed Fishery, Northern Territory Mud Crab Managed Fishery</p>

Feedback

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1.40 Email sent to Northern Territory Department of Industry, Tourism and Trade (DITT), Northern Territory Department of Environment, Parks and Water Security (DEWS), Northern Territory Environment Protect Authority (NTEPA) (22 September 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,

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- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
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Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place.

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		<p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without</p>

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	<p>addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.41 Letter sent to Gascoyne Recreational Marine Users, Pilbara/Kimberley Recreational Marine Users, South Coast Recreational Marine Users, West Coast Recreational Marine Users (22 September 2023)



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Please direct all responses/queries to:
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22 September 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

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Revision: 0

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our website at woodside.com. You can also choose to receive updates on our consultation activities by subscribing on our website.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> A subsea tie back of two new wells to existing subsea infrastructure; and A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p>

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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	<ul style="list-style-type: none"> • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

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Regards,
Woodside Feedback



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f t in v @

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1.42 Letter sent to Northern Territory Aquarium Fish/Display Fish Fishery, Northern Territory Spanish Mackerel Fishery, Northern Territory Offshore Net & Line Fishery, Northern Territory Demersal Fishery, Northern Territory Mud Crab Fishery, Northern Territory Mollusc Fishery, Northern Territory Aquaculture Fishery (22 September 2023)



Please direct all responses/queries to:
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22 September 2023

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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

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- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill

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scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> A subsea tie back of two new wells to existing subsea infrastructure; and A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.

Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<u>Northern Territory Fisheries</u> Operational Area: Nil EMBA: Nil	<u>Northern Territory Fisheries</u> Operational Area: Nil EMBA: Northern Territory Demersal Managed Fishery, Northern Territory Offshore Net and Line Managed Fishery, Northern Territory Spanish Mackerel Managed Fishery, Northern Territory Aquarium Managed Fishery, Northern Territory Aquaculture Managed Fishery, Northern Territory Mollusc Managed Fishery, Northern Territory Mud Crab Managed Fishery

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Woodside Feedback



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f **t** **in** **o** **@**

1.43 Letter sent to Christmas Island Line Fishery licence holder

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22 September 2023

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Overview

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- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

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We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> A subsea tie back of two new wells to existing subsea infrastructure; and A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>

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Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery	<u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure on its website, nopsema.gov.au, entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Regards,

Woodside Feedback



Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
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E: feedback@woodside.com.au
www.woodside.com

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1.44 Email sent to 350 Australia (350A), Greenpeace Australia Pacific (GAP), Australian Conservation Foundation (ACF), Australian Marine Conservation Society (AMCS), Conservation Council of Western Australia (CCWA), Sea Shepherd Australia (SSA) (26 September 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the

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time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>

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Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps

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	<ul style="list-style-type: none"> • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

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1.45 Email sent to Pearl Producers Association (26 September 2023)

Dear Stakeholder,

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Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>

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Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures.

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		<p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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1.46 Letter sent to Allasso Energy Pty Ltd, AWE Perth Pty Ltd, PBE Operations Pty Ltd (26 September 2023)

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Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: Feedback@woodside.com.au

Woodside Energy Group Ltd
ACN 004 898 962
Mia Yellagonga
11 Mount Street
Perth WA 6000
Australia
T: +61 8 9348 4000
www.woodside.com

26 September 2023

Dear Titleholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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Overview

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Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
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Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010</p> <p>Routine Operations: Ongoing</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008</p> <p>Routine Operations: Ongoing</p> <p>Estimated End of Field Life: 2028.</p>

<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure on its website, nopsema.gov.au, entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Regards,

Woodside Feedback



Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com.au
www.woodside.com
f t in v @

1.47 Email sent to Skye Napoleon; Petroleum; Resources (27 September 2023)

Dear Titleholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and

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associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L</p>

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		and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps

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	<ul style="list-style-type: none"> • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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1.48 Email sent to New Zealand Oil and Gas (NZOG) Compass (27 September 2023)

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
<p>Approx. Water Depth (m)</p>	<p>~ 180 to 215 m.</p>	<p>~ 340 to 850 m.</p>

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Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
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		<p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

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1.49 Email sent to Karratha and Districts Chamber of Commerce and Industry (27 September 2023)

Dear Karratha and Districts Chamber of Commerce and Industry,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
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Overview

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

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Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
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Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
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		<p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.50 Email sent to Exmouth Chamber of Commerce and Industry (27 September 2023)

Dear Exmouth Chamber of Commerce and Industry,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
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<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>
<p>Location</p>	<p>~ 45 km north of Exmouth.</p>	<p>~ 57 km north of Exmouth.</p>
<p>Approx. Water Depth (m)</p>	<p>~ 180 to 215 m.</p>	<p>~ 340 to 850 m.</p>
<p>Schedule</p>	<p>Production Commenced: 2010. Routine Operations: Ongoing.</p>	<p>Production Commenced: 2008. Routine Operations: Ongoing.</p>

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	Estimated End of Field Life: 2035.	Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.51 Email sent to Jurien Bay Chamber of Commerce and Industry, Lancelin Chamber of Commerce and Industry, Albany Chamber of Commerce and Industry, Bunbury Geographe Chamber of Commerce and Industry, Busselton Chamber of Commerce and Industry, Dunsborough Yallingup Chamber of Commerce and Industry, Capel Chamber of Commerce and Industry, Melville Cockburn Chamber of Commerce and Industry, Denmark Chamber of Commerce and Industry, Esperance Chamber of Commerce and Industry, Fremantle Chamber of Commerce and Industry, Peel Chamber of Commerce and Industry, Rockingham Kwinana Chamber of Commerce and Industry, Manjimup Chamber of Commerce and Industry, Nannup Chamber of Commerce and Industry, Augusta Chamber of Commerce and Industry (27 September 2023)

Dear Stakeholder,

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Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

There are some questions and answers at the bottom of this email explaining why you have received this email.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

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- Routine oil production, including crude oil offloading and associated activities,
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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>

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Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
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	<ul style="list-style-type: none"> • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Questions and Answers

Why have I received this email?

Your organisation has been identified by Woodside as potentially being relevant to consult with for Environment Plans relating to our operations of the Pyrenees Floating Production Storage and Offloading (FPSO) Facility and Ngujima-Yin FPSO Facility, located off Exmouth, WA.

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Woodside consults relevant persons to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential effects of the operations on the environment. This is the intended outcome of consultation.

But I'm not located near Exmouth?

Late last year a Federal Court decision looked at the way the Australian offshore energy industry consults relevant persons. Upon the establishment of this new case law, Woodside now consults much more broadly and consults with persons based on potential impacts from an unplanned event rather than planned impacts of a proposed offshore activity.

Woodside uses the environment that may be affected or 'EMBA' to help identify who may be a relevant person. This [brochure](#) from the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has more information regarding consultation on offshore petroleum environment plans.

What is an EMBA?

The environment that may be affected or EMBA is the largest area where unplanned events from the operations off Exmouth could have an environmental consequence (impact) based on modelling.

For the Pyrenees and Ngujima-Yin Facility Operations Environment Plans, the EMBA represents the merged area of many possible modelled paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of release. This is based on oil trajectory modelling.

What does oil trajectory modelling involve and why is the EMBA so big?

The process of identifying and mapping out an EMBA for each petroleum activity is primarily for assessment of potential impacts and oil spill response planning purposes. As the events that may lead to a spill are unknown, for planning purposes, the worst case credible spill scenario is identified. This looks at the worst case credible volume, location, timing etc, and modelling is undertaken to understand where the oil may go, if unmitigated (i.e. if no response strategies are applied).

To account for weather and ocean current variables, the spill scenario is modelled multiple times (typically 100 to 200 times) to see where the weather and ocean currents may take the oil.

All the modelled spill trajectories are then merged to create an EMBA. This means in the highly unlikely event a hydrocarbon release does occur, the entire EMBA will not be affected. The specific and minimal part of the EMBA that is affected will only be known at the time of the release.

In order to be able to pre-prepare, response plans are built around the potential impacts resulting from a selection of the worst case modelling runs.

Where can I get more information?

For more information on consultation and oil spill modelling visit the [NOPSEMA website](#).

1.52 Email sent to Shire of East Pilbara (02 October 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>

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Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
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	<ul style="list-style-type: none"> • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

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1.53 Letter sent to Cocos (Keeling) Islands Marine Aquarium Fishery

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Please direct all responses/queries to:
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T: 1800 442 977
E: Feedback@woodside.com.au

03 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our website woodside.com. You can also subscribe to receive updates on our consultation activities by subscribing on our website.

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> A subsea tie back of two new wells to existing subsea infrastructure; and A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>

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Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.

Vessels	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	Key vessels include, but are not limited to: <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery	<u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **02 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Regards,

Woodside Feedback



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1.54 Letter sent to Christmas Island Recreational Marine User (04 October 2023)

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11 Mount Street
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03 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

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for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities</p>

		will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
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Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
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	<ul style="list-style-type: none"> • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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Regards,
Woodside Feedback



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www.woodside.com
f t in y u

1.55 Email sent to National Energy Resources Australia (NERA) (05 October 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

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Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>

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Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
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		<p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **06 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,
Woodside Feedback

1.56 Email sent to Australian Southern Blue Tuna Industry Association (ASBTIA) (12 October 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the

time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the</p>

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		<p>operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010</p> <p>Routine Operations: Ongoing</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008</p> <p>Routine Operations: Ongoing</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals

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	<ul style="list-style-type: none"> • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery</p>	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA)

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for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

1.57 Email sent to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (16 October 2023)

Dear DAFF – Biosecurity,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the

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	<p>FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • a new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010. Routine Operations: Ongoing. Estimated End of Field Life: 2035.	Production Commenced: 2008. Routine Operations: Ongoing. Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offloading tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offloading tankers IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery</p>	<p><u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>

Biosecurity

With respect to biosecurity matters, please note the following information below:

Environment description

The Pyrenees Operational Area (which includes the FPSO and subsea infrastructure) is located in water depths of approximately 180 to 215 m on the outer continental shelf of the North West Shelf Province, approximately 45 km north of Exmouth. The seabed is generally flat and featureless, with some minor depressions and comprises primarily of soft sediment, which is consistent with the wider North West Shelf Province.

The Ngujima-Yin Operational Area (which includes the FPSO and subsea infrastructure) is located in water depths of approximately 340 to 850 m on the outer continental shelf and continental slope of the North West Shelf Province, approximately 57km north of Exmouth.

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The seabed in the north-east half of the Operational Area is relatively flat and featureless and comprises primarily of soft sediment which is consistent with the wider North West Shelf Province. The seabed in the south-west of the Operational Area intersects the Canyons linking the Cuvier Abyssal Plain Key Ecological Feature. A survey was undertaken in 2015 of the Enfield Canyon observed that the canyon comprised flat unconsolidated sediments composed of sand- and mud-sized particles and that the canyon does not appear significantly different than the surrounding region, with seabed habitats and deep-water biota being typical and representative in the wider region.

As such, the sediment throughout the Ngujima-Yin Operational Area are broadly consistent with those in the North West Shelf Province, which are characterised by fine to medium sediment (silts and sands) with patches of coarser sediments (shells/gravels).

Potential IMS risk	IMS risk mitigation management
Accidental introduction and establishment of invasive marine species	<p>All vessels are required to comply with <i>the Australian Biosecurity Act 2015</i>, specifically the Australian Ballast Water Management Requirements (as defined under the Act) (aligned with the International Convention for the Control and Management of Ships' Ballast Water and Sediments) to prevent introducing Invasive Marine Species (IMS).</p> <p>Vessels entering the Operation Areas for Pyrenees and Ngujima-Yin will have Woodside's IMS risk assessment process applied, including for immersible equipment entering the Operation Area. Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as the treatment of internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced.</p> <p>Inspection of the FPSOs will be completed by a qualified IMS Inspector prior to return from international sail away.</p>

Feedback

If you have feedback specific to the proposed activities described under the EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 **by 15 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum](#)

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environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,
Woodside Feedback

1.58 Email sent to Northern Prawn Fishery Industry Pty Ltd (18 October 2023)

Dear Northern Prawn Fishery Industry,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

We are consulting you on the recommendation of AFMA. We are also consulting individual licence holders in the Northern Prawn Fishery.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

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Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the

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	turret mooring and subsea infrastructure remaining in place.	turret mooring and subsea infrastructure remaining in place. Future development activities are being considered for the Ngujima-Yin FPSO including: <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline. The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.

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	Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

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<p>Relevant fisheries</p>	<p><u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery</p>	<p><u>Commonwealth fisheries</u> Operational Area: Nil EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>
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Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **17 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

Woodside Feedback

1.59 Email sent to Western Rock Lobster Council (30 October 2023)

Dear [REDACTED],

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

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A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#). We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p>

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		The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells

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	<p>and 1 flexible riser with buoyancy modules</p> <ul style="list-style-type: none"> • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>State Fisheries</u></p> <p>Operational Area:</p> <p>Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Trap Managed Fishery, Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery</p> <p>EMBA:</p> <p>Abalone Managed Fishery, Abrolhos Islands and Mid West Trawl Managed Fishery, Broome Prawn Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf Prawn Managed</p>	<p><u>State Fisheries</u></p> <p>Operational Area:</p> <p>Mackerel Managed Fishery (Schedule 2 – Area 2), Pilbara Line Fishery (Condition), West Coast Deep Sea Crustacean Managed Fishery</p> <p>EMBA:</p> <p>Abalone Managed Fishery, Abrolhos Islands and Mid West Trawl Managed Fishery, Broome Prawn Managed Fishery, Cockburn Sound (Fish Net) Managed Fishery, Cockburn Sound (Line and Pot) Managed Fishery, Exmouth Gulf Beach Seine and Mesh Net Managed Fish, Exmouth Gulf</p>

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	<p>Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Open Access in the North Coast, Gascoyne Coast, Pearl Oyster Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South West Trawl Fishery, Specimen Shell Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet</p>	<p>Prawn Managed Fishery, Gascoyne Demersal Scalefish Managed Fishery, Hermit Crab Fishery, Joint Authority Southern Demersal Gillnet and Deme, Kimberley Crab Managed Fishery, Kimberley Gillnet and Barramundi Managed Fishery, Kimberley Prawn Managed Fishery, Mackerel Managed Fishery (Schedule 2 - Areas of the Fishery (Area 1, 2, & 3), Schedule 3), Mandurah to Bunbury Developing Crab Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Northern Demersal Scalefish Managed Fishery, Octopus Interim Managed Fishery, Onslow Prawn Managed Fishery, Open Access in the North Coast, Gascoyne Coast, Pearl Oyster Managed Fishery, Pearl Oyster Managed Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl (Interim) Managed Fishery, Pilbara Line Fishery (Condition), Pilbara Trap Managed Fishery, Shark Bay Beach Seine and Mesh Net Managed Fishery, Shark Bay Crab Managed Fishery, Shark Bay Prawn Managed Fishery, Shark Bay Scallop Managed Fishery, South Coast Crustacean Managed Fishery, South Coast Estuarine Managed Fishery, South Coast Line and Fish Trap Managed Fishery, South Coast Nearshore Net Managed Fishery, South Coast Purse-Seine Managed Fishery, South Coast Salmon Managed Fishery, South West Coast Beach Net Fishery (Order), South West Coast Salmon Managed Fishery, South West Trawl Fishery, Specimen Shell Managed</p>
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	<p>and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery</p>	<p>Fishery, Trochus Fishery, Warnbro Sound Crab Managed Fishery, West Australian Sea Cucumber Fishery, West Coast (Beach Bait Fish Net) Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery, West Coast Demersal Gillnet and Demersal Longline, West Coast Demersal Scalefish (Interim) Managed Fishery, West Coast Estuarine Managed Fishery, West Coast Purse Seine Fishery, West Coast Rock Lobster Managed Fishery</p>
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Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **20 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

Woodside Feedback

1.60 Email sent to Shire of Shark Bay (31 October 2023)

Dear [REDACTED],

Following Woodside’s recent visit, please find an overview of proposed Woodside activities you may be interested in providing feedback on.

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Also below is the previous email we sent to [REDACTED] on 16 October regarding the Ngujima-Yin FPSO Facility Operations and Pyrenees Facility Operations Environment Plans.

Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees. Woodside is planning to submit five-year revisions of the Ngujima-Yin FPSO Facility Operations and Pyrenees Facility Operations EPs:

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Scarborough Offshore Facility and Trunkline Operations EP:

Woodside is planning to submit the Scarborough Offshore Facility and Trunkline Operations Environment Plan which involves the installation of a Floating Production Unit (FPU) and complete subsequent hook-up and commissioning activities, prior to start-up and operations within Production Licences WA-61-L and WA-62-L. Gas from the FPU will be transferred through the gas export trunkline (the Trunkline - Pipeline Licence WA-32-PL) to the Pluto LNG Plant for further processing.

The FPU will be installed and connected to a pre-installed 20-point suction-piled mooring system and the riser pull-in(s) carried out. Hook-up and connection to subsea infrastructure will also occur, prior to commissioning.

The commissioning activity involves:

- Dewatering and commissioning of the subsea production system, comprising wellheads, manifolds, flowlines, umbilicals, and communication lines.
- Activities to confirm the integrity of the entire interconnected facility, so it is ready for start-up (RFSU) with the introduction of reservoir hydrocarbons.

The FPU start-up consists of initiating the subsea production system and FPU to allow reservoir gas and processing equipment to reach operational pressures and temperatures, as well as obtaining sufficient and stable equipment inlet flow to enable the equipment to perform to design criteria. Well clean-up and commissioning will also be carried out and gas export trunkline pressurisation and nitrogen (N₂) removal.

Routine production operations involve transfer of reservoir fluids, including gas and produced water from the reservoir, along with Mono Ethylene Glycol (MEG) injection at the wells, through the subsea infrastructure to the FPU; and gas export via the Trunkline.

Other activities include gravimetry surveys for the purposes of reservoir monitoring, as well as IMMR activities on the FPU, subsea infrastructure (excluding well intervention or well workover activities) and gas export trunkline, and other contingent activities.

Consultation Information Sheets

Consultation Information Sheets are attached, which provide additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Feedback

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **13 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

Woodside Feedback

1.61 Email sent to Department of Biodiversity, Conservation and Attractions' (DBCA) Shark Bay office (31 October 2023)

Dear [REDACTED],

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Woodside recently met with the Shire of Shark Bay who advised you may be interested in and have feedback on the following proposed Woodside activities. We have also consulted the central DBCA agency which has provided feedback regarding the establishment of baseline survey data for nearby areas of ecological importance, light pollution guidelines, and the 'Incidents and Emergency Response' process.

Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

Woodside is planning to submit five-year revisions of the Ngujima-Yin FPSO Facility Operations and Pyrenees Facility Operations EPs:

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Scarborough Offshore Facility and Trunkline Operations EP:

Woodside is planning to submit the Scarborough Offshore Facility and Trunkline Operations Environment Plan which involves the installation of a Floating Production Unit (FPU) and complete subsequent hook-up and commissioning activities, prior to start-up and operations within Production Licences WA-61-L and WA-62-L. Gas from the FPU will be transferred through the gas export trunkline (the Trunkline - Pipeline Licence WA-32-PL) to the Pluto LNG Plant for further processing.

The FPU will be installed and connected to a pre-installed 20-point suction-piled mooring system and the riser pull-in(s) carried out. Hook-up and connection to subsea infrastructure will also occur, prior to commissioning.

The commissioning activity involves:

- Dewatering and commissioning of the subsea production system, comprising wellheads, manifolds, flowlines, umbilicals, and communication lines.

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- Activities to confirm the integrity of the entire interconnected facility, so it is ready for start-up (RFSU) with the introduction of reservoir hydrocarbons.

The FPU start-up consists of initiating the subsea production system and FPU to allow reservoir gas and processing equipment to reach operational pressures and temperatures, as well as obtaining sufficient and stable equipment inlet flow to enable the equipment to perform to design criteria. Well clean-up and commissioning will also be carried out and gas export trunkline pressurisation and nitrogen (N₂) removal.

Routine production operations involve transfer of reservoir fluids, including gas and produced water from the reservoir, along with Mono Ethylene Glycol (MEG) injection at the wells, through the subsea infrastructure to the FPU; and gas export via the Trunkline.

Other activities include gravimetry surveys for the purposes of reservoir monitoring, as well as IMMR activities on the FPU, subsea infrastructure (excluding well intervention or well workover activities) and gas export trunkline, and other contingent activities.

Consultation Information Sheets

Consultation Information Sheets are attached, which provide additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Feedback

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **13 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,
Woodside Feedback

1.62 Email sent to [REDACTED], Shark Bay Aviation, Mac Attack Fishing Charters, Shark Bay Charters, Shark Bay Coastal Tours, Naturetime Tours, Perfect Nature Cruises, Shark Bay Community Resource Centre, Wula Gula

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Nyinda Eco Cultural Tours, Ocean Park, Tidal Moon, RAC Monkey Mia, Dirk Hartog Island (31 October 2023)

Dear Stakeholder,

Woodside recently met with the Shire of Shark Bay who advised you may be interested in and have feedback on the following proposed Woodside activities:

Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees. Woodside is planning to submit five-year revisions of the Ngujima-Yin FPSO Facility Operations and Pyrenees Facility Operations EPs:

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Scarborough Offshore Facility and Trunkline Operations EP:

Woodside is planning to submit the Scarborough Offshore Facility and Trunkline Operations Environment Plan which involves the installation of a Floating Production Unit (FPU) and complete subsequent hook-up and commissioning activities, prior to start-up and operations within Production Licences WA-61-L and WA-62-L. Gas from the FPU will be transferred through the gas export trunkline (the Trunkline - Pipeline Licence WA-32-PL) to the Pluto LNG Plant for further processing.

The FPU will be installed and connected to a pre-installed 20-point suction-piled mooring system and the riser pull-in(s) carried out. Hook-up and connection to subsea infrastructure will also occur, prior to commissioning.

The commissioning activity involves:

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- Dewatering and commissioning of the subsea production system, comprising wellheads, manifolds, flowlines, umbilicals, and communication lines.
- Activities to confirm the integrity of the entire interconnected facility, so it is ready for start-up (RFSU) with the introduction of reservoir hydrocarbons.

The FPU start-up consists of initiating the subsea production system and FPU to allow reservoir gas and processing equipment to reach operational pressures and temperatures, as well as obtaining sufficient and stable equipment inlet flow to enable the equipment to perform to design criteria. Well clean-up and commissioning will also be carried out and gas export trunkline pressurisation and nitrogen (N₂) removal.

Routine production operations involve transfer of reservoir fluids, including gas and produced water from the reservoir, along with Mono Ethylene Glycol (MEG) injection at the wells, through the subsea infrastructure to the FPU; and gas export via the Trunkline.

Other activities include gravimetry surveys for the purposes of reservoir monitoring, as well as IMMR activities on the FPU, subsea infrastructure (excluding well intervention or well workover activities) and gas export trunkline, and other contingent activities.

Consultation Information Sheets

Consultation Information Sheets are attached, which provide additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Feedback

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **13 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

Woodside Feedback

1.63 Email sent to Murujuga Aboriginal Corporation (MAC) (17 November 2023)

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Hi there [REDACTED]

I'm not sure if you have received this information already so my apologies if this is a double up.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

The summary information sheet explaining the activities we plan to undertake can be found [here](#), and detailed consultation information sheets can be found on the external Woodside website <https://www.woodside.com/sustainability/consultation-activities>

Woodside is seeking to understand the nature of the interests that MAC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

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- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know as soon as possible. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to MAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with MAC members, the MAC Board, Elders and office holders and any other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist MAC in any way to participate in these processes.

Kind regards

1.64 Email sent to Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) (23 October 2023)

Hi there [REDACTED]

I hope you are both well.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

The summary information sheet explaining the activities we plan to undertake can be found [here](#), and detailed consultation information sheets can be found on the external Woodside website <https://www.woodside.com/sustainability/consultation-activities>

Woodside is seeking to understand the nature of the interests that NTGAC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **20 November 2023** please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand

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consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to NTGAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with NTGAC members, the NTGAC Board, Elders and office holders and any other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist NTGAC in any way to participate in these processes.

Many thanks,

1.65 Email sent to Buurabalayji Thalanyji Aboriginal Corporation (BTAC) (11 October 2023)

Dear [REDACTED]

I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview:

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and

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Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that BTAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please also feel free to forward this email and the attached documents to BTAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with BTAC members, the BTAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist BTAC in any way to participate in these processes.

Yours sincerely

[REDACTED]

1.66 Email sent to Yinggarda Aboriginal Corporation (YAC) (11 October 2023)

Dear [REDACTED]

I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview_

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and

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Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that YAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to YAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with YAC members, the YAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist YAC in any way to participate in these processes.

Yours sincerely

[Redacted signature block]

1.67 Email sent to Kariyarra Aboriginal Corporation (18 October 2023)

Hi [Redacted]

I understand Woodside has not yet responded to your most recent email, however I feel it is important to send the most current environment plan information to Kariyarra Aboriginal Corporation for their awareness.

The attached Environment plan is for existing operating FPSO's and not a new project. Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.**

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Kariyarra Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 17-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Kariyarra Aboriginal Corporation members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Kariyarra Aboriginal Corporation members, the Kariyarra Aboriginal Corporation Board, elders and office holders and other interested parties.

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We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Kariyarra Aboriginal Corporation in any way to participate in these processes.

Regards,

██████

1.68 Email sent to Wirrawandi Aboriginal Corporation (WAC) (3 October 2023)

Good morning, ██████,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

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I have attached summary information sheets that explain the activities we plan to undertake.

Woodside is seeking to understand the nature of the interests that **WAC** and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **2nd November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to WAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with WAC members, the WAC Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist WAC in any way to participate in these processes.

Regards,

1.69 Email sent to Robe River Kuruma Aboriginal Corporation (RRKAC) (3 October 2023)

Good morning [REDACTED],

My name is [REDACTED], and I will be acting as the contact person for RRAK and for the rest of the groups in the Pilbara. [REDACTED] will now be focused on supporting the Corporations in the Northern Territory, so if there is anything you need, please reach out.

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Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

-  [Summary Information Sheet - Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs.pdf](#)

Woodside is seeking to understand the nature of the interests that **RRKAC** and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values

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- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **2nd November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to **RRAC** members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with **RRAC** members, the **RRAC** Board, elders and office holders and other interested parties.

As always, please be in contact if you require further information and if Woodside can assist **RRAC** in any way to participate in these processes.

I really look forward to working with yourself and the RRAC community Anthony. So, please contact me any time if you would like to discuss this or any other matter.

Regards,

██████████

1.70 Email sent to Ngarluma Aboriginal Corporation (NAC) (17 November 2023)

Hi there ██████████

My name is ██████████. It's great to virtually meet you. I understand NAC is under significant pressure at the moment and ██████████ has informed me that all EP related interactions will cease until after your AGM. I send this to you as information for your consideration and don't expect to hear back from you until the end of the month at the earliest. I have highlighted this EP as one to discuss and provided a link to the information sheet to ██████████ previously.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that

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may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

The summary information sheet explaining the activities we plan to undertake can be found [here](#), and detailed consultation information sheets can be found on the external Woodside website <https://www.woodside.com/sustainability/consultation-activities>

Woodside is seeking to understand the nature of the interests that NAC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know after your AGM has passed. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to NAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with NAC members, the NAC Board, Elders and office holders and any other interested parties.

We look forward to hearing from you and all the best for the AGM.

As always, please be in contact if you require further information and if Woodside can assist NAC in any way to participate in these processes.

Kind regards

1.71 Email sent to NYFL on behalf of both NYFL and Yindjibarndi Aboriginal Corporation (19 October 2023)

Good afternoon, [REDACTED],

It was great to see you [REDACTED] and [REDACTED] last week. As mentioned, we still need to continue to progress our Environmental Plans while the agreement modernisation project takes place. I have spoken with [REDACTED], and he mentioned that you had sent through a proposal on a new consultation framework. Are you available to meet in the next few weeks so we can sit with [REDACTED] and discuss?

I have attached information relating to our most recent EP which I have provided for the benefit of both NYFL and YAC. If you have any questions or would like to schedule a consultation session, please let me know.

Regards

[REDACTED]

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western**

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Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

-  [Summary Information Sheet - Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs.pdf](#)

Woodside is seeking to understand the nature of the interests that **NYFL & YAC** and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **20th November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand

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consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to **NYFL & YAC** members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with **NYFL & YAC** members, the **NYFL & YAC** Boards, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist **NYFL & YAC** in any way to participate in these processes.

Sincerely,

[Redacted signature]

1.72 Email sent to Wanparta Aboriginal Corporation (5 October 2023)

Hi [Redacted]

Following up on our discussion yesterday.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any Persons, who in accordance with Wanparta tradition, may have spiritual and cultural connections to the **Environment that May Be Affected** ('EMBA') by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

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The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Wanparta Aboriginal Corporation and its members may have in the EMBA by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Monday, **6 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Wanparta Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Wanparta Aboriginal Corporation Members, the Wanparta Aboriginal Corporation Board, elders and office holders and other interested parties.

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We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Wanparta Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.73 Email sent to Malgana Aboriginal Corporation (11 October 2023)

Dear [REDACTED]

I hope this message finds you well. I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north off the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview_

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

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In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that MAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to MAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with MAC members, the MAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist MAC in any way to participate in these processes.

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Yours sincerely

██████████

1.74 Email sent to Ngadju Native Title Aboriginal Corporation (16 October 2023)

Hi ██████████

I left a voice message earlier and after speaking with ██████████, I understand you are currently very busy. I am happy to talk you through the below information and if preferred, meet with Ngadju Native Title Aboriginal Corporation in Norseman or Perth to explain the new NOPSEMA guidelines, EMBA (Environment May Be Affected) and the Environment Plans (EP's).

Under the new NOPSEMA guidelines, Woodside Energy is required to engage with relevant PBC's that are included in an Environment Plan EMBA. These EMBA's are created using modelling of around 200 different scenarios and then a line is drawn around, to capture the 200 scenarios which in turn creates a large EMBA. The EMBA is West of Esperance however we generally reach out to Aboriginal Corporations that sit close by and the coastal Ngadju ILUA (East of Cape Adrid) is the reason we are sending Ngadju Native Title Aboriginal Corporation the EP information.

The attached Environment plan is for existing operating FPSO's and not for a new project, Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

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Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.**

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Ngadju Native Title Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 15-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Ngadju Native Title Aboriginal Corporation and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Ngadju Native Title Aboriginal

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Corporation members, the Ngadju Native Title Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Ngadju Native Title Aboriginal Corporation in any way to participate in these processes.

Regards,



1.75 Email sent to Balanggarra Aboriginal Corporation (2 October 2023)

Good afternoon Balanggarra Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Balanggarra Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Wednesday, **1 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Balanggarra Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Balanggarra Aboriginal Corporation Members, the Balanggarra Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Balanggarra Aboriginal Corporation in any way to participate in these processes.

Kind regards

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1.76 Email sent to Dambimangari Aboriginal Corporation (2 October 2023)

Good afternoon Dambimangari Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Dambimangari Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have

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environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Wednesday, **1 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Dambimangari Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Dambimangari Aboriginal Corporation Members, the Dambimangari Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Dambimangari Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.77 Email sent to Kimberley Land Council (19 October 2023)

Dear [REDACTED]

Nice to be writing to you although in a very different context to our past communications. As you see I am currently consulting with Woodside, it would be lovely to catch up at some stage when I am in Broome.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are due to the industry required 5-year revisions.

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We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests Kimberley Land Council (KLC) and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values.
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

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If you would like to speak with us, please let us know by 20 November 2023 please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to KLC, members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with KLC members, the KLC Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist KLC in any way to participate in these processes.

Kind regards

██████████

1.78 Email sent to Nanda Aboriginal Corporation (23 October 2023)

████████████████████

You would have received my previous email in relation to the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees EPs. This email contains the same information for you to provide to Nanda Aboriginal Corporation.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

The summary information sheet explaining the activities we plan to undertake can be found [here](#), and detailed consultation information sheets can be found on the external Woodside website <https://www.woodside.com/sustainability/consultation-activities>

Woodside is seeking to understand the nature of the interests that Nanda Aboriginal Corporation (Nanda) and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **20 November 2023** please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Nanda members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Nanda members, the Nanda Board, Elders and office holders and any other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Nanda in any way to participate in these processes.

Many thanks

1.79 Email sent to Gogolanyngor Aboriginal Corporation (GAC) (6 October 2023)

Hi [REDACTED]

Hope all is well mate.

I will be up in Broome next week and if you are in Broome on R&R, maybe we can have lunch.

The attached Environment plan is for existing operating FPSO's and not for a new project. Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

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Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.**

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Gogolanyngor Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 6-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Gogolanyngor Aboriginal Corporation and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Gogolanyngor Aboriginal Corporation

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members, the Gogolanyngor Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Gogolanyngor Aboriginal Corporation in any way to participate in these processes.

Regards,



1.80 Email sent to Wanjina-Wunggurr (Native Title) Aboriginal Corporation (WWAC) (2 October 2023)

Good afternoon Wanjina-Wunggurr (Native Title) Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Wanjina-Wunggurr (Native Title) Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Wednesday, **1 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Wanjina-Wunggurr (Native Title) Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Wanjina-Wunggurr (Native Title) Aboriginal Corporation Members, the Wanjina-Wunggurr (Native Title) Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Wanjina-Wunggurr (Native Title) Aboriginal Corporation in any way to participate in these processes.

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Kind regards



1.81 Email sent to Karajarri Traditional Lands Association (Aboriginal Corporation) (KTLA) (2 October 2023)

Good afternoon Karajarri Traditional Lands Association,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

Ngujima-Yin & Pyrenees Floating Production Storage and Offloading (FPSO) Facility Operations

Woodside is seeking to understand the nature of the interests that Karajarri Traditional Lands Association and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Wednesday, 1 November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Karajarri Traditional Lands Association Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Karajarri Traditional Lands Association Members, the Karajarri Traditional Lands Association Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Karajarri Traditional Lands Association in any way to participate in these processes.

Kind regards

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1.82 Email sent to Mayala Inninalang Aboriginal Corporation (13 October 2023)

Good afternoon Mayala Inninalang Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

Ngujima-Yin & Pyrenees Floating Production Storage and Offloading (FPSO) Facility Operations

Woodside is seeking to understand the nature of the interests that Mayala Inninalang Aboriginal Corporation and its members may have in the 'environment that may be affected'

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(EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Monday, **13 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below,

to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Mayala Inninalang Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Mayala Inninalang Aboriginal Corporation Members, the Mayala Inninalang Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Mayala Inninalang Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.83 Email sent to Nyangumarta Warrarn Aboriginal Corporation (2 October 2023)

Good afternoon Nyangumarta Warrarn Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

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The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

Ngujima-Yin & Pyrenees Floating Production Storage and Offloading (FPSO) Facility Operations

Woodside is seeking to understand the nature of the interests that Nyangumarta Warrarn Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

- If you would like to speak with us, please let us know by Wednesday, 1 November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled Consultation on offshore petroleum environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Nyangumarta Warrarn Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Nyangumarta Warrarn Aboriginal Corporation members, the Nyangumarta Warrarn Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Nyangumarta Warrarn Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.84 Email sent to Nyangumarta Karajarri Aboriginal Corporation (13 October 2023)

Good afternoon Nyangumarta Karajarri Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Nyangumarta Karajarri Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Monday, **13 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

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Please also feel free to forward this email and the attached documents to Nyangumarta Karajarri Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Nyangumarta Karajarri Aboriginal Corporation Members, the Nyangumarta Karajarri Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Nyangumarta Karajarri Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.85 Email sent to Yawuru Native Title Holders Aboriginal Corporation (19 October 2023)

Dear [REDACTED]

Hello, we haven't spoken in a while, I am currently consulting with Woodside and will be the focal for Yawuru Prescribed Body Corporate (Yawuru PBC). I very much look forward to us meeting up again.

Below is information for Yawuru PBC in relation to some planned Woodside activities. Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are due to the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests Yawuru PBC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values.
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 20 November 2023 please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Yawuru PBC, members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Yawuru PBC members, the Yawuru PBC Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Yawuru PBC in any way to participate in these processes.

Kind regards

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1.86 Email sent to Esperance Tjaltjraak Native Title Aboriginal Corporation (3 October 2023)

Good morning [REDACTED],

As mentioned, Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

-  [Summary Information Sheet - Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs.pdf](#)

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Woodside is seeking to understand the nature of the interests that **ETNTAC** and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **2nd November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to **ETNTAC** members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with **ETNTAC** members, the **ETNTAC** Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist **ETNTAC** in any way to participate in these processes.

Regards,

██████████

1.87 Email sent to Bundi Yamatji Aboriginal Corporation (11 October 2023)

Dear ██████████

Further to our correspondence below about Woodside's decommissioning and project activities, I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions.

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We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that BYAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is

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set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to BYAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with BYAC members, the BYAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist BYAC in any way to participate in these processes.

Yours sincerely

■

1.88 Email to Gnaala Karla Booja Aboriginal Corporation (11 October 2023)

Dear ■

Further to our discussion earlier today, I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions. While these operations are located in the Pilbara region, modelling can indicate that the 'environment that may be affected' (EMBA) from an unlikely unplanned event associated with Woodside's offshore activities could, depending on the currents, wind and tide for example, extend to the south of WA.

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We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that GKBAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is

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set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

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Please also feel free to forward this email and the attached documents to GKBAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with GKBAC members, the GKBAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist GKBAC in any way to participate in these processes.

Yours sincerely

1.89 Email to Karri Karrak Aboriginal Corporation (11 October 2023)

Dear [REDACTED]

Further to my email of 15 September regarding Woodside's offshore Stybarrow Plug and Abandonment Activity, I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that

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may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that KKAC and its members may have in the 'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values

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- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 11 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please also feel free to forward this email and the attached documents to KKAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with KKAC members, the KKAC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and as always, please be in contact if you require further information and if Woodside can assist KKAC in any way to participate in these processes.

Yours sincerely

1.90 Email to Wagyl Kaip Southern Noongar Aboriginal Corporation (31 October 2023)

Dear [REDACTED]

By way of introduction my name is [REDACTED] and I work in Woodside's First Nations Relations Team. I hope this messages finds you well.

Peter from Esperance Tjaltjraak Native Title Aboriginal Corporation was kind enough to share your contact details with us.

I write regarding Woodside's Pyrenees and Ngujima-Yin operations, located 45 and 57km north of the Exmouth coast.

Woodside is planning to submit five-year revisions of the Ngujima-Yin and Pyrenees operations environment plans (EPs). Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively, and the EPs being submitted are the industry required 5 year revisions. While these operations are located in the Pilbara region, modelling can indicate that the 'environment that may be affected' (EMBA) from an unlikely unplanned

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event associated with Woodside's offshore activities could, depending on the currents, wind and tide for example, extend to the south of WA. These EMBA's are created using modelling of approximately 200 various scenarios and then a line is drawn around these 200 scenarios, which in turn creates a large EMBA.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected (EMBA) by these activities that have not yet been afforded the opportunity to provide information that may inform the management of the activities.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found at the link below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that WКСN AC has in its own right, and the Traditional Custodians that WКСN AC represents, may have in the

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'environment that may be affected' (EMBA) by the activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information and consultation information sheet. In particular, we are interested in hearing:

- how the activity could impact WКСN AC interests, activities and / or cultural values, and those of the Traditional Custodians that WКСN AC represents
- WКСN AC concerns, and the concerns of the Traditional Custodians that WКСN AC represents, about the proposed activity and what should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 30 November 2023, and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please also forward this email and the attached documents to WКСN AC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with WКСN AC members, the WКСN AC Board, elders and office holders and other interested parties.

We look forward to hearing from you, and please be in contact if you require further information and if Woodside can assist WКСN AC in any way to participate in these processes.

Yours sincerely,

1.91 Email sent to Whadjuk Aboriginal Corporation (9 October 2023)

Hello [REDACTED]

I hope you are both well.

Woodside is seeking to consult with Whadjuk Aboriginal Corporation with regards to two Environment Plans, for continued operation of existing operating facilities that are located north of Exmouth.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's).

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Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry-required 5 year revisions.

I am writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached the summary information sheet that explains the activities we plan to undertake, and detailed consultation information sheets can be found at the link below:

- [Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs](#)

Woodside is seeking to understand the nature of the interests that Whadjuk Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns

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- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **10 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below,

to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Whadjuk members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Whadjuk members, the Whadjuk Board, Cultural Advice Committee, office holders and other interested parties.

I look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Whadjuk AC in any way to participate in these processes.

Kind regards,

██████████

1.92 Email sent to Yued Aboriginal Corporation (9 October 2023)

Hello ██████████,

As discussed last week, Woodside is seeking to consult with Yued with regards to a further two Environment Plans. Both of these EPs are for continued operation of existing operating facilities that are located north of Exmouth.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry-required 5 year revisions.

I am writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

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Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached the summary information sheet that explains the activities we plan to undertake, and detailed consultation information sheets can be found at the link below:

- [Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs](#)

Woodside is seeking to understand the nature of the interests that Yued Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by **10 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [*Consultation on offshore petroleum environment plans – Information for the Community*](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please also feel free to forward this email and the attached documents to Yued AC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Yued members, the Yued Board, Cultural Advice Committee, office holders and other interested parties.

I look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Yued AC in any way to participate in these processes.

Kind regards,

██████

1.93 Email sent to Kunin (Native Title) Aboriginal Corporation (19 October 2023)

Dear ██████

Hello, we haven't spoken in a while, I am currently consulting with Woodside and will be the focal for Yawuru Prescribed Body Corporate (Yawuru PBC). I very much look forward to us meeting up again.

Below is information for Yawuru PBC in relation to some planned Woodside activities.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are due to the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests Yawuru PBC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values.
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 20 November 2023 please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below,

to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Yawuru PBC, members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Yawuru PBC members, the Yawuru PBC Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Yawuru PBC in any way to participate in these processes.

Kind regards

██████████

1.94 Email to Wilinggin Aboriginal Corporation (13 October 2023)

Good afternoon Wilinggin Aboriginal Corporation,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's).

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Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

Ngujima-Yin & Pyrenees Floating Production Storage and Offloading (FPSO) Facility Operations

Woodside is seeking to understand the nature of the interests that Wilinggin Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.

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- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Monday, **13 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Wilinggin Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Wilinggin Aboriginal Corporation Members, the Wilinggin Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Wilinggin Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.95 Email to Mirning Traditional Lands Aboriginal Corporation (4 October 2023)

Dear [REDACTED]

By way of introduction, I work with Woodside in the company's First Nations relationships team. Woodside is a global energy company headquartered in Perth, with projects and operations off the north west coast of Western Australia, and onshore in the Pilbara at Onslow and Murujuga (Burrup Peninsula).

Further information about Woodside and the company's activities can be found here <https://www.woodside.com/sustainability/consultation-activities>.

I am writing to seek to establish Woodside's relationship with the Mirning People and to ask whether and how the group may like to consult with Woodside about some of the company's offshore activities. I have spoken to your Executive Assistant who kindly recommended I send through this information for your review and feedback. If you have any questions at all, please don't hesitate to reach out as I am more than happy to assist. I am available to meet in person or via Teams, whichever is more suitable to you and your team.

While Woodside's activities are located in the Pilbara region, our modelling can indicate that the 'environment that may be affected' (EMBA) from a highly unlikely unplanned event associated with our offshore activities could, depending on the currents, wind and tide for example, extend to the south of WA. Considering this, we are seeking to establish our

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relationship with the Mirning People as the basis for consulting about these activities, particularly in relation to the nature of Mirning People interests in the EMBA by some of Woodside's activities, cultural values in the EMBA that you may like to inform Woodside about, any concerns you may have, suggested management measures, and whether there are other people and organisations that you think Woodside should consult with.

The EMBA by our Pyrenees and Ngujima-Yin oil operations, located 45 and 57km north of the Exmouth coast, are two examples of where the EMBA by Woodside's activities extends to the south of WA.

Woodside started operating Pyrenees in 2010, and Ngujima-Yin in 2008, and is planning to submit a five-yearly revision of the Environment Plans (EPs) for these operations to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA). I have attached for your review a summary information sheet and a link to the more detailed consultation information sheet, both of which contain information about the EMBA by these operations and inviting consultation and feedback. The EMBA associated with these activities extends to the east of Albany.

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

In the first instance, we are seeking to understand whether the Mirning People would like to consult with Woodside about the EMBA by the Pyrenees and Ngujima-Yin operations, and if you would like to consult, your expectations of Woodside in conducting consultation and how you would like consultation to be conducted. We would also like to know whether there are other individuals or organisations that you think Woodside should consult with about these matters. We are seeking this initial feedback by the **3rd November 2023**. Alternatively, you can provide feedback to NOPSEMA at communications@nopsema.gov.au or by calling **(08) 6188 8700**. If you require any assistance from Woodside to undertake consultation, please let me know. **Woodside would be pleased to support consultations by way of paying the Mirning People's reasonable costs, and providing other support that the group may require.**

I will telephone you next week to introduce myself, discuss these matters, and to answer any initial questions. In the meantime, please feel free to contact me on the details below. I have also provided a link below to the NOPSEMA consultation guidelines that provide important context in relation to these matters.

[Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](https://www.nopsema.gov.au/consultation-guidelines)

I look forward to talking with you next week and thank you for taking the time to consider this correspondence.

Warm regards,

1.96 Email sent to Wunambal Gaambera Aboriginal Corporation (WGAC) (2 November 2023)

Good afternoon Wunambal Gaambera Aboriginal Corporation,

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Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Wunambal Gaambera Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values

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- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by Wednesday, **1 November 2023** and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Wunambal Gaambera Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Wunambal Gaambera Aboriginal Corporation Members, the Wunambal Gaambera Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Wunambal Gaambera Aboriginal Corporation in any way to participate in these processes.

1.97 Email sent to Nyul Nyul PBC Aboriginal Corporation (NNAC) (6 October 2023)

Dear [REDACTED]

I hope this email finds you well.

I and a colleague will be visiting the Dampier Peninsula next week (Tuesday and Wednesday) and would be keen to meet and introduce ourselves if you had time.

The attached Environment plan is for existing operating FPSO's and not for a new project. Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees. The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Nyul Nyul Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

how the activity could impact your interests and activities and/or your cultural values
your concerns about the proposed activity and what you think we should do about those concerns

whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 6-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled Consultation on offshore petroleum environment plans – Information for the Community to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

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Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Nyul Nyul Aboriginal Corporation and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Nyul Nyul Aboriginal Corporation members, the Nyul Nyul Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Nyul Nyul Aboriginal Corporation in any way to participate in these processes.

Regards,

██████

1.98 Email sent to Lombadina Aboriginal Corporation (LAC) (6 October 2023)

Hi ██████

Thanks for the chat earlier.

As mentioned, I and a colleague will be visiting the Dampier Peninsula next week (Tuesday and Wednesday) and it would be good to pop in and say hi and explain a little in relation to consultation.

The attached Environment plan is for existing operating FPSO's and not for a new project. Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

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Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.**

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Lombadina Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 6-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Lombadina Aboriginal Corporation and other people and organisations who you think may be interested as required. Woodside would be happy to speak Lombadina Aboriginal Corporation

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members, the Lombadina Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Lombadina Aboriginal Corporation in any way to participate in these processes.

Regards,

██████

1.99 Email sent to to Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC) (23 November 2023)

Good afternoon ██████,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5-year revisions. We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance, and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and

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unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

[Ngujima-Yin & Pyrenees Floating Production Storage and Offloading \(FPSO\) Facility Operations](#)

Woodside is seeking to understand the nature of the interests that Badi & Jawi Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns.
- whether there are any other individuals, groups, or organisations you think we should talk to.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Badi & Jawi Aboriginal Corporation Members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Badi & Jawi Aboriginal Corporation Members, the Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist the Badi & Jawi Aboriginal Corporation in any way to participate in these processes.

Kind regards

1.100 Email sent to Amateur Fishermen's Association of the NT (15 December 2023)

Dear Amateur Fishermen's Association of the NT,
Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the

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time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with</p>

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		each of the proposed activities will be subject to a future separate EP.
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds

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	<ul style="list-style-type: none"> • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **19 January 2024**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum](#)

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[environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,
Woodside Energy Feedback

1.101 Email sent to Northern Territory Department of Infrastructure, Planning and Logistics (Marine Safety); Department of Territory Families, Housing and Communities (Heritage); Department of Infrastructure, Tourism and Trade (Aquatic Biosecurity); Indian Ocean Territories Regional Development Organisation; Port of Christmas Island; Christmas Island Business Association (15 December 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a

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		<p>neighboring field to the facility.</p> <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>
Exclusionary/ Cautionary Zone	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>

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<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
<p>Vessels</p>	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **19 January 2024**.

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Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

Woodside Energy Feedback

1.102 Email sent to Department of Infrastructure, Transport, Regional Development, Communications and the Arts; Christmas Island Fisheries Advisory Committee (15 December 2023)

Dear Stakeholder,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

We have identified potential impacts to active commercial fishers and the environment, which are summarised below. We have endeavoured to reduce these risks to an as low as reasonably practicable level.

Fisheries have been identified as being relevant based on fishing licence overlap, assessment of government fishing effort data (including Fishcube and AFMA) from recent years, fishing methods and water depth.

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
<p>Summary</p>	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>Continuation of activities:</p> <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
<p>Permit Area</p>	<p>Activities will occur within Production Licenses WA-42-L and WA-43-L.</p>	<p>Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.</p>

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Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.
Exclusionary/ Cautionary Zone	The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.	The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.
Infrastructure	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) 	Key infrastructure includes, but is not limited to: <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps

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	<ul style="list-style-type: none"> • Flexible Flowlines and Jumpers • Subsea support structures. 	<ul style="list-style-type: none"> • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery</p>	<p><u>Commonwealth fisheries</u></p> <p>Operational Area: Nil</p> <p>EMBA: North West Slope Trawl Fishery, Northern Prawn Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish Fishery, Christmas Island Line Fishery, Cocos (Keeling) Islands Marine Aquarium Fish Fishery</p>

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **19 January 2024**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)*. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Kind regards,

Woodside Energy Feedback

1.103 Email sent to Northern Territory Seafood Council (NTSC) (15 December 2023)

Dear Northern Territory Seafood Council,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

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The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

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Exclusionary / Cautionary Zones

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For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and 	Continuation of activities: <ul style="list-style-type: none"> Routine oil production, crude oil offloading and associated activities; Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and

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	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.
Relevant fisheries	<p>Northern Territory Fisheries Operational Area: Nil EMBA: Nil</p>	<p>Northern Territory Fisheries Operational Area: Nil EMBA: Northern Territory Demersal Managed Fishery, Northern Territory Offshore Net and Line Managed Fishery, Northern Territory Spanish Mackerel Managed Fishery, Northern Territory Aquarium Managed Fishery, Northern Territory Aquaculture Managed Fishery, Northern Territory Mollusc Managed Fishery and Northern Territory Mud Crab Managed Fishery management areas overlap the EMBA but have not been active in the EMBA in the past 5 years.</p>

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **19 January 2024**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,
Woodside Energy Feedback

1.104 Email sent to Northern Territory Guided Fishing Industry Association (18 December 2023)

Dear [REDACTED] and the Northern Territory Guided Fishing Industry Association,

Thank you for your time on the phone this morning.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

We are consulting you as the EMBA for the Ngujima-Yin FPSO Facility Operations EP extends into Northern Territory waters (see attached image). We would appreciate your advice on whether we should also engage individual charter operators regarding this activity.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs.

For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance

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	<p>and repair (IMMR) of the FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>and repair (IMMR) of the FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	Production Commenced: 2010 Routine Operations: Ongoing Estimated End of Field Life: 2035.	Production Commenced: 2008 Routine Operations: Ongoing Estimated End of Field Life: 2028.

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assembly (UTA) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> • One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> • Supply and support vessels • Offtake tankers • IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the operational EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **22 January 2024**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

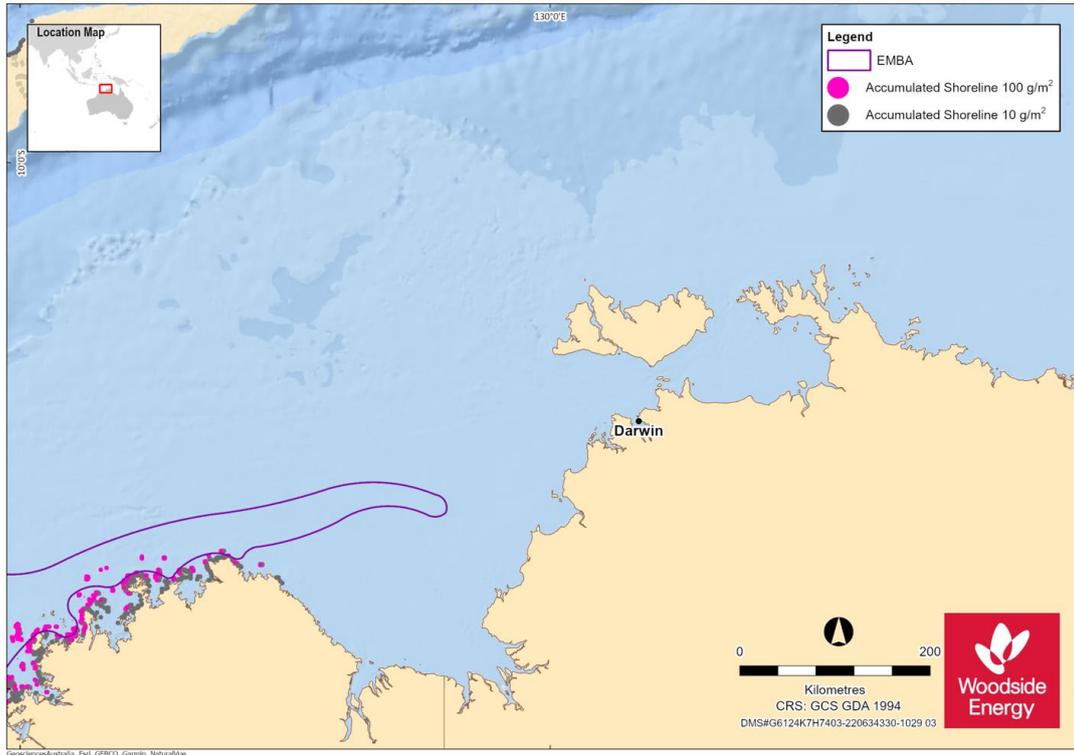
The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,



Woodside Energy Feedback

1.105 Map sent to Northern Territory Guided Fishing Industry Association (18 December 2023)



1.106 Email sent to Port of Cocos (Keeling) Island (18 December 2023)

Dear [REDACTED], on behalf of Port of Cocos (Keeling) Island,

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

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Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

A **Consultation Information Sheet** is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. These are also available on our [website](#). You can also choose to receive updates on our consultation activities by subscribing [here](#).

Activity: Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans

Environment Plan	Pyrenees Facility Operations	Ngujima-Yin Facility Operations
Summary	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance 	Continuation of activities: <ul style="list-style-type: none"> • Routine oil production, crude oil offloading and associated activities; • Routine inspection, monitoring, maintenance

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	<p>and repair (IMMR) of the FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. 	<p>and repair (IMMR) of the FPSOs and associated subsea infrastructure; and</p> <ul style="list-style-type: none"> • Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place. <p>Future development activities are being considered for the Ngujima-Yin FPSO including:</p> <ul style="list-style-type: none"> • A subsea tie back of two new wells to existing subsea infrastructure; and • A new flowline to provide fuel gas from a neighboring field to the facility. <p>The revised Operations EP will account for production from the additional two proposed wells via a subsea tieback and the operation of a new fuel gas flowline.</p> <p>The drilling, installation and commissioning associated with each of the proposed activities will be subject to a future separate EP.</p>
Permit Area	Activities will occur within Production Licenses WA-42-L and WA-43-L.	Activities will occur within Production Licenses WA-28-L and WA-59-L and Pipeline License WA-28-PL.
Location	~ 45 km north of Exmouth.	~ 57 km north of Exmouth.
Approx. Water Depth (m)	~ 180 to 215 m.	~ 340 to 850 m.
Schedule	<p>Production Commenced: 2010.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2035.</p>	<p>Production Commenced: 2008.</p> <p>Routine Operations: Ongoing.</p> <p>Estimated End of Field Life: 2028.</p>

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<p>Exclusionary/ Cautionary Zone</p>	<p>The location of the Pyrenees FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>	<p>The location of the Ngujima-Yin FPSO and associated subsea infrastructure is marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone). For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel.</p> <p>Vessels may not enter the exclusion zone without permission from the FPSO. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around the FPSO.</p>
<p>Infrastructure</p>	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 11 flexible risers and 2 umbilical risers distributed across 4 Midwater Arches and 1 flexible riser with buoyancy modules • 27 Xmas trees/wells • 10 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible Flowlines and Jumpers • Subsea support structures. 	<p>Key infrastructure includes, but is not limited to:</p> <ul style="list-style-type: none"> • 1 FPSO • 1 Disconnectable Turret Mooring system, incorporating the risers • 6 flexible risers with buoyancy modules • 28 Xmas trees/wells • 4 Manifolds • Power and Control umbilicals • Umbilical Termination Assemblies (UTAs) • Flexible and Rigid Flowlines and Jumpers • Multi-Phase Pumps • Subsea pig launch and receiver facility • Subsea support structures. <p>Potential new infrastructure that could be installed in the next five years:</p> <ul style="list-style-type: none"> • Two new wells

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		<ul style="list-style-type: none"> One new flowline supplying fuel gas from either Pyrenees or Macedon.
Vessels	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels. 	<p>Key vessels include, but are not limited to:</p> <ul style="list-style-type: none"> Supply and support vessels Offtake tankers IMMR support vessels including multi-purpose support vessels.

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **22 January 2024**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Kind regards,

██████

Woodside Energy Feedback

1.107 Email sent to Department of Transport (21 December 2023)

Dear ██████,

As part of Woodside’s ongoing consultation for its current and planned activities, I would like to advise WA Department of Transport (DoT) that Woodside is preparing the five-year revision of the Ngujima-Yin FPSO Facility Operations *Environment Plan* (EP). Ngujima-Yin FPSO Facility Operations EP involves the continued production of crude oil at the Ngujima-

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Yin Facilities. The Ngujima-Yin FPSO is located about 57 km north of Exmouth, Western Australia.

Woodside would like to offer DoT the opportunity to review or provide comment on the activity.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available [here](#) (please note that the Information Sheet is combined with information for the Pyrenees)
- The Ngujima-Yin FPSO Facility Operations *Oil Pollution First Strike Plan* is also attached. This will form part of the approval submission in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).
- In the table below, as requested in the *Offshore Petroleum Industry Guidance Note* (July 2020) and from recent engagement activities between DoT and Woodside, responses to the information requirements are presented in a succinct summary.

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Many thanks,

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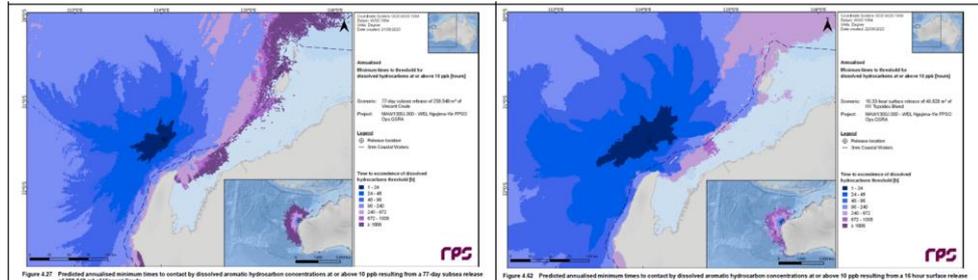


Figure 4.27 Predicted annualised minimum times to contact by dissolved aromatic hydrocarbon concentrations at or above 10 ppb resulting from a 77-day surface release of 238,343 m³ of Woodside Crude

Figure 4.42 Predicted annualised minimum times to contact by dissolved aromatic hydrocarbon concentrations at or above 10 ppb resulting from a 16-hour surface release of 46,628 m³ of Woodside Crude

Dissolved hydrocarbons at the low threshold (10 ppb) are predicted to cross into State waters within 48-96 hours

Dissolved hydrocarbons at the low threshold (10 ppb) are predicted to cross into State waters within 24-48 hours

<p>Details on testing of arrangements of OPEP/OSCP.</p>	<p>Level 1 Response – Two comprehensive Level 1 ‘First Strike’ drills conducted per year, per asset. Additional, Level 1 emergency drills routinely conducted (approximately one per fortnight).</p> <p>Level 2 Response – A minimum of one Emergency Management exercise is conducted biennially.</p> <p>Level 3 Response – the number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Emergency Management.</p> <p>Testing of Oil Spill Response Arrangements</p> <p>Woodside’s arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:</p> <p>Ensure relevant responders, contractors and key personnel understand and practice their assigned roles and responsibilities.</p> <p>Test response arrangements and actions to validate response plans.</p> <p>Ensure lessons learned are incorporated into Woodside’s processes and procedures and improvements are made where required.</p> <p>Woodside’s Testing of Arrangements Schedule aligns with international good practice for spill preparedness and response management; the testing is compatible with the IPIECA Good Practice Guide and the Australian Institute for Disaster Resilience (AIDR) Australian Emergency Management Arrangements Handbook. If a spill occurs, enacting these arrangements will underpin Woodside’s ability to implement a response across its petroleum activities.</p> <p>The hydrocarbon spill arrangements included within the schedule are tested against Woodside’s regulatory commitments. Each arrangement has a support agency/company and an area to be tested (e.g. capability, equipment and personnel). For example, an arrangement could be to test Woodside’s personnel capability for conducting scientific monitoring, or the ability of the Australian Marine Oil Spill Centre to provide response personnel and equipment.</p> <p>If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable.</p> <p>In addition to the testing of response capability within the schedule, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.</p> <p>Some arrangements may be tested across multiple exercises (e.g. critical arrangements) or via other ‘additional assurance’ methods outside the formal Testing of Arrangements Schedule that also constitute sufficient evidence of testing of arrangements (e.g. audits, no-notice drills, internal exercises, assurance drills).</p>
<p>Additional comments</p>	<p>Please note some of the links in the document are still being finalised, and as such may show a reference error in the attached version.</p>

1.108 Email sent to AMSA – Marine Pollution (21 December 2023)

Dear [REDACTED]

As part of Woodside’s ongoing consultation for its current and planned activities, I would like to advise Australia Maritime Safety Authority (AMSA) that Woodside is preparing the five-year revision of the Ngujima-Yin FPSO Facility Operations *Environment Plan* (EP). Ngujima-Yin FPSO Facility Operations EP involves the continued production of crude oil at the Ngujima-Yin Facilities. The Ngujima-Yin FPSO is located about 57 km north of Exmouth, Western Australia.

Woodside would like to offer AMSA the opportunity to review or provide comment on the activity.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available [here](#) (please note that the Information Sheet is combined with information for the Pyrenees)
- The Ngujima-Yin FPSO Facility Operations *Oil Pollution First Strike Plan* is also attached. This will form part of the approval submission in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

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If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plan which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

Many thanks,

1.109 Email sent to Yamatji Marlpa Aboriginal Corporation (YMAC) (23 October 2023)

Hi there [REDACTED]

I hope you are both well.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's). Both FPSO's, Ngujima-Yin and Pyrenees have been in operation since 2008 and 2010 respectively and the EPs being submitted are the industry required 5 year revisions.

We are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing from the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began** in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

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- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

The summary information sheet explaining the activities we plan to undertake can be found [here](#), and detailed consultation information sheets can be found on the external Woodside website <https://www.woodside.com/sustainability/consultation-activities>

Woodside is seeking to understand the nature of the interests that NTGAC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.
-

If you would like to speak with us, please let us know by **20 November 2023** please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below,

to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to NTGAC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with NTGAC members, the NTGAC Board, Elders and office holders and any other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist NTGAC in any way to participate in these processes.

Many thanks

1.110 Email sent to Daly River Port Keats Aboriginal Land Trust (DRPKALT) (18 December 2023)

Dear Daly River/Port Keats Aboriginal Lands Trust

The attached Environment plan is for existing operating FPSO's and not a new project. Ngujima-Yin (NY) commenced operation in 2008, however Woodside are required to submit 5 yearly revision plans. The EP covers Ngujima Yin (located 57 km north of Exmouth WA) and Pyrenees however only the Ngujima Yin EMBA nears the Northern Territory.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations, we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

Overview

Ngujima Yin EP is being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin FPSO facility.

The activities that will continue at the FPSO are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Daly River/Keats Aboriginal Lands Trust and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values

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- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by end of January 2024 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

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Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Daly River/Keats Aboriginal Lands Trust members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Daly River/Keats Aboriginal Lands Trust members, the Daly River/Keats Aboriginal Lands Trust, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Daly River/Keats Aboriginal Lands Trust in any way to participate in these processes.

1.111 Email sent to Larrakia Development Corporation (LDC)

Hi [REDACTED]

Hope all is well in Darwin.

The EMBA for this EP only just enters into the Northern Territory, however as mentioned when we met, we will keep Larrakia Development updated on Woodside activities. The EP covers Ngujima Yin (located 57 km north of Exmouth WA) and Pyrenees however only the Ngujima Yin EMBA nears the Northern Territory

The attached Environment plan is for existing operating FPSO's and not a new project. Ngujima-Yin (NY) commenced operation in 2008, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations, we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western**

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Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin FPSO facility.

The activities that will continue at the FPSO are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that Larrakia Development Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by end of January 2024 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below,

to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

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Please also feel free to forward this email and the attached documents to Larrakia Development Corporation members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Larrakia Development Corporation members, the Larrakia Development Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Larrakia Development Corporation in any way to participate in these processes.

1.112 Email sent to Top End (Default) Aboriginal Corporation (TE(D)AC)

Dear Top End Aboriginal Corporation

The attached Environment plan is for existing operating FPSO's and not a new project. Ngujima-Yin (NY) commenced operation in 2008, however Woodside are required to submit 5 yearly revision plans. The EP covers Ngujima Yin (located 57 km north of Exmouth WA) and Pyrenees however only the Ngujima Yin EMBA nears the Northern Territory.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations, we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

Overview

Ngujima Yin EP is being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin FPSO facility.

The activities that will continue at the FPSO are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

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Woodside is seeking to understand the nature of the interests that Top End Aboriginal Corporation and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by end of January 2024 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to Top End Aboriginal Corporation members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with Top End Aboriginal Corporation members, the Top End Aboriginal Corporation Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist Top End Aboriginal Corporation in any way to participate in these processes.

1.113 Email sent to Northern Land Council

Hi [REDACTED]

I was hoping to discuss our environment plans that include relevancy to the Northern Territory due to large EMBA's, but unfortunately we did not get a chance to meet during our two NT visits.

Woodside uses 200 scenarios to create an EMBA, which creates EMBA's that can at times cover very large areas.

Using NOPSEMA's relevance methodology our Ngujima Yin environment plan has identified a few groups which I am led to believe the Northern Land Council (NLC) is the focal point. Please advise me if this is incorrect and or if you prefer we sent information directly to the Aboriginal Corporations/ Aboriginal Lands Trust. Likewise, if you believe our relevance check has missed any relevant Aboriginal Corporations/Groups, please let us know. Craig Bonney mentioned some time ago, you were looking at identifying someone within the NLC to handle

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these EPs and if this has occurred, could you please advise if I should be sending information to another NLC person.

I am sending you three emails, one each for Top End Aboriginal Corporation, Spirit Hills and Daly River/Keats Aboriginal Lands Trust and ask that you forward these on to the right contacts in each individual group.

I have included the EP information below and attached a copy of the environment plan (EP) summary sheet for Northern Land Council's knowledge/awareness.

The attached Environment plan is for existing operating FPSO's and not a new project. Ngujima-Yin (NY) commenced operation in 2008, however Woodside are required to submit 5 yearly revision plans. The EP covers Ngujima Yin (located 57 km north of Exmouth WA) and Pyrenees however only the Ngujima Yin EMBA nears the Northern Territory.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations, we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

Overview

Ngujima Yin EP is being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin FPSO facility.

The activities that will continue at the FPSO are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

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Woodside is seeking to understand the nature of the interests that NLC and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by end of January 2024 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to NLC members and other people and organisations who you think may be interested as required. Woodside would be happy to speak with NLC members, the NLC Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist NLC in any way to participate in these processes.

Not knowing if you read emails from top to bottom or vice versa, I will include this email at both ends.

1.114 Email sent to Yawoorroong Miriuwung Gajerrong Yirrgeb Noong Dawang (MG Corp)

Dear [REDACTED]

Hope all is well [REDACTED] and once again, thank you for allowing [REDACTED] and I to meet 18-September with yourself and directors.

The attached Environment plan is for existing operating FPSO's and not for a new project. Ngujima-Yin commenced operation in 2008 and Pyrenees 2010, however Woodside are required to submit 5 yearly revision plans.

Woodside is planning to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees environment plans (EP's), we are writing to you to ask if you are aware of any people, who in accordance with Indigenous tradition, may have spiritual and cultural connections to the environment that

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may be affected by the activity that have not yet been afforded the opportunity to provide information that may inform the management of the activity.

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of **Exmouth, Western Australia**, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of **Exmouth, Western Australia**, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin FPSO facilities. **Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.**

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities,
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned activities and unplanned events. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the EP.

I have attached summary information sheets that explain the activities we plan to undertake, and detailed consultation information sheets can be found at the links below:

https://www.woodside.com/docs/default-source/current-consultation-activities/pyrenees-and-ngujimaef4471d4-d7f8-45cd-ab3b-df83bf2fde53.pdf?sfvrsn=319bbb00_5

Woodside is seeking to understand the nature of the interests that MG Corp and its members may have in the 'environment that may be affected' (EMBA) by this activity. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheets and consultation information sheets. In particular, we are interested in hearing:

- how the activity could impact your interests and activities and/or your cultural values
- your concerns about the proposed activity and what you think we should do about those concerns
- whether there are any other individuals, groups, or organisations you think we should talk to.

If you would like to speak with us, please let us know by 6-November 2023 and please also advise of your preferred method of consultation. If there is any support or specific information that you require as part of our engagement, please let me know as soon as possible.

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The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled *Consultation on offshore petroleum environment plans – Information for the Community* to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation. Please click on the italicised text above to access this document.

Please provide feedback directly to me on the details below, to Feedback@woodside.com.au, by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please also feel free to forward this email and the attached documents to MG Corp and other people and organisations who you think may be interested as required. Woodside would be happy to speak with MG Corp members, the MG Corp Board, elders and office holders and other interested parties.

We look forward to hearing from you.

As always, please be in contact if you require further information and if Woodside can assist MG Corp in any way to participate in these processes.

2. Additional Consultation

2.1 Email sent to Australian Border Force (ABF), Department of Foreign Affairs and Trade (DFAT), Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Industry, Science and Resources (DISR), Department of Planning, Lands and Heritage (DPLH), Department of Defence (DoD), Department of Mines, Industry Regulation and Safety (DMIRS), Australian Energy Producers (AEP – formerly Australian Petroleum Production and Exploration Association), University of Western Australia (UWA), Western Australian Marine Science Institution (WAMSI), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australian Hydrographic Office (AHO), Chevron, Western Gas, Exxon Mobil Australia Resources Company, Shell Australia, Kyushu Electric Wheatstone, Eni Australia, FINDER Energy No 16, Jadestone, KUFPEC, Vermilion Oil & Gas, Coastal Oil and Gas, Bounty Oil and Gas, OMV Australia / Sapura OMV Upstream, KATO Energy / KATO Corowa / KATO NWS / KATO Amulet, INPEX Alpha, JX Nippon O&G Exploration (Australia), 3D Oil Ltd, AGI Tubridgi P/L, Good Earth Energy Corporation, Pathfinder Energy P/L, Pilot Energy Ltd, Petro China International Investment, Triangle Energy, VRX Silica Ltd, Beach Energy, Origin Energy Browse, Strike Energy, Shire of Carnarvon, Exmouth Recreational Marine Users, Karratha Recreational Marine Users, Christmas Island Recreational Marine Users, Recfishwest, Marine Tourism Association, WA Game Fishing Association, Australian Maritime Safety Authority – Marine Pollution, Onslow Chamber of Commerce and Industry, Shire of Exmouth, City of Karratha, Town of Port Hedland, Broome Chamber of Commerce and Industry, Carnarvon Chamber of Commerce and Industry, Shire of Derby West Kimberley, Exmouth Community Liaison Group, Karratha Community Liaison Group, Port Hedland Chamber of Commerce and Industry, Shire of Wyndham/East Kimberley, Shire of Shark Bay, City of Greater Geraldton, Shire of Chapman

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Valley, Shire of Dandaragan, Shire of Gingin, Shire of Northampton, Shire of Christmas Island, Pilbara Ports Authority, Kimberley Ports Authority, Mid West Ports Authority, Derby Chamber of Commerce and Industry, Mid West Chamber of Commerce and Industry, East Kimberley Chamber of Commerce and Industry, Director of National Parks (DNP), Department of Primary Industry and Regional Development (DPIRD), Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries), NT Fisheries, Northern Territory Department of Industry, Tourism and Trade (DITT), Northern Territory Department of Environment, Parks and Water Security (DEWS), Northern Territory Environment Protect Authority (NTEPA) (16 October 2023)

Pearl Producers Association, Skye Napoleon; Petroleum; Resources, New Zealand Oil and Gas (NZOG), Karratha and Districts Chamber of Commerce and Industry, Exmouth Chamber of Commerce and Industry, 350 Australia (350A), Greenpeace Australia Pacific (GAP), Australian Conservation Foundation (ACF), Australian Marine Conservation Society (AMCS), Conservation Council of Western Australia (CCWA), Sea Shepherd Australia (SSA), Protect Ningaloo, Cape Conservation Group (17 October 2023)

Dear

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 27 October 2023.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.2 Email sent to Email sent to City of Albany, City of Bunbury, City of Busselton, Town of Cambridge, Shire of Capel, Shire of Carnamah, City of Cockburn, Shire of Cocos Islands, Shire of Coorow, Shire of Denmark, Town of Cottesloe, Shire

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of Dundas, Shire of Esperance, City of Fremantle, Shire of Harvey, Shire of Irwin, Shire of Jerramungup, City of Joondalup, City of Mandurah, Shire of Kwinana, Shire of Manjimup, Town of Mosman Park, Shire of Nannup, City of Nedlands, City of Rockingham, City of Stirling, City of Wanneroo, Shire of Waroona, Shire of Ravensthorpe, Shire of Augusta Margaret River, Margaret River Chamber of Commerce and Industry, Southern Ports (Albany), Southern Ports (Bunbury), Fremantle Port Authority, Jurien Bay Chamber of Commerce and Industry, Lancelin Chamber of Commerce and Industry, Albany Chamber of Commerce and Industry, Bunbury Geographe Chamber of Commerce and Industry, Busselton Chamber of Commerce and Industry, Dunsborough Yallingup Chamber of Commerce and Industry, Capel Chamber of Commerce and Industry, Melville Cockburn Chamber of Commerce and Industry, Denmark Chamber of Commerce and Industry, Esperance Chamber of Commerce and Industry, Fremantle Chamber of Commerce and Industry, Peel Chamber of Commerce and Industry, Rockingham Kwinana Chamber of Commerce and Industry, Manjimup Chamber of Commerce and Industry, Nannup Chamber of Commerce and Industry, Augusta Chamber of Commerce and Industry (18 October 2023)

Dear Stakeholder,

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our website. Also in the email below are some questions and answers explaining why we are consulting you for these EPs.

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 27 October 2023.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.3 Email sent to Commonwealth Fisheries Association (CFA), North West Slope and Trawl Fishery, Western Deepwater Trawl Fishery, Western Tuna and Billfish

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Fishery, Northern Prawn Fishery, Christmas Island Line Fishery (18 October 2023)

Dear Stakeholder,

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- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
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Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

Should you require notification prior to, and on completion of, the proposed activities, or have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.4 Email sent to WAFIC (18 October 2023)

Hi [REDACTED],

We are currently sending out follow-up consultation emails regarding the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans, ahead of the consultation period closing on 27 October 2023.

As previously discussed, the relevant fisheries for these EPs are:
Mackerel Managed Fishery (Schedule 2- Area 2) – *Both activities*
Pilbara Line Fishery (Condition) – *Both activities*
West Coast Deep Sea Crustacean Managed Fishery – *Both activities*
Pilbara Trap Managed Fishery – *Pyrenees*

We understand you do not usually distribute consultation reminders to licence holders, but should you wish to, or if you require any of the information again, the Consultation Information Sheet is available on our [website here](#).

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Kind regards,



Woodside Feedback

2.5 Letter sent to Northern Territory Aquarium Fish/Display Fishery, Northern Territory Spanish Mackerel Fishery, Northern Territory Offshore Net & Line Fishery, Northern Territory Demersal Fishery, Northern Territory Mud Crab Fishery, Northern Territory Mollusc Fishery, Northern Territory Aquaculture Fishery (16 October 2023)



Woodside Energy Group Ltd

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www.woodside.com

Please direct all responses/queries to:
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T: 1800 442 977
E: Feedback@woodside.com.au

16 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside previously consulted you (correspondence dated 22 September 2023) regarding its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs. For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull. The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean

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conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

Woodside is writing to you to follow up on feedback with respect to the proposed activities. You were previously sent a Consultation Information Sheet which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures.

The Consultation Information Sheet is available on our website www.woodside.com and can be accessed through the QR code below:



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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards,

Woodside Feedback



Woodside Energy
Mia Yellagonga
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T: 1800 442 977
E: feedback@woodside.com.au
www.woodside.com
f t in v @

**2.6 Letter sent to Gascoyne Recreational Marine Users, Pilbara/Kimberley
Recreational Marine Users, South Coast Recreational Marine Users, West Coast
Recreational Marine Users (16 October 2023)**

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16 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

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conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

Woodside is writing to you to follow up on feedback with respect to the proposed activities. You were previously sent a Consultation Information Sheet which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures.

The Consultation Information Sheet is available on our website www.woodside.com and can be accessed through the QR code below:



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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards,

Woodside Feedback



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f t in v @

2.7 Letter sent to Allasso Energy Pty Ltd, AWE Perth Pty Ltd, PBE Operations Pty Ltd (16 October 2023)

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16 October 2023

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The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

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If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards,

Woodside Feedback



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E: feedback@woodside.com.au
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f t in y @

2.8 Email sent to Shire of East Pilbara (24 October 2023)

Dear Stakeholder,

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#). Also in the email below are some questions and answers explaining why we are consulting you for these EPs.

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 01 November 2023.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.9 Letter sent to Christmas Island Recreational Marine User (24 October 2023)

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Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: Feedback@woodside.com.au

24 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside previously consulted you (correspondence dated 22 September 2023) regarding its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs. For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

Environment that May Be Affected (EMBA)

Following recent changes to Commonwealth EP consultation requirements, Woodside is now consulting persons or organisations who are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence.

For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull. The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean

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conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

Woodside is writing to you to follow up on feedback with respect to the proposed activities. You were previously sent a Consultation Information Sheet which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures.

The Consultation Information Sheet is available on our website www.woodside.com and can be accessed through the QR code below:



The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **02 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards,

Woodside Feedback



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2.10 Letter sent to Cocos (Keeling) Islands Marine Aquarium Fishery (24 October 2023)

Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: Feedback@woodside.com.au

24 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs. For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull. The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean



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conditions at the time of the release and is created by overlaying the hundreds of individual computer simulated hypothetical spills.

Woodside is writing to you to follow up on feedback with respect to the proposed activities. You were previously sent a Consultation Information Sheet which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures.

The Consultation Information Sheet is available on our website www.woodside.com and can be accessed through the QR code below:



The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Should you require notification prior to, and on completion of, the proposed activities, or have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **02 November 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards,

Woodside Feedback



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f t in v @

2.11 National Energy Resources Australia (NERA) (30 October 2023)

Dear Stakeholder,

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 06 November 2023.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.12 Email sent to Tuna Australia (31 October 2023)

Dear [REDACTED],

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 07 November 2023.

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Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Woodside has noted your response regarding consultation processes in respect to an activity update for the TPA03 Well Intervention Environment Plan.

In relation to the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations EPs, AFMA data shows there are no active tuna fisheries within the Operational Areas. The Western Tuna and Billfish Fishery is active within the EMBA. As per AFMA's expectations, we have consulted individual operators in this fishery as well as Tuna Australia and the Commonwealth Fisheries Association as the relevant industry associations and representative bodies.

Kind regards,
Woodside Feedback

2.13 Email sent to Australian Southern Bluefin Tuna Industry Association (1 November 2023)

Dear Stakeholder,

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 11 November 2023.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.14 Email to Northern Prawn Fishery Industry

Dear Northern Prawn Fishery Industry,

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Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

Should you require notification prior to, and on completion of, the proposed activities, or have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **17 November 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.15 Email to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (3 November 2023)

Dear DAFF – Biosecurity,

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **15 November 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.16 Email sent to Western Rock Lobster Council (13 November 2023)

Dear [REDACTED],

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

Should you require notification prior to, and on completion of, the proposed activities, or have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **20 November 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.17 Email sent to Director of National Parks (DNP) and Ningaloo Coast World Heritage Advisory Committee (NCWHAC) (9 November 2023)

Dear

Woodside is sending this email by way of reminder that the consultation period is closing ahead of the planned submission of five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.

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- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **16 November 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Feedback

2.18 Letter sent to Christmas Island Line Fishery licence holder (16 October 2023)

Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: Feedback@woodside.com.au

16 October 2023

Dear Stakeholder,

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

Woodside previously consulted you (correspondence dated 22 September 2023) regarding its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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Overview

Both EPs are being revised and resubmitted for the continued production of crude oil via existing subsea infrastructure to the FPSOs, in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (Environment Regulations).

Woodside plans to continue producing crude oil at the Ngujima-Yin and Pyrenees facilities. Operations began in 2008 for Ngujima-Yin and 2010 for Pyrenees.

The activities that will continue at both FPSOs are:

- Routine oil production, including crude oil offloading and associated activities;
- Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
- Disconnection and sail-away of the FPSO with the turret mooring and subsea infrastructure remaining in place.

Exclusionary / Cautionary Zones

The locations of the Pyrenees FPSO, Ngujima-Yin FPSO and associated subsea infrastructure, are marked on nautical charts. Nautical charts also include a 500 m radius petroleum safety zone (exclusion zone) around the FPSOs. For the Pyrenees FPSO, this is measured in addition to the FPSO length (260 m), resulting in a 760 m exclusion zone. For the Ngujima-Yin FPSO this radius is measured from the riser turret mooring at the bow of the vessel. Vessels may not enter the exclusion zones without permission from the FPSOs. In addition, a 2.5 nm (4.6 km) radius Cautionary Zone is also marked on nautical charts around both FPSOs.

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For these EPs, broadest extent of the EMBA has been determined by modelling the highly unlikely event of a hydrocarbon release from activities within the scope the EP 100-200 times (to account for the variation in environmental conditions throughout the year). The worst-case credible hydrocarbon spill scenario for these EPs is a release of crude oil to the environment either as a result of a loss of well control, or a vessel collision with the FPSO with enough force to breach the hull. The EMBA represents the merged area of many possible paths a highly unlikely hydrocarbon release could travel depending on the weather and ocean



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Should you require notification prior to, and on completion of, the proposed activities, or have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **27 October 2023**.

Your feedback and our response will be included in our EPs, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Regards,

Woodside Feedback



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2.19 Email sent to [REDACTED], Shark Bay Aviation, Mac Attack Fishing Charters, Shark Bay Charters, Shark Bay Coastal Tours, Naturetime Tours, Perfect Nature Cruises, Shark Bay Community Resource Centre, Wula Gula Nyinda Eco Cultural Tours, Ocean Park, Tidal Moon, RAC Monkey Mia, Dirk Hartog Island; Shire of Shark Bay; Department of Biodiversity, Conservation and Attractions Shark Bay office (15 December 2023)

Dear Stakeholder,

Woodside previously consulted you regarding its plans to submit:

1. Five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans:
 - The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
 - The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L;
2. The Scarborough Offshore Facility and Trunkline Operations Environment Plan, which involves the installation of a Floating Production Unit (FPU) and complete subsequent hook-up and commissioning activities, prior to start-up and operations within Production Licences WA-61-L and WA-62-L. Gas from the FPU will be transferred through the gas export trunkline (the Trunkline - Pipeline Licence WA-32-PL) to the Pluto LNG Plant for further processing.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheets which are available on our website [here](#) (Ngujima-Yin FPSO Facility and Pyrenees Facility Operations) and [here](#) (Scarborough Offshore Facility and Trunkline Operations).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **22 December 2023**.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Energy Feedback

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2.20 Email sent to Amateur Fishermen’s Association of the Northern Territory; Northern Territory Seafood Council; Christmas Island Fishing Advisory Committee; Northern Territory Department of Infrastructure, Planning and Logistics (Marine Safety); Department of Territory Families, Housing and Communities (Heritage); Department of Infrastructure, Tourism and Trade (Aquatic Biosecurity); Indian Ocean Territories Regional Development Organisation; Port of Christmas Island; Christmas Island Business Association; Department of Infrastructure, Regional Development, Transport, Communications and the Arts (9 January 2024)

Dear

Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

- The Ngujima-Yin FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 57 km north of Exmouth, Western Australia, within Production Licences WA-28-L and WA-59-L, and pipeline licence WA-28-PL.
- The Pyrenees FPSO and associated subsea infrastructure is located in Commonwealth waters approximately 45 km north of Exmouth, Western Australia, within Production Licences WA-42-L and WA-43-L.

Information on the proposed activities is provided in the email below and in the Consultation Information Sheet which is available on our [website](#).

If you have feedback specific to the proposed activities, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **19 January 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Kind regards,
Woodside Energy Feedback

2.21 Email sent to Port of Cocos (Keeling) Island (12 January 2024)

Dear [REDACTED], on behalf of Port of Cocos (Keeling) Islands

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Woodside previously consulted you on its plans to submit five-year revisions of the Ngujima-Yin Floating Production Storage and Offloading (FPSO) Facility Operations and Pyrenees Facility Operations Environment Plans (EPs):

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Kind regards,

3. Newspaper advertisements, social media campaigns, community information sessions

3.1 Newspaper advertisements – EP consultation (September 2023)

The Australian (13 September 2023)

Security alert: UK puts China spies on notice

STEVEN SWINFORD
BILLY KEMER
LONDON

China faces being formally designated a threat to Britain under security laws after a Tory parliamentary researcher was arrested on suspicion of spying.

Under pressure from China hawks, Deputy Prime Minister Oliver Dowden told parliament on Monday that there was a strong case for including China in the "enhanced" tier of the Foreign Influence Registration Scheme, whereby China would be designated as a "potential risk to UK safety or interests".

Anyone working "at the direction" of China or state-linked Chinese companies would be required to register with the government and disclose their activities. Failure to do so would be a criminal offence carrying a five-year jail sentence.

Chris Cash, the director of an influential group on Beijing, cofounded by Security Minister Tom Tugendhat, was arrested in March on suspicion of breaching the Official Secrets Act. He was also employed as a researcher by the Alicia Kearns, chairwoman of the Commons foreign affairs committee.

His arrest, reported for the first time at the weekend, has intensified debate on whether Britain needs to be more robust in its dealings with Beijing.

Mr Cash, who studied in China before working in Westminster, released a statement on Monday insisting he was "completely innocent".

He said the allegations were "against everything I stand for", adding that he had spent his career "trying to educate others about the challenge and threats presented by the Chinese Communist Party". China called the claims malicious slander.

Mr Cash, 28, and a man in his 30s who was arrested at the same time are on police bail until next month.



Chris Cash ... allegations 'against everything I stand for'



Xu Yanjun ... lured to Belgium and arrested

West spooked into action to thwart Beijing espionage

RICHARD SPENCER
ANALYSIS

China has been trying to "catch up" with the West, using all means within its power to do so for decades.

Some methods are legitimate, of course, such as the nation's economic growth. At the other end of the scale, Beijing, Washington and London have deployed old-fashioned spies against each other for years.

However, in recent years Western nations have begun to take measures against a range of "grey" tactics, from industrial espionage to the "monitoring" of public discussion of issues such as Taiwan's human rights.

A year ago, MI6 director-general Ken McCallum and FBI director Christopher Wray gave an unprecedented joint address to business leaders and academics, saying they needed to join forces to prevent China undermining the West's security and democratic values.

Microsoft gave a specific example in May that a state-

sponsored Chinese hacking group had compromised critical US infrastructure. Cyber espionage groups run by the People's Liberation Army are suspected of targeting civilian companies, including Google, as far back as 2002. Google and other firms supply software to companies and government departments provide a "back door" into their computer systems.

There is wider concern about China gaining access to political "influencers", using Chinese students or even unwitting dupes to prevent discussion of sensitive issues on campuses. Britain's National Security Act, which became law in July, introduced a foreign influence registration scheme - based on laws passed in Australia in 2018 to combat the growing influence of China. Lobbyists working there on behalf of foreign states are required to register with the government within 14 days of undertaking their activities or face prison sentences of up to five years.

The US is ahead of Britain in several ways. It has banned federal employees from downloading TikTok on government-issued electronic devices. And 28 states have banned officials from using TikTok at all.

The buying of agricultural land in the US by Chinese companies has stoked fears it may be being used by the Chinese government to spy on US military installations. Last week, China was accused of sending citizens posing as tourists to test security at military installations by trying to enter them "by mistake".

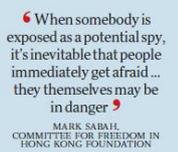
A striking case was that of an expert in advanced engineering working for Americans giant GE, who was asked to lecture at a Chinese university in 2017. It was only later the FBI told him he had unwittingly allowed himself to become a Chinese spy. The man who invited him was not a university representative but an agent of Chinese State Security Ministry Xu Yanjun, who plied him for information. The FBI "burned" the engineer, using him to feed information to the Chinese and, eventually, Jun Xu to Belgium, where he was arrested and extradited.

After his trial, Xu was shown to have also targeted French nationals experts and recruited a Chinese student who managed to enrol in the US Army Reserve. Sentenced to 20 years' jail, it was a rare case of a spy master, not just a spy, being jailed.

THE TIMES



Oliver Dowden: 'Absolutely clear'



MARK SARAH, COMMITTEE FOR FREEDOM IN HONG KONG FOUNDATION



Rishi Sunak: 'Emphatic'

When somebody is exposed as a potential spy, it's inevitable that people immediately get afraid ... they themselves may be in danger

Prime Minister Rishi Sunak said on Monday that he had been "emphatic" with Chinese Premier Li Qiang that the government would never tolerate actions that undermined British democracy. Mr Sunak, who spoke to Mr Li at the G20 meeting in India at the weekend, said he was clear that the "sanctity" of parliament must be protected.

Mark Sarah, of the Committee for Freedom in Hong Kong Foundation, told Times Radio he had met Mr Cash several times. "He was an important cog in the China aspect ... in Westminster", he said.

Calling the allegations terrifying, he added: "I have no evidence or proof whatsoever that he did anything wrong. However, when somebody is exposed as a potential spy, it's inevitable that people immediately get afraid ... they themselves may be in danger."

Sir Iain Duncan Smith, another former Tory leader, said it was appalling that there was a potential "espionage cell" operating in and around Westminster.

Mr Dowden said that although the government was "absolutely clear about the threat that China represents", it was right to engage with Beijing. Mr Sunak has argued repeatedly that Britain needs to be in the room if it is to hold China to account.

Pushed by Ms Truss to harden Britain's position on China, Mr Dowden responded: "She's absolutely right that China presents a systemic challenge to our interests and values, and it is also the case ... it is the No. 1 state-based threat to our economic security."

Tim Loughton, a Tory MP who has been criticised by Beijing for criticising its policies, asked if China would be added to the enhanced tier of the registration scheme.

Mr Dowden said: "We are currently reviewing which countries are within that enhanced tier. I think there is a strong case to be made, but you would not expect me to make that announcement from the dispatch box until we have gone through the proper process related to it."

Former MI6 chief Sir Alex Younger also said China should be put on the enhanced list. "Sometimes we have to be absolutely prepared to confront it when we believe that our security interests are threatened," he told BBC Radio 4.

Home Secretary Suella Braverman has pushed for China to go on the enhanced tier but there has been resistance from the Treasury and elsewhere in Whitehall because of the potential impact on trade.

THE TIMES

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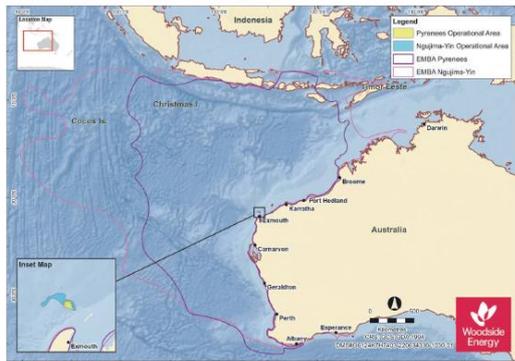
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The West Australian (13 September 2023)

The West Australian
Wednesday, September 13, 2023

NEWS 17



The family of police officer Cameron Fyfe at the inquest. Picture: Daniel Wilkins

Power pole fire arrest pair in court

Two men are facing charges for allegedly causing a Western Power pole to go up in flames.

Detectives from WA Police's State security investigation group recently charged the pair, aged 32 and 21, after damage was caused to electrical wiring on a power pole, causing it to set fire, in May.

The fire caused extensive damage to the pole and the wiring.

As part of the investigation, detectives searched a property in Banksia Grove last month.

The two men, both of Banksia Grove, were subsequently charged with a count of unlawful damage each.

They are due to appear in Joondalup Magistrates Court on October 2.

The incident in May happened after an unrelated incident involving a high-voltage transmission tower, also in Pinjar, which police believe was knocked down in an act of vandalism on April 20.

Police believe those involved may have been dressed as workers or technicians so as to not draw attention to themselves.

"They may have been dressed as to not raise suspicion," Det-Insp. Gary Butler said in April.

Police continue to appeal for information.

ent former partner that he thought about using his gun to shoot himself but that he could never do that because he would have to go to work to get it.

A couple of months later, he joined the traffic motorcycle group based in Midland and was allowed to take home his bike and his gun. The inquest was told his superior, Sen. Sgt Simon Baxter, gave Const. Fyfe verbal approval to store the weapon at home after he provided an email with photographs of his safe.

However, WA Police policy was that an inspection should be carried out. Sen. Sgt Baxter was investigated over the technical breach but was exonerated by internal affairs.

A month after he received approval, Const. Fyfe took his own life after a night of heavy drinking. The inquest was told he had messaged and called his family and friends just before he shot himself.

His devastated father made the heartbreaking discovery the following day.

Det-Const. Greg Holt, who carried out an investigation into Const. Fyfe's death, said it was clear the young officer had hidden his mental health issues from the force.

He said officers he spoke to were not aware of the severity of Const. Fyfe's depression or his comments about suicide.

He also said his police file did not contain any evidence that he had sought internal psychological counselling services.

When asked if it appeared he kept his mental health strug-

gles hidden because of fears he would be stood down from operational duties, Det-Const. Holt said it did. "I think people have concerns others will find out," he said.

Det-Sen. Sgt Glenn Swannell testified there was stigma about seeking help from the mental health services provided by police. However he was not aware of any police-employed psychologist betraying the confidence of an individual.

Bluehope.org.au
Lifeline 13 11 14

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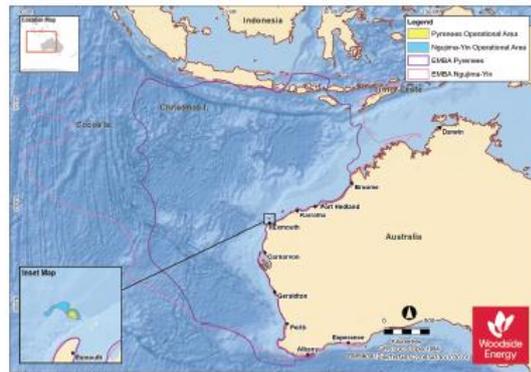
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The NT News (13 September 2023)

Wednesday September 13, 2023 | NT News

NEWS 07

Cops have to sleep in swags

Facilities crude at West Daly

Annabel Bowles and Zizi Averill

Northern Territory police have been sleeping in swags while deployed to the remote West Daly region as part of ongoing efforts to quell years of gang violence and unrest.

Police Commissioner Michael Murphy recently revealed emergency response groups had been asked to camp in Peppimenarti, a community about 330km from Darwin.

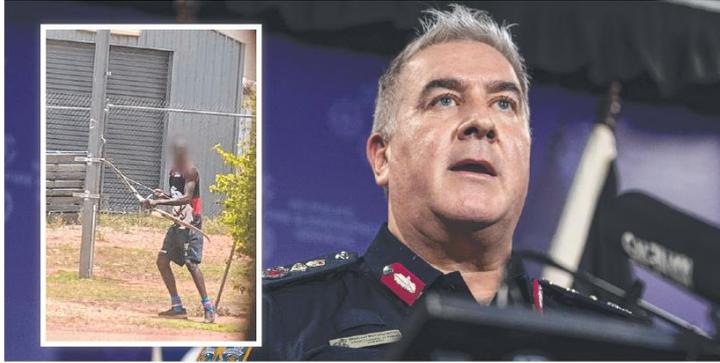
"At the moment, I've got police officers who go out there and actually stay for six weeks to three months," Mr Murphy said on Friday.

"And the task force operators, they take their swags out with them.

"They don't look for comfort too much."

Mr Murphy visited the troubled town last week as part of an increased police presence which led to the arrest of 10 people.

Community members said the Peppimenarti police sta-



Police Commissioner Michael Murphy visited the troubled Peppimenarti community last week; (inset) a member of Peppimenarti's notorious Jovi Boys gang. Main picture: Pema Tamang Pakhrin. Inset: Supplied

tion had been broken into six times in the past year.

NT Police Association president Nathan Finn said the police compound in nearby Wadeye had also been repeatedly broken into, "with (alleged) offenders stealing impounded cars and smashing through the perimeter fence on a number of occasions".

He said the issue of police sleeping in swags was not isolated to Peppimenarti and

something the union had been pushing the NT government and senior police executive to address "for years".

"This is the reality for police sent to Peppimenarti to support the two officers permanently stationed there," he said.

"There are many remote stations where relieving members receive a camping allowance to sleep in swags, in the absence of suitable accommodation."

Mr Finn described the Peppimenarti station as a "rusting, rotting shipping container" left over from the Intervention era. "It's totally lacking adequate security measures to protect our members," he said.

"What has gone wrong with a community when offenders think it's acceptable to break into and damage a police compound - where members and their families live?"

Mr Finn said police were

"regularly attacked" with axes, machetes, spears and rocks - not just in the West Daly region but across the Territory.

Police Minister Kate Worden was contacted for comment but a government spokesman responded, saying a \$19m new station for Peppimenarti was progressing.

"The new Peppimenarti permanent police complex will include a new contemporary police station, detention facilities,

government employee housing and visiting officers' quarters to support a permanent police presence in Peppimenarti," he said.

"Discussions are well underway between the NT government and land council to identify an appropriate site for the new station.

"Following the identification of a site, work on design and construction processes can then begin.

"There is currently a review into police resourcing underway which includes assessing staffing at remote stations."

Mr Finn said while the new station would be welcomed, construction was not expected to start until the second half of next year.

"If (the) government considered remote policing investment a priority, it would have built the Peppimenarti complex years ago, instead of spending \$13m on a police station in the Chief Minister's electorate that is nothing more than glorified office space, with no frontline response capabilities," he said.

NT Police has previously refused to confirm any details about break-ins at the Peppimenarti police compound and when asked again on Tuesday, a spokeswoman said they would "aim" to respond later in the week.

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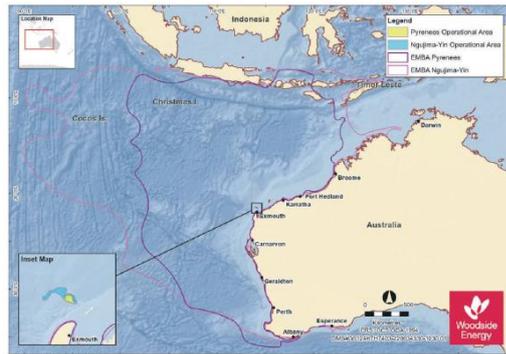
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Indonesia lifts live cattle ban

KIMBERLEY CAINES

Indonesia has resumed imports of live cattle from WA and other parts of the country — ending more than a month of trade suspensions over fears of lumpy skin disease.

Livestock producers and exporters in WA can again start sending their live cattle to the nation's northern neighbour as of Saturday, with the ban on seven yards — three from the State — being lifted with immediate effect.

Australian and Indonesian officials reached the agreement following a week of meetings in Jakarta to come up with a resolution.

Acting chief veterinary officer Dr Beth Cookson led the discussions and had to satisfy Indonesia that Australia is lumpy skin disease-free.

Prime Minister Anthony Albanese spoke directly with Indonesian President Joko Widodo about the matter while in Jakarta on Thursday — as did Foreign Minister Penny Wong with her counterpart.

Mr Albanese thanked the ministers, departmental staff and officials and technical experts who worked for the positive outcome.

"I am delighted that following the bilateral meeting Minister Wong and I had with President Widodo earlier this week at the East Asia Summit, Indonesia will lift its suspension of Australian live cattle and buffalo exports," he said on Saturday.

"I thank President Widodo and



Indonesia has resumed imports of live cattle from WA and other parts of the country. Picture: Petermooy

his officials for working to resolve this issue."

The Australian Livestock Exporters' Council welcomed the resumption of trade with relief, noting cattle trade had been longstanding between the two nations.

"Indonesia is Australia's largest market for cattle and Indonesian families rely on Australian cattle

for a consistent supply of high-quality affordable beef, so a swift, unencumbered return to trade was always in the interests of both countries," ALEC chair David Galvin said.

"The trade is a longstanding one that benefits both of us and I firmly believe that strong relationship meant a mutually beneficial

solution would always be found." Agriculture Minister Murray Watt said Saturday's announcement was "a testament to our calm and considered approach in response to this issue." "We have always maintained that Australia is free of lumpy skin disease, demonstrated by the results of extensive testing undertaken across

northern Australia," he said. Senator Watt told reporters in Brisbane on Saturday surveillance measures for lumpy skin disease had been placed on Australia and that a "delegation of Indonesian quarantine officials" would land in northern Australia in coming weeks so they can "physically inspect the premises involved".

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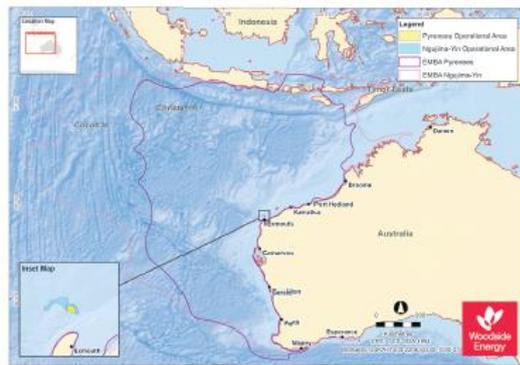
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North West Telegraph (13 September 2023)

North West Telegraph
Wednesday, September 13, 2023

northwesttelegraph.com.au

NEWS 9

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"I am delighted that following the bilateral meeting Minister Wong and I had with President Widodo earlier this week at the East Asia Summit, Indonesia will lift its suspension of Australian live cattle and buffalo exports," he said on Saturday.

"I thank President Widodo and



Indonesia has resumed imports of live cattle from WA and other parts of the country. Picture: Petermooy

his officials for working to resolve this issue."

The Australian Livestock Exporters' Council welcomed the resumption of trade with relief, noting cattle trade had been longstanding between the two nations.

"Indonesia is Australia's largest market for cattle and Indonesian families rely on Australian cattle

for a consistent supply of high-quality affordable beef, so a swift, unencumbered return to trade was always in the interests of both countries," ALEC chair David Galvin said.

"The trade is a longstanding one that benefits both of us and I firmly believe that strong relationship meant a mutually beneficial

solution would always be found."

Agriculture Minister Murray Watt said Saturday's announcement was "a testament to our calm and considered approach in response to this issue". "We have always maintained that Australia is free of lumpy skin disease, demonstrated by the results of extensive testing undertaken across

northern Australia," he said.

Senator Watt told reporters in Brisbane on Saturday surveillance measures for lumpy skin disease had been placed on Australia and that a "delegation of Indonesian quarantine officials" would land in northern Australia in coming weeks so they can "physically inspect the premises involved".

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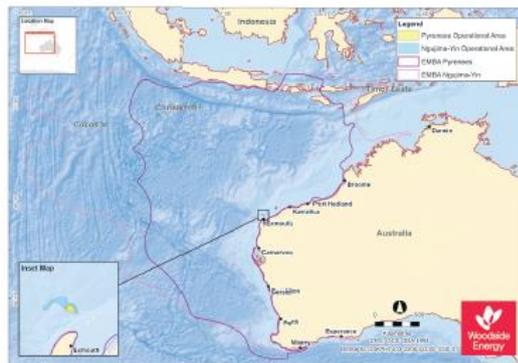
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Midwest Times (13 September 2023)

Times
Wednesday, September 13, 2023

midwesttimes.com.au

NEWS 15

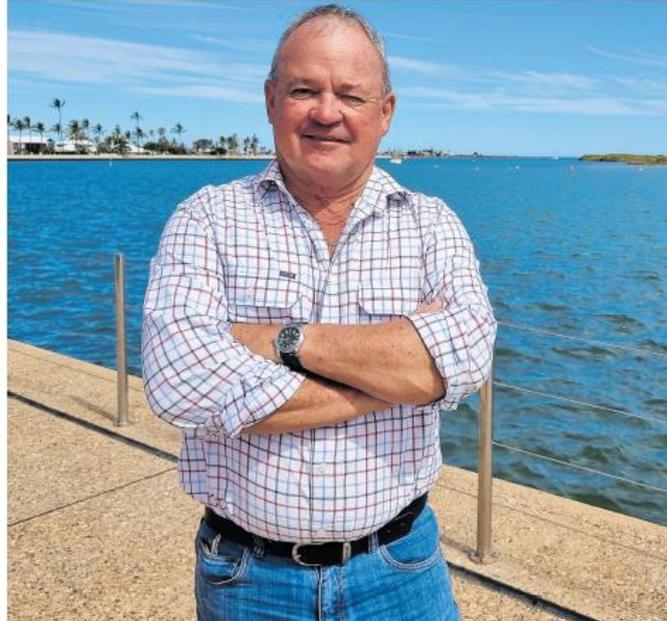
candidates for elections



Carnarvon shire president hopeful Paul Kelly.



Exmouth shire president candidate Matthew Nikkula.



Carnarvon Shire president Eddie Smith. Picture: Jamie Thanno

from 2017-2021, when the council voted Cr Allston into the top role.

Three candidates for three vacancies have been elected unopposed and all are newcomers to the council — Todd Bennett, Kai Broedner, and Kristy Devereux.

Crns Heather Lake and Mark Lucas, whose terms expire next month, are not contesting their positions.

Three candidates for four vacancies have been elected unopposed in Three Springs, including deputy president Christopher Connaughton, and Crs Julia Ennor and Nadine Eva.

In Shark Bay, four candidates have filled all the vacancies and

been elected unopposed — Shire president Cheryl Cowell and Crs Greg Ridley, Mark Smith and Peter Stubberfield.

Out of three vacancies in Yalgoo, only one has been filled, by Cr Raul Valenzuela.

According to the Australian Electoral Commission, if there are not enough nominations to fill vacancies, an extraordinary election must be held at a later date.

If no nominations are made, the council may appoint someone to the role, permitted they are eligible and willing to accept it.

Local government elections will be held on Saturday, October 21.

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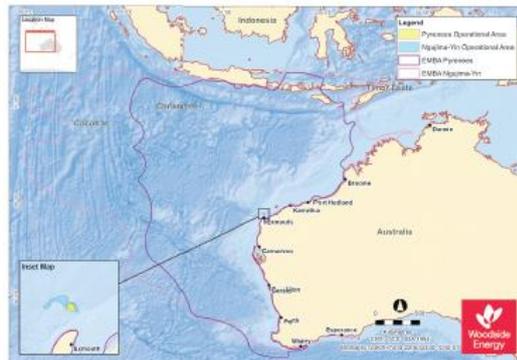
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Manjimup- Bridgetown Times (13 September 2023)

Manjimup-Bridgetown Times
Wednesday, September 13, 2023

ombtimes.com.au

NEWS 7

Avocado orchard part of study

MELISSA PEDELY

A Pemberton avocado orchard is one of three involved in a national research project designed to help improve the robustness of avocados.

The national project will develop tools to guide calcium applications

to help deliver the best-quality avocados, boosting orchard potential and growers' business resilience and profitability.

The Department of Primary Industries and Regional Development is supporting the three-year Queensland Department of Agriculture and Fisheries project to in-

crease fruit quality, funded by Hort Innovation's Avocado Fund.

Research scientist Declan McCauley said the department was now in the second year of the project, exploring several options to refine calcium applications to optimise fruit quality.

"There seems to be a 12-week

window after flowering where applying calcium can improve the robustness of the fruit," Mr McCauley said.

"The department is doing trials with three commercial Hass avocado orchards at Pemberton, Busseton and Carabooda to evaluate various rates and timing of calci-

um applications to improve fruit robustness.

The first harvest from the Carabooda site showed variability in fruit robustness between trees, suggesting variability between trees may be a driver of whether fruit robustness is adequate or not.



DPIRD research scientist Declan McCauley is working on a national project to improve the robustness of avocados.

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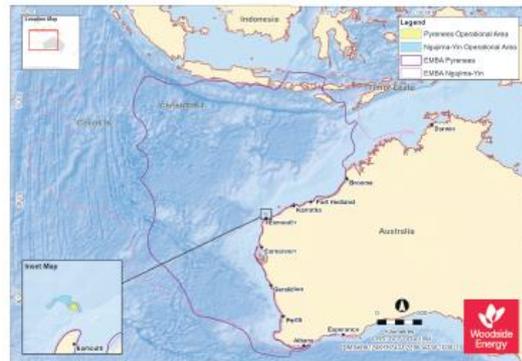
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Kalgoorlie Miner (13 September 2023)

kalmin.com.au
Wednesday, September 13, 2023

NEWS 5

Shock at abattoir's closure

AIDAN SMITH

The phone is dead, the doors are closed, and Esperance livestock producers are wondering what to do with 60,000 lambs after Minerva Foods Australia suddenly halted operations at its Shark Lake abattoir to undertake "a review of operations".

ASHEEP grower group president and Scadden farmer David Vandenberghe said while MFA chief executive Iain Mars was undertaking a review "to fully analyse what further investment is needed" in the meat processing plant, he doubted it would reopen.

"It certainly makes it difficult for producers who have been battling all year to get sheep processed," Mr Vandenberghe said.

"It takes whatever they kill each week out of the system, and producers who have old-season lambs booked in now have to find alternative arrangements."

Mr Vandenberghe said producers found WAMMCO at Katanning was "booked out" and they had had to freight sheep to V&V Walsh at Bunbury, pushing up transport costs by \$5-\$7 per head.

Salmon Gums mixed farmer Greg Kenney said he had 500 lambs scheduled for processing at the facility next week and would have to "hold them on-farm" through the summer because.

He feared by the time he found alternative processing, they would have become hoggets, worth \$60 per head less.

"At least we have sufficient feed

The Shark Lake abattoir has closed.



and water on hand to carry them through," Mr Kenney said. "We'll also be able to shear them as they'll have about eight months wool by then."

Mr Kenney said the sudden decision by MFA would remove much-needed "cash flow" from his normal spring operation.

He didn't expect the abattoir to reopen, but said "at least" MFA had

invested money into it for a new owner to take over and open the doors immediately.

Mr Mars closed the plant on September 11, about 14 months after opening it as part of a joint venture with the Saudi Agricultural and Livestock Investment Company, which was a surprise to its 150 employees as well as WA suppliers. He said staff would be rede-

ployed to other facilities within the MFA group where possible, with "a small number taking up redundancies".

The South American-owned MFA is expected to fulfil all existing meat orders through its operations at the Great Eastern Abattoir at Tammin, and Colac in Victoria. The Esperance facility had the

capacity to process about 9000 lambs a week, while 5000 head could also be processed at Tammin, with 90 per cent of the total product exported mostly to the Middle East.

Pastoralists and Graziers Association of WA Livestock Committee chair and Eneabba sheep producer Chris Patmore said the MFA decision highlighted how difficult it was to operate an abattoir.

"It's disappointing to see a reduction in sheep processing in WA," Mr Patmore said.

"It's not an easy business to be in."

"Hopefully it is a temporary situation and not a permanent closure."

Mr Patmore said the WA sheep industry needed "all the competition it could get" within the processing sector, especially at a time when the Federal Government was working to phase out live sheep exports.

MFA originally sought to invest \$50 million in the WA processing sector to boost its Australian operations, mainly because of the presence of the Saudi Agricultural Livestock Investment Company, which purchased a 211,000ha portfolio of farmland from John Nicoletti in 2019.

SALIC operates under the Merredin Farms brand and would sell lambs to MFA as part of the arrangement.

MFA is the second South American entity after JBS to invest in Australian meat processing.

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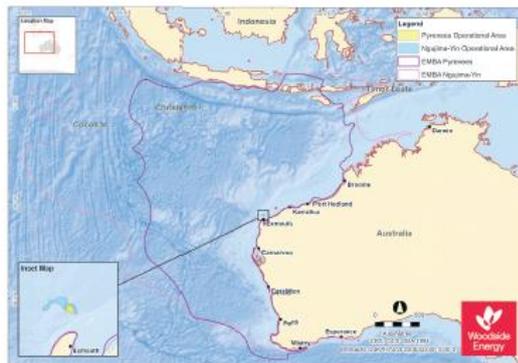
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Broome Advertiser (14 September 2023)

12 NEWS

broomead.com.au

Thursday, September 14, 2023

Fight for Indigenous language

SARAH CRAWFORD

It's morning tea at the Kimberley Language Resource Centre in Halls Creek and five-year-old Matthew Henry is more interested in the Tim Tams on the table than his aunties' conversation in the local language of Jaru.

In his community of Kundat Djaru, Ringer Soak, 170km southeast of Halls Creek, Jaru is spoken at home and taught at school so the children are proficient in the local language.

However, KLRC project and office co-ordinator, Jacqueline Cox, can see some of the dozens of languages spoken across the Kimberley getting, "watered down due to the two different worlds," that young Aboriginal people live in.

"Our old people would speak fluent language but over the years it is breaking down," Ms Cox said.

"When we go back to community we have to speak our native, natural tongue and then we have to switch when we come back into the Western world. So because of that, our old people speak fluent language, whereas we only pick up bits and pieces of it."

The KLRC is working to keep native tongues strong through their State of Language Continuation in the Kimberley project. Part of the project involves surveying 250 people to find out which Kimberley languages are thriving, which ones are, "sleeping," and what needs to be done to keep people speaking them.

There are 47 known languages from the Kimberley. Some lan-



The Kimberley Language Resource Centre is surveying people in the East Kimberley to try to find out which languages are still alive and which ones are "sleeping." Local ladies Judy Tchooga, Fiona Macale, Pauline Mandjarra, Clara Yundt, Mary Seela, Barbara Seela and Florence Long. Picture: Jackson Flindell

guages, such as Walmajarri, south of Fitzroy Crossing, and Kukatja, around Lake Gregory, are strong and have more than 1000 speakers.

Other languages such as Miwa, Wila Wila and Guwuj, once used in the north of the Kimberley, have had no speakers in living memory.

Survey leader Rowan James-Albert said his field research so far around Halls Creek showed the local language of Jaru to be strong.

"The number of people I have

spoken to here, there are a good amount of Jaru speakers, they do speak fluently, and they have not lost their language," he said.

Mr James-Albert is a Bardi speaker from Lombadina on the Dampier Peninsula.

He said in the West Kimberley the local languages were not as strong as in the East Kimberley.

"We are a bit more half and half, but there are language revival programs, just enough to keep the language alive," he said.

At the centre this morning Mr James-Albert is interviewing Halls Creek men, Stewart Moreton, who speaks Nyinjin Jaru, Eric Leeria, who speaks Guniyandi and Tony Chungulla of Billiluna, who speaks Walmajarri.

Mr Moreton, 81, an old stockman, said the traditional Nyinjin Jaru he spoke as a young person was now changing.

"They are losing it a little but we want to try to get that thing back before the older people go. People

here are real law people we want to keep their law strong," he said.

Ms Cox said despite the encroachment of English she was confident Kimberley languages would be spoken by future generations.

"Teaching the young people to continue language is the main importance of the language centre because language is a part of their culture. If they lose their language they will lose their culture," she said.

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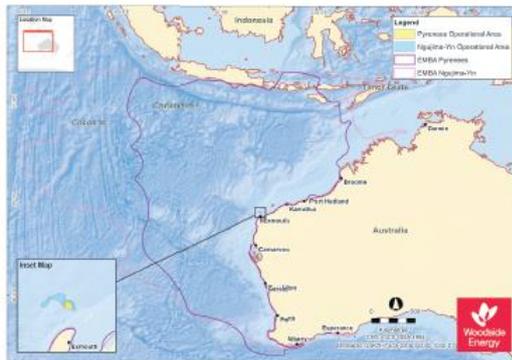
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South Western Times (14 September 2023)

8 NEWS

swtimes.com.au

South Western Times
Thursday, September 14, 2023

Councillor protests hub expense

Community Centre to cost \$780,000 a year

SEAN VAN DER WIELEN

A Capel Shire councillor has argued she "in good conscience" cannot vote to progress plans to build a \$10.8m community hub in Dalryellup after running costs for the facility were estimated at \$780,000 per year.

But Shire president Doug Kitchen has claimed the figure is a "high-level" guess and the council already spent nearly half of that amount on services for the growing community.

The Dalryellup Multipurpose Community and Youth Centre is set to be the heart of the Shire's presence in the area and will include a digital technology hub, new library and expanded council services.

Cr Kaara Andrews questioned the estimated \$780,000 a year cost of running the facility and said she could not "in good conscience" vote for any items to do with the centre until more community consultation was held.

"Before we go much further, we have to have a really serious conversation about what it's going to cost us a year to run this and actually have a conversation with the community about whether or not they consider this a worthwhile project to be putting that kind of money into year-on-year for the next 25 years," she said.

"It's not our money, it's their money and there needs to be a



An artist's impression of the Dalryellup Multipurpose Community and Youth Centre. Picture: Shire of Capel



of a lot of community buy-in — not just at the warm and fuzzy thoughts about how great it's going to be but the actual pragmatism on how we're going to pay for it."

She claimed the centre was a project which got "dumped on" the council after an \$8m State Government funding commitment at the last election and the operating costs would result in an 8 per cent rate rise for residents.

While describing Cr Andrew's operating cost concerns as "definitely valid", Cr Kitchen said the centre had been in the council's long-term financial plan "for probably near on a decade" and the operating costs were an estimate.

"(It) is quite a high-level study at this point of time and some of those things are made on assumptions," he said.

"We're actually already spending about \$355,000 per year running our current library and other services in Dalryellup. These will be moved across into this building so

we'll no longer be paying a lease. "Some staffing requirements will increase in this building but that's because there is a different offering there."

The debate over the centre's running costs overshadowed the council's move to contribute an additional \$500,000 from reserves funding towards the project in the hope it would attract additional funding.

Deputy Shire president Sebastian Schiano supported the move, noting the area's growing population.

"There is a level of staffing, support, facilities and services that currently doesn't exist in Dalryellup and this building ... is also about making the Shire present within the community," he said.

The vote was carried 6-1, with Cr Andrews the dissenting vote.

The additional contribution still leaves the precinct more than \$1m short.

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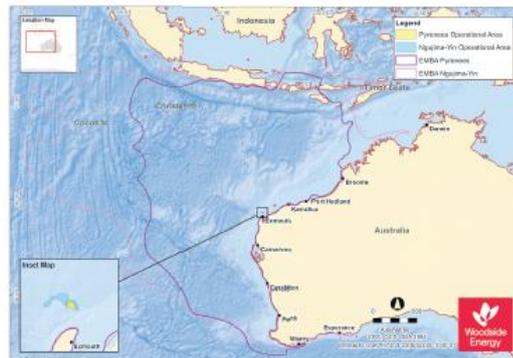
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Kimberley Echo (14 September 2023)



A 3D rendering of the Kimberley Marine Support Base.

Marine base to buoy shipping

CAIN ANDREWS

The long-awaited Kimberley Marine Support Base is set to begin construction before the end of the year with the new infrastructure expected to drive significant economic development in the region.

The \$200m privately funded infrastructure project will help tackle operational challenges associated with Broome's big tide variations by implementing a new innovative floating wharf design. The design will eliminate the need for dredging, leveraging naturally occurring deep waters to create a berth pocket of at least 17m deep at low tide.

The 9900sqm floating wharf project is estimated to create 260 jobs during construction and sustain 1650 jobs once in operation.

In Broome to announce the project update, Ports Minister David Michael said the infrastructure would help diversify the local economy.

"The \$200m project will be constructed over the next two years by the private proponent, which will allow for greater diversification of trade in and out of Broome Port," he said.

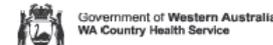
"Importantly, more cruise ships will be able to berth at Broome and it's a real win-win for the Kimberley Port Authority at the Port of

Broome with many services being used by the proponent which will assist the existing facilities here at Broome too.

"It'll allow for diversification and so oil and gas, agriculture, as well as those critical minerals like Kimberley Mineral Sands, will also be able to use this facility.

"It's also important for the resilience of the Kimberley to be able to bring in containers to assist with resilience and food security in the wet season."

Construction of the project is expected to run until early 2025 with WA company Total AMS appointed as the lead contractor.



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Interested in health?

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WA Country Health Service invites you to join our East Kimberley District Health Advisory Council (DHAC). This covers the towns of Kununurra, Wyndham and Halls Creek. Our health service is unique, and listening to the voices of our community will help us shape the future of our service.

Why join?

Partnering with, and listening to consumers, carers, and the community, leads to better health care.

DHAC members work with the WA Country Health Service to represent the consumer voice about what works well and what needs improvement.



For more information please contact our team.

P: 08 9166 4233
E: Kdh.executiveassistant@health.wa.gov.au

District Health Advisory Councils | Engaging with our community

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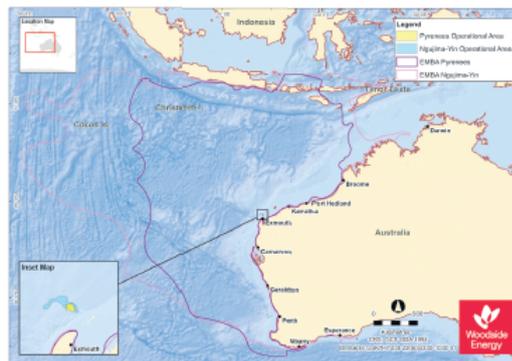
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Albany Advertiser (14 September 2023)

4 NEWS

albandvertiser.com.au

Albany Advertiser
Thursday, September 14, 2023

Committee 'has power' to aid in change

STUART MCGUCKIN

Two Albany women who took part in the first regional hearings for the WA Parliament's inquiry into forced adoption last week are concerned that others will not have the same opportunity.

Adoptees testified at the hearings in Albany on September 4, sharing their experiences with members of the Environment and Public Affairs Committee.

Jen McRae and Danae Witherow both testified at the hearing.

During their testimony, they sat across the table from the five committee members in a room full of department staff.

Ms McRae described it as a "very official" setting where those testifying were "in a room full of people you don't know".

Ms Witherow said the setting did not worry her because the committee "needed to see people". "They need to see people face to

face and listen to our tone of voice, and tell them the difficulties we come across every day, and what they can do to change it," she said. "I kept saying to them, they have the power to change these things. "They have the power to make recommendations to change laws to make it easier for us to get access to what people who are not adopted freely get."

Danae Witherow

She said there were lots of reactions from people in the hearing that indicated "people had no idea what we go through".

"I don't think they are aware of what's actually in the Adoption Act," she said.

For Ms McRae, who was the principal petitioner calling for the inquiry, the hearing was "like a bit of a reckoning" after the work it took to secure it.

"But we are concerned they may not roll this offering out to the rest of the regions and it may only be city hearings from now on, which is simply not good enough," she said.

Speaking on behalf of the committee, chair Peter Foster said hearings would continue to be held as part of the inquiry.

"The committee is, and has always been, prepared to travel regionally where there are witnesses who have expressed an interest to appear before the com-



mittee and share their lived experiences," he said.

He said the hearings in Albany were conducted in "a sensitive manner, supported by trauma-informed counsellors who flew into Albany for the assistance of witnesses who required support". "The information that was provided has greatly assisted the com-

mittee with their inquiry," he said.

Evidence presented during the hearing will be in addition to the 136 written public submissions received between late February and September. A report will be prepared for Parliament with a number of recommendations at the conclusion of the inquiry.

"We want redress, we want the

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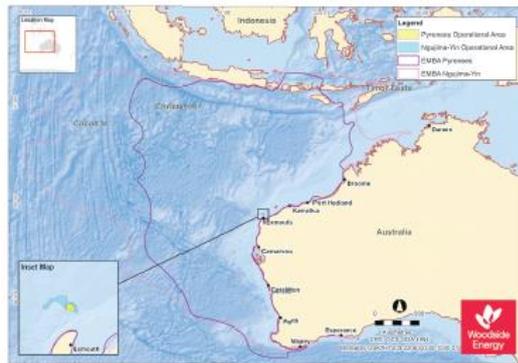
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Countryman (14 September 2023)

countryman.com.au
Thursday, September 14, 2023

NEWS 11

WA gun law overhaul 'soon'

JOSH ZIMMERMAN

Roger Cook has revealed a controversial rewrite of WA's firearms laws is expected to be introduced to State Parliament before the end of the year, with the State reeling from another fatal shooting.

The Premier said the legislation — which would include temporarily banning anyone issued with a violence restraining order from owning a gun — was in the "advanced stages of drafting" and would be released for public comment "in the coming weeks".

His comments come after 25-year-old Lachlan Bowles allegedly fatally shot Kellerberrin father Terry Czernowski at Moylan Grain Silos on Thursday, September 7.

He then went on the run, prompting a massive police response and leaving WA's agriculture industry reeling.

Plans to overhaul WA's 50-year-old gun laws — the only firearms regime in the nation that has not been amended in that time — were announced back in March 2022.

It was previously expected the laws would not reach Parliament until next year at the earliest as the Cook Government fine-tuned the details of the legislation.

The Government has been criticised for the time taken to complete the rewrite of legislation it has repeatedly spruiked since last March, but Mr Cook said the Bill was not far off.

"That legislation is in the advanced stages of drafting," he said. "We will have it available for the community to look at in the coming weeks, and we are looking forward to that legislation passing through the Parliament throughout this and early next year."

Asked to confirm if he now expected to introduce the firearms laws before Parliament rises for the summer break at the end of November, Mr Cook said: "That's my hope."

WAFarmers President John Hassell questioned the move to automatically exclude anyone slipped with a VRO from gun ownership.

He said in some instances, applications for restraining orders were "vexatious".

Currently, a person subject to a VRO or FVRO can apply to the State Administrative Tribunal to preserve their licence to own a gun while the order remains in place.

The proposed new laws would remove that avenue, forcing the surrender of all guns unless a judge could be convinced to overturn the restraining order itself.

Mr Hassell said he understood and was supportive of the intent of the changes but that the VRO system itself required an overhaul.

Mr Cook said VROs were "occasionally" vexatious but that his priority was keeping the community safe, which meant "we need to err on the side of caution".

"If a VRO is applied for, you can appeal against that VRO," he said. "He confirmed the laws would apply retrospectively to all VROs in force when the legislation was adopted. "It would require the police, I should imagine, to then provide notice to the firearm holder that their licence is disqualified (and any guns need to be surrendered)," he said.

KELLERBERRIN SHOOTING SHOCK: PAGES 12-13



Picture: Justin Benson-Cooper

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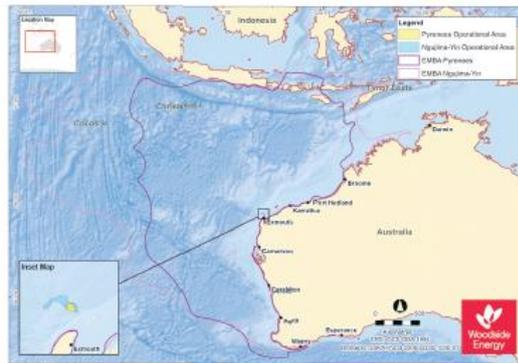
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Narrogin Observer (14 September 2023)

2 NEWS

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Narrogin Observer
Thursday, September 14, 2023

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The Narrogin Regional Herbarium on display at the Narrogin and Dryandra Visitors Centre. Picture: Daniel Rooney

DANIEL ROONEY

The Narrogin Regional Herbarium has returned to public display after it was gifted to the Shire by the Department of Biodiversity, Conservation and Attractions. The Shire of Narrogin made the announcement on September 5. The historical botanic specimens contained in the herbarium were collected by former members

of the Central South Naturalist Club Gwen Warren, Pat Rose and Carol Taylor. "These individuals devoted countless hours to the meticulous preparation of specimens, ensuring their lasting value for scientific research and public appreciation," Shire of Narrogin president Leigh Ballard said. "We extend our heartfelt gratitude to the former members of the

Central South Naturalist Club and to Greg Durrell, regional manager of DBCA, for facilitating this significant opportunity to bring the herbarium back into the public domain." A portion of the herbarium featuring the native wildflowers of Foxes Lair west of Narrogin can now be viewed at the Narrogin and Dryandra Visitors Centre. Specimens on display will rotate

in accordance with seasonal changes to showcase the Wheatbelt South's diverse botanic range. When not on display people will be able to examine the herbarium's stored specimens upon request. "The herbarium is a beacon of knowledge and a tribute to the dedicated individuals who have made it possible," Shire of Narrogin Community Development Officer Anna Prysiazna said.

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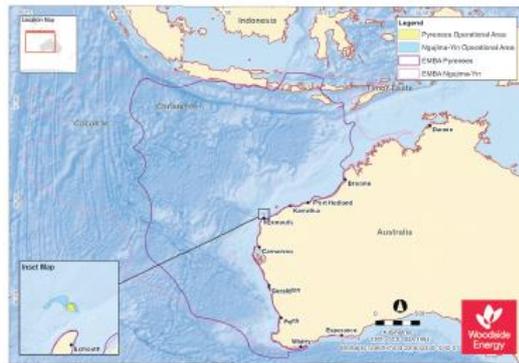
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Great Southern Herald (14 September 2023)

2 NEWS

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Great Southern Herald
Thursday, September 14, 2023

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Cafe shows its gratitude

HARRY GRIGSON

The owners of a popular Katanning coffee shop have found a unique way to repay the emergency services that helped their daughter after a car crash five weeks ago.

In a heartwarming display of gratitude and community spirit, Emu Lane Coffee Cart owners David and Julie Harries have pledged their support for local emergency services.

Mr Harries said the cafe had since provided response crews with free frozen meals to store at their headquarters if they miss dinner or lunch due to attending emergencies.

"After they helped my daughter I asked them what they had for dinner, and they said they didn't have anything," he said.

"I thought it's unfair for them to be providing immense care and help to people but not be able to eat.

"Now we donate frozen meals so if they are out on the job, they have something to come back to."

Some of the scrumptious food they have supplied includes meatball pasta, Sri Lankan chick-



Const. Rory Guyan, Sgt Jeff Daniels, Paul Bradley, Brie Jackson, David and Julie Harries, KJ Willey and Sen. Sgt Carlos Correia. Pictures: Harry Grigson

en curry, Moroccan lamb and bangers and mash.

On August 5, their 19-year-old daughter lost control of her Holden Rodeo and crashed into a ditch on Great Southern Highway about 15km from Katanning.

Emergency services from Katanning and Albany attended the scene and she did not sustain any serious injuries.

Mrs Harries said it was important for the community to show emergency crews the appreciation they deserved.

"It's our way to give back to the services teams because they do so much for the community," she said. "We also give them 50 per cent off any coffees when they are in uniform as a token of our appreciation."



The Harries with meatball pasta.

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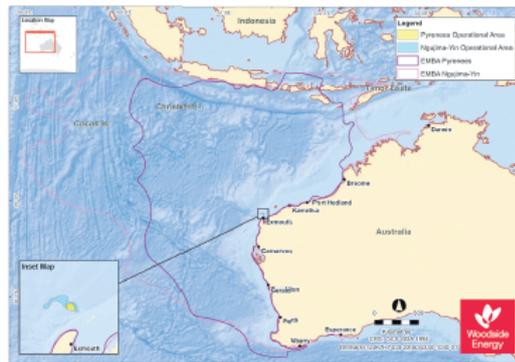
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Augusta Margaret River Times (15 September 2023)

12 NEWS

amrtimes.com.au

THE TIMES
Friday, September 15, 2023

Funds threat hits mental health help

WARREN HATELY

A lauded community network aiming to bolster the region's mental health needs is facing another major funding hurdle which could undo all of its good work.

Mindful Margaret River leaders say the group's unconventional model falls outside the easy parameters for State Government funding and without a significant commitment as soon as next month could lose its project officer, with valued Lotterywest money about to come to an end.

MMR was founded in 2019 through a collective of voluntary professionals to help residents access mental health services not readily available to people living outside of major hubs such as Bunbury and Perth.

However, project officer Erin Statz said a slew of programs and training initiatives planned as part of the group's latest strategic plan were now in jeopardy.

"It is hard to make long-term change when all grant funding is one-off, and only for new projects and limits how the funding can be used," Ms Statz said.

Dedicated funding was needed to support ongoing initiatives, particularly around early interven-

tion and prevention activities which required considerable planning and logistics.

Last month, the Times reported WA Association of Mental Health chief executive Taryn Harvey noting State Government investment was focused on acute care, which left gaps at the community level.

Ms Statz said funding was deserved to support volunteers who were stepping in where government services fell short.

"If it doesn't fit the funding box exactly, there is no funding for it," she said.

It was additionally frustrating because all sectors had championed MMR's work, but the funding system had not caught up.

Inaugural MMR chair Stuart Hicks said it was not the first time funding became a key issue.

The group came into existence partly as a response to WA's Department of Communities withdrawing its local office.

"Mindful Margaret River has had a profound benefit for mental health in our region," Mr Hicks said.

"The incomparable genius of the MMR model is its emphasis on friendly local people providing help to locals.

"A largely voluntary body like MMR depends on having an implementation officer to help co-ordinate and drive its efforts.

"It would be a crying shame if MMR and our community loses its implantation officer through lack of funds."

Mental Health Commissioner Maureen Lewis said the MHC remained in dialogue with MMR since 2020 and helping with funding through the MHC-funded South West Community Alcohol and Drug Service.

"The Commission acknowledges the group's important work in improving the mental health and wellbeing of the community," Ms Lewis said.

"We will continue to maintain an ongoing dialogue with MMR to learn about the issues faced by people in Margaret River and its surrounding communities, and explore possible funding opportunities in the future."

MHC noted the State Government had committed \$201 million during the next four years to increase mental health support services, plus \$24.4 million to the WA Country Health Service for mental health emergency tele-health services.



Mindful Margaret River project officer Erin Statz. Picture: Warren Hately

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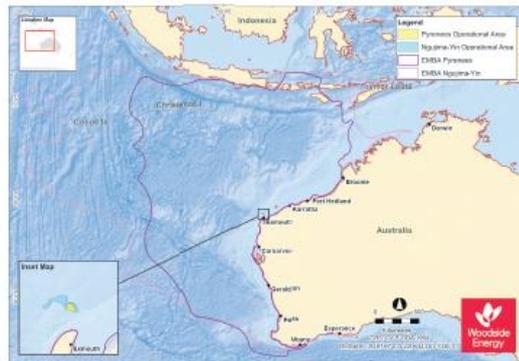
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Busselton Dunsborough Times (15 September 2023)

8 NEWS

bdtimes.com.au

Friday, September 15, 2023

Region's Telethon stars shine

CLAIRE SADLER

This year's Telethon will feature two pint-sized heroes from the South West.

Making up half of the Little Telethon Stars fab four are Emily Houston from Harvey and Bunbury's Connor Barrett.

They will be front and centre when the 56th Telethon runs from October 21-22, along with the other Telethon Little Stars Harrison Carthew and Sophia Marshall, both from Perth.

They all have stories to tell about their health struggles but share two common attributes — they never give up, and won't let their difficult circumstances dictate who they are.

Emily was diagnosed with acute lymphoblastic leukaemia at just four years old, while for Connor, cystic fibrosis leaves him unable to digest food, damages his lungs, and gives him excruciating pain in his digestive system.

Telethon chairman Richard Goyder knows all too well the struggles that come with having a child with an invisible disease.

His son Will, now 25, was diagnosed with diabetes as a child.

"As a parent you're always on top of that, while wanting to give your child as much freedom as they can have," he said.

"We used to have to get up every two hours at night to finger-prick him and check his blood sugar levels."

Seven-year-old Emily received her last round of treatment in



Telethon's Little Stars include Emily Houston of Harvey, and Bunbury's Connor Barrett, as well as Harrison Carthew and Sophia Marshall.

August but is still in a clinic as she continues her antibiotics and undergoes monthly blood tests to make sure she is not relapsing. The Harvey Primary School Year 2 student was granted a very special Make-A-Wish funded by Telethon — to become the Hulk and save her oncology team from an attack.

Make-A-Wish chief executive Sally Bateman said Emily's unique wish captured everyone's attention. "She has such a positive outlook, and learns and grows from her experiences," she said. "It was her desire to show the world how brave she is that made

her the perfect fit for the Little Telethon Stars." For eight-year-old Connor the treatment for his genetic disease requires 25 doses of medicine and two physio sessions a day. Cystic fibrosis is life-limiting, but Connor doesn't let it get in the way of his dreams. "I want to be a

scientist because it's interesting and you can help people," he said. This year, Telethon helped 107 beneficiaries continue to improve the health and wellbeing of sick and vulnerable WA children with the \$71.3 million raised in 2022, and it is hoped in 2023, it can achieve even more.

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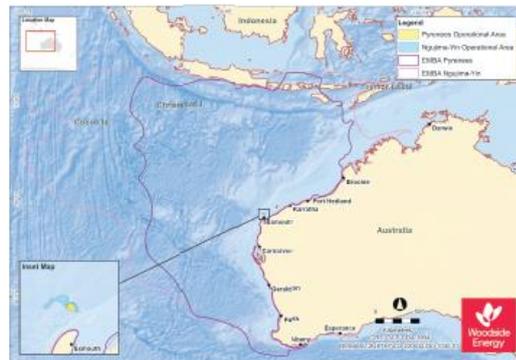
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Geraldton Guardian (15 September 2023)

12 NEWS

geraldtonguardian.com.au

Guardian
Friday, September 15, 2023

Sex pest masseur is guilty

EXCLUSIVE PETER DEVLIN

A former Geraldton massage therapist has been found guilty of inappropriately touching female clients and other lewd behaviour during sessions.

The trial of Chun Hung Wong resumed in the Joondalup Magistrates Court on Thursday, after being partly heard in Geraldton in March last year.

He was accused of a range of inappropriate conduct during massage sessions with nine female clients, some of whom were pregnant, between 2014 and 2021 at the now-closed Marine Terrace clinic Brilliant Massage.

He pleaded not guilty to 10 counts of unlawful and indecent assault.

After hearing from the nine complainants during a trial, Magistrate Evan Shackleton on Thursday found Wong guilty of four charges and acquitted him of six.

Wong was found guilty of masturbating while massaging a client in 2016.

Giving evidence in Geraldton, the female victim said Wong massaged her using only one hand and she believed she heard noises consistent with the sound of masturbation.

She said after the massage she noticed a "sticky-like" substance on the side of the massage table.

Another victim told a similar story of Wong's "laboured breathing" during a massage and said he was massaging her with only one hand.



Chung Hung Wong arrives at Joondalup Magistrates Court for an appearance in July. Picture: Christopher Tan

She said he then started "caressing" her bottom and was touching close to her genitals. At one point she said she heard what she thought was masturbation.

An 18-year-old said Wong had commented on her scent during a session in 2016.

In the same session, the client said she felt what she thought was the masseur's penis on her arm.

A fourth victim, who was pregnant at the time of the session, accused Wong of touching her inappropriately, clapping her buttocks together and sitting on top of her.

The magistrate found Wong guilty in each of these incidents. Mr Shackleton found Wong not guilty of three indecent assault charges relating to massage sessions with another client between August and October 2020.

Under cross-examination by the prosecution, Wong denied he masturbated or had an erection during some sessions.

When asked if he agreed that he needed consent if massaging close to sensitive areas, Wong said: "Yes, I always ask for consent, and for them to let me know if it needs changing."

He said even if massaging the buttocks area, his hands would not be close to a woman's genital area.

When asked why he needed to work on an area covered by underwear, Wong said: "I asked for permission to work on that area."

Wong, who answered questions mostly in English, conceded sometimes he asked clients to remove their underwear.

"It's easier because it's difficult when people wear tights or bicycle shorts and their underwear is tight — but it's an unusual case and I usually write it down on my notes," he said.

Some complainants testified about the "distinct smell of semen" and sounds that pointed to masturbation, but Wong argued the smell could have been his bad breath and put any sounds down to use of massage oil. In closing remarks, the police prosecutor said Wong's evidence changed as he went along and his explanations did not make sense. She said the complainants' evidence could be accepted as honest and reliable as they used different language to describe similar things, didn't know each other, and testified about common occurrences.

The prosecutor said based on all the evidence it could be found Wong preyed on the women for his own gratification.

Wong's defence lawyer Ashleigh Antoine, in her closing submission, said her client had made it clear all massages were done with consent or he believed he had the women's permission.

She said just because there was an absence of paperwork confirming consent, it didn't mean Wong didn't get it from his clients.

She said Wong maintained the massages were only done for a "legitimate therapeutic purpose".

The defence lawyer argued it was an "industry you will keep learning, there is no one way to massage".

Wong is set to be sentenced on December 22 at Joondalup Magistrates Court. His bail was renewed but he is prohibited from engaging in professional remedial or massage practices.

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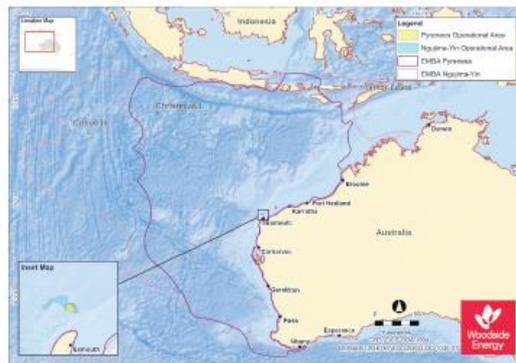
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Harvey Waroona Reporter (19 September 2023)

10 THE REFERENDUM DEBATE

harveyreporter.com.au

Reporter
Tuesday, September 19, 2023

Where the South West's

One month out from the referendum on the creation of an Aboriginal and Torres Strait Islander Voice in the Constitution, **Sean Van Der Wielen** asks South West MPs what they think of the proposal.

It is a debate which is set to be the talk of the town over the next few weeks.

On October 14, voters will be asked whether they support altering the Constitution to recognise the First Peoples of Australia by establishing an Aboriginal and Torres Strait Islander Voice. It is the first time in nearly 25 years the public has been asked to vote in a referendum.

With the vote now one month away, we have asked politicians representing the South West at a State and Federal level what their views are on the Aboriginal and Torres Strait Islander Voice.

Don Punch
Bunbury MLA, Labor
Do you support the Voice? YES

I support the creation of an Aboriginal and Torres Strait Islander Voice through changes to the Australian Constitution. I believe it is a fair and just response to address the issues creating the disadvantage experienced by First Nations people, and it comes without risk or detriment for the broader community. The Voice is simply about advice to inform better decision making, leading to better results. Everyone benefits when we achieve better results in our communities. We have everything to gain from listening and nothing to lose, and at the end of the day that is all the Voice is about, listening to Aboriginal people and matters that affect them. The Parliament will still determine how we listen and what we do

with the advice. The Voice does not undermine the authority of the Parliament. It's time we started listening, and there is nothing to fear.

Nola Marino
Forrest MHR, Liberal
Do you support the Voice? NO

All of us want better outcomes for Indigenous Australians particularly for those who live in regional and remote parts of Australia. However, I don't believe the Government's Voice model is the answer. Every Australian should be equal under our Constitution. There are no details, it will be costly, bureaucratic and divisive which is why I encourage everyone to show respect and care throughout this process. The result of this referendum will be decided by the Australian people.

Libby Mettam
Vasse MLA, Liberal
Do you support the Voice? NO

I support recognition of Indigenous Australians in our Constitution but as I have said publicly, can no longer vote yes in the upcoming referendum due to the lack of clarity around how the Voice will work. The Labor Government has had well over 12 months to provide more details and explain how the Voice to Parliament will work to improve the lives of Indigenous Australians but have disappointingly failed to do so. As we saw with the implementation, and subse-



quent scrapping, of the Aboriginal Cultural Heritage Act laws in WA, details matter. I had hoped the Prime Minister would be able to better explain how the Voice will lead to better practical outcomes, and I am disappointed he has not been able to provide those details. I recognise and respect that there are differing views in the community. Every Australian of voting age is entitled to an equal vote, and I respect Western Australia

will have their own reason that informs their vote on 14 October.

Jodie Hanns
Collie-Preston MLA, Labor
Do you support the Voice? YES

I'm voting yes because I believe an Indigenous Voice will help governments make better decisions on issues impacting the lives of Indigenous kids, families and com-

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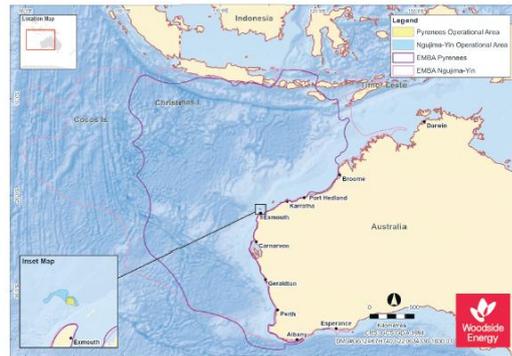
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Koori Mail (20 September 2023)



Relevant Person Consultation:

**ConocoPhillips Australia
Otway Exploration Drilling Program**

ConocoPhillips Australia is continuing to develop an Environment Plan for the proposed offshore Otway Exploration Drilling Program that consists of seabed surveys and the drilling of up to six exploration wells in exploration permits VIC/P79 and T/49P, located in Commonwealth waters.

ConocoPhillips Australia is releasing draft Environment Plan chapters to support consultation and has extended consultation on the proposed activity until **30 September 2023**, after which time we will pause consultation so we can collate a submission to NOPSEMA for public comment and assessment. Relevant persons can view the draft Environment Plan chapters and information on how to provide feedback via the consultation hub by scanning the QR code below or can request copies of the draft chapters and other relevant information, by contacting ConocoPhillips Australia.

We are asking relevant persons to provide feedback by **30 September 2023**.



The Environmental Planning Area covers the area assessed within the Environment Plan and encompasses a wide range of habitats and marine species, cultural values and socio-economic activities



SCAN HERE

For more information:
E: otway@conocophillips.com
T: 07 3182 7122
conocophillips.com.au



**Australian Government
Australian Heritage Council**

Environment Protection and Biodiversity Conservation Act 1999

**PROPOSED AMENDMENTS TO A NATIONAL HERITAGE LISTING:
WAVE HILL WALK OFF ROUTE**

CALL FOR PUBLIC COMMENT

The Australian Heritage Council is proposing amendments to the **Wave Hill Walk Off Route** National Heritage listing to correct factual errors in the listing. The National Heritage List recognises places that are of outstanding significance to the nation for their natural, Indigenous and/or historic heritage values.

The Australian Heritage Council, on community advice, proposes to change the date of the Walk Off from the **22nd of August 1966 to the 23rd of August 1966**. Further to this, parts of the Buchanan and Buntine highways that relate to the Walk Off Route have been renamed. The Council proposes amendments to the listing to correlate the historical route to contemporary maps. The Council's initial assessment concludes that all of these proposed amendments do not alter the National Heritage listed values of the place.

Comments are invited on these proposed amendments to the Wave Hill Walk Off Route listing. Further information is available by contacting the Australian Heritage Council at heritage@dcceew.gov.au. The Wave Hill Walk Off National Heritage listing can be accessed via the Australian Heritage Database, <http://www.environment.gov.au/cgi-bin/ahdb/search.pl>.

Contact us
Please provide any written comments by **5:00 PM AEST on 2 November 2023**.

Australian Heritage Council
GPO Box 3090
CANBERRA ACT 2601

Or by email to: heritage@dcceew.gov.au

All comments will be provided to the Minister for the Environment for consideration when making her decision on whether or not the proposed amendments alter the heritage values of the National Heritage Listing.



13 11 14

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Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin Floating Production Storage and Offloading (FPSO) facilities and is submitting a five-year revision to the operational Environment Plans. The Environment Plans for the Pyrenees FPSO and Ngujima-Yin FPSO facilities will cover operations including offloading and associated activities, inspection, maintenance, monitoring, and repair of the FPSOs and subsea infrastructure, disconnection and sail-away of the FPSO facilities when required, and production from two proposed additional wells from the Ngujima-Yin FPSO.

The Pyrenees FPSO is located about 45 km northwest of Exmouth, Western Australia. Production began in 2010 and is scheduled to end in 2035. The Ngujima-Yin FPSO is about 50 km, northwest of Exmouth, Western Australia. Production began in 2008 and is scheduled to end in 2026.

We are seeking input from relevant persons whose functions, interests or activities may be affected by continued operations.

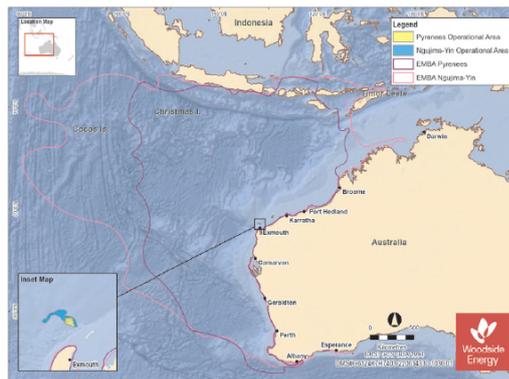
The environment that may be affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these two Environment Plans, is determined by modelling a highly unlikely release of hydrocarbons from loss of well control or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible modelled paths that a highly unlikely hydrocarbon release could travel if left unmitigated and depending on the weather and ocean conditions at the time of the release. This means in the highly unlikely event a hydrocarbon release does occur, the whole EMBA will not be affected.

We want to hear from you

If you are an individual, organisation or community group and believe your functions, interests or activities may be impacted by our activities, we would like to hear from you by **Friday, 27 October 2023** to identify you as a relevant person.



Want to know more or provide input?

A feedback form and more information can be found at: www.woodside.com/sustainability/consultation-activities

You can also subscribe via our website to receive future information on upcoming activities.

E: Feedback@woodside.com
Toll free: 1800 442 977
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National Indigenous Times (26 September 2023)

22 NIT THE INDIGENOUS BUSINESS REVIEW theibr.com.au

Call for probe of NAAJA

Allegations arise of misuse of millions at legal organisation

DAVID PRESTIPINO

Commonwealth Auditor-General Grant Hehir and the Australian National Audit Office have been urged to investigate the alleged misuse of millions of dollars within Australia's largest Indigenous legal organisation, the North Australian Aboriginal Justice Agency, after claims of corruption and fraud among staff.

NAAJA receives close to \$20 million in Commonwealth funding a year but dozens of serious allegations of criminal conduct among its leadership team are the subject of a Federal court case next month.

NAAJA receives \$83m over five years from the National Legal Assistance Partnership, a Federal Government agency, but shadow attorney-general Michaelia Cash has requested that Mr Hehir and ANAO consider "an audit of arrangements under the NLAP that may result in the payment of Commonwealth money to NAAJA" in a letter seen by The Australian newspaper.

"The reports raise serious concerns about the potential misuse of Commonwealth money provided under the

National Legal Assistance Partnership, and the efficacy of governance arrangements under that agreement," Senator Cash wrote.

She took aim at Federal Attorney-General Mark Dreyfus, who indicated the onus was on the Northern Territory Government to administer the NLAP funds.

"With respect, if that is the case, that is all the more reason for an audit," Senator Cash wrote.

"If NLAP arrangements are such that the administration of Commonwealth funding is done at arm's length, as the Attorney-General appears to contend, then the governance provisions in the intergovernmental agreement that allow the Commonwealth to appropriately monitor expenditure (and respond to any misuse of Commonwealth funds) are all the more important."

NAAJA conducts most Indigenous legal cases in the Territory, and has 200 workers in the NT.

Senator Cash said any recommendations from a performance audit of NAAJA could signal more robust governance of how Commonwealth funding

was spent and tracked. She said any improvements identified through an audit "ought to be implemented more generally in respect of funding to other service providers that is governed by the NLAP".

The ANAO recently found an alarming lack of audit controls at Australia's leading Indigenous funding organisation, the National Indigenous Australians Agency.

The NIAA employs more than 1300 people across Australia and had its budget in 2022-23 increased to \$4.5 billion to fund programs through the Federal Government's Indigenous Advancement Strategy.

The ANAO report said in 2021-22 the NIAA spent \$1.03b on more than 1000 external providers to deliver Indigenous Advancement Strategy activities and services, yet failed to initiate a single fraud investigation — an anomaly among similarly sized Federal agencies.

Indigenous Australians Minister Linda Burney told National Indigenous Times at the time that the audit shortfalls at the NIAA were "concerning".

The Australian reported the NT Commission Against Corruption was also investigating

the allegations against NAAJA, many of which have emerged in a Federal Court case filed by an employee who alleges she was fired after discovering the corrupt conduct of two senior members of its leadership team, who have both denied the claims and remain employed.

The matter is scheduled for trial from October 23.

In a statement issued last Wednesday, NAAJA said: "In the wake of recent media coverage regarding allegations of improper conduct by NAAJA, the NAAJA board confirms that it categorically refutes these allegations."

"In November 2022, the NAAJA board initiated two separate independent investigations."

"The first independent investigation was an audit of finance, credit card use and other undisclosed arrangements that were not authorised by the NAAJA board."

"This independent investigation was undertaken by BDO Australia."

"The BDO Australia findings were lodged with NT Police in February 2023."

"NAAJA is continuing to assist NT Police with their investigations. The BDO Aus-

tralia findings were also lodged with the Australian Federal Police.

"NAAJA is waiting on advice from the AFP on progress on their investigations into the matters identified in the BDO Australia independent investigation."

"The second independent investigation was an organisational review of corporate governance, maturity and the effectiveness of functional business unit systems and processes within NAAJA."

"This independent investigation was undertaken by KPMG and finalised in January 2023."

"All recommendations for improvement have been accepted and endorsed by the NAAJA board. NAAJA has commenced implementing key recommendations of the KPMG independent investigation with a focus on strengthening governance, systems, and operations."

"The NAAJA board is committed to ensuring that NAAJA continues to deliver quality services to its clients and community. NAAJA calls on NT Police and the AFP to take immediate steps to conclude their respective investigations as a matter of urgency."

NGUJIMA-YIN FLOATING PRODUCTION STORAGE AND OFFLOADING FACILITY OPERATIONS AND PYRENEES FACILITY OPERATIONS ENVIRONMENT PLANS

For more than 35 years, Woodside has been developing and operating LNG and oil projects in Australia. Our focus is the safety, reliability, efficiency and environmental performance of our operations and activities.

Woodside consults so that feedback from relevant persons is considered and used to inform the revision of two operations Environment Plans for the Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations.

Our activities

Woodside plans to continue producing crude oil at the Pyrenees and Ngujima-Yin Floating Production Storage and Offloading (FPSO) facilities and is submitting a five-year revision to the operational Environment Plans. The Environment Plans for the Pyrenees FPSO and Ngujima-Yin FPSO facilities will cover operations including offloading and associated activities, inspection, maintenance, monitoring, and repair of the FPSOs and subsea infrastructure, disconnection and sail-away of the FPSO facilities when required, and production from two proposed additional wells from the Ngujima-Yin FPSO.

The Pyrenees FPSO is located about 45 km northwest of Exmouth, Western Australia. Production began in 2010 and is scheduled to end in 2035. The Ngujima-Yin FPSO is about 50 km, northwest of Exmouth, Western Australia. Production began in 2008 and is scheduled to end in 2028.

We are seeking input from relevant persons whose functions, interests or activities may be affected by continued operations.

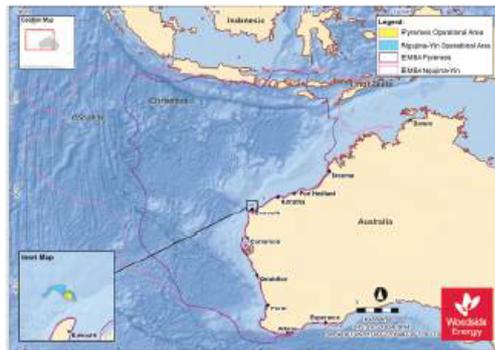
The environment that may be affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these two Environment Plans, is determined by modelling a highly unlikely release of hydrocarbons from loss of well control or a vessel collision with the FPSO with enough force to breach the hull.

The EMBA represents the merged area of many possible modelled paths that a highly unlikely hydrocarbon release could travel if left unmitigated and depending on the weather and ocean conditions at the time of the release. This means in the highly unlikely event a hydrocarbon release does occur, the whole EMBA will not be affected.

We want to hear from you

If you are an individual, organisation or community group and believe your functions, interests or activities may be impacted by our activities, we would like to hear from you by **Friday, 27 October 2023** to identify you as a relevant person.



Want to know more or provide input?

A feedback form and more information can be found at: www.woodside.com/sustainability/consultation-activities.

You can also subscribe via our website to receive future information on upcoming activities.

E: Feedback@woodside.com
Toll free: 1800 442 977
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3.2 Social media campaign – Environment Plan consultation

Social media posts – 13 September – October 2023

A Facebook and Instagram information campaign was geotargeted to three areas: Perth Metro, Regional – North and Regional – South to reach a broad number of communities adjacent to the EMBA.

Optimised to maximise reach and impressions, activity ran across both Feed and Story placements, optimising between Facebook and Instagram.

As at 15 November 2023

Ad reach: 1,360,350 users

Impressions: 7,021,890 views

Clicks through to *Consultation Information* page: 7067 link clicks.

Reach for geotargeted areas:

Location	Reach
Perth – Metro	1,146,919
Regional - North	295,721
Regional - South	226,182

•



3.3 Pilbara region community activities

3.3.1 Community information sessions – Karratha, Port Hedland and Roebourne – 18, 19 and 20 September 2023 respectively

Location	Karratha, Port Hedland, and Roebourne
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Date	18 – 20 September 2023
Description of the consultation	<p>Woodside hosted community consultation sessions in Karratha, Port Hedland and Roebourne to enable community members to understand Woodside’s proposed activities and how it may affect them, ask questions, and provide their feedback.</p> <p>Woodside Project, Corporate Affairs, First Nations and Environment representatives were available to answer questions.</p> <p>A number of Environment Plan Consultation Information Sheets were available to attendees including the Ngujima-Yin FPSO Facility Operations EP Consultation Information Sheet.</p>
Advertising and invitations	<p>Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and enable individuals to provide feedback on proposed activities, through the following:</p> <ul style="list-style-type: none"> • Advertisement in the Pilbara News on 13 September 2023 (Record of Consultation, reference 3.3.1). • Geotargeted social media campaign advertising in Karratha (Reach 22,095), Port Hedland (reach 26,487), and Roebourne (reach 22,134) (+80 kms) from 6 to 16 September 2023 (Record of Consultation, reference 3.3.1). • An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website), Scarborough Project banner, and Browse Project banners were displayed stand along with current EP factsheets.
Estimated number of individuals / organisations consulted	<p>18 September 2023 – Karratha. Estimated number of people consulted: 20</p> <p>19 September 2023 – Port Hedland. Estimated number of people consulted: 20</p> <p>20 September 2023 – Roebourne. Estimated number of people consulted: 0</p>
Summary of Feedback, Objection or Claim	
<p>Community discussions centred on:</p> <ul style="list-style-type: none"> • Update of Woodside activities and employment and contracting opportunities. • General Woodside activities on the North West Shelf including the location of operations. Woodside noted the need for additional gas and the role Browse could play at the Karratha Gas Plant. • Some individuals had worked on a Woodside operations / project of knew family and friends that had. • General overview of what an EMBA was. • All community members were encouraged to provide their views on Woodside’s activities through the Woodside feedback form on the Woodside website, or to subscribe to Woodside updates. An iPad was available for stakeholders to do this on the spot. 	
Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	
<p>Whilst feedback was received, there were no objections or claims.</p> <p>The community information sessions were part of Woodside’s broader consultation approach to enable self-identification and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).</p>	

Pilbara News Advertisement – 13 September 2023

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City of Karratha Mayor Peter Long. Picture: Tom Zauzmayr

Mayor runs again as candidates put forward pitches

DANIEL SPENCE

Nominations have closed for the 2023 Karratha mayoral and councillor elections, with the list of candidates running to be the city's next mayor being released.

Peter Long — who has been in the position since 2011 — will be running again and said, if re-elected, he would continue to provide Karratha with intelligent, safe and inclusive leadership.

"I am a full-time mayor, always able to receive you and your ideas," he said. "I love the Pilbara and our community."

Regional Development Australia Pilbara chief executive and former local government minister Tony Simpson is also running for mayor.

His vision is to join forces with State and Federal entities to progress childcare, health and housing solutions.

"I would work to draw major brand investments in retail and leisure to provide more options for residents. Identify land for a

foreshore entertainment hub and infuse Karratha with festivals and quality entertainment," he said.

Brenton Johannsen — who ran for the seat of Durack at the recent Federal election under One Nation — said he would donate the entire mayoral allowance to charity.

"I will be a committed full-time mayor, my goal is to visit all businesses and resident groups on a regular basis to touch base and discuss any new issues," he said.

Mr Johannsen said his aims would be neighbourhood safety, more opportunities for locals, ratepayer discounts for local facilities, moving airport smokers' areas, and eco-friendly weed management.

As a sitting councillor, radio announcer, parent and former local business owner mayoral candidate Pablo Miller said he had got to know the people of Karratha.

"As your mayor, I will continue to not only listen but be a strong advocate for our community," he

said. Mr Johannsen said he was interested in expanding opportunities for young people and families, growing local and cultural tourism, supporting businesses and bolstering mental health services.

The owner of the North West Brewing Co Daniel Scott has a vision as mayor to grow Karratha's economy.

His plan is to create an education and sporting precinct between the TAFE and St Luke's College, with accommodation for secondary and tertiary students.

His plans also include a new home for the Pilbara Universities Centre, and a sporting hub for rugby, soccer, hockey and gymnastics.

Those running for council include Daniel Scott, Kieran Dart, Wayne Mothershaw, Mr Johannsen, Sarah Booth, George Levisianos, Bradley Dawey, Mr Simpson, James Corea, Joseph Almonte and Geoff Harris.

Elections will be held for the four vacancies on October 21st.



FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Speak to our friendly team members at one of our four sessions in September.

Monday, 18 September 2023
Between 8.00am - 12.00pm
Karratha Shopping Centre
Sharpe Avenue
Karratha

Monday, 18 September 2023
Between 3.00pm - 6.00pm
Red Earth Arts Precinct
27 Welcome Road
Karratha

Tuesday, 19 September 2023
Between 10.00am - 5.00pm
South Hedland Square
9-31 Throssell Road
South Hedland

Wednesday, 20 September 2023
Between 10.00am - 4.00pm
Woodside Office
39 Roe Street
Roebourne



You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.




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Social Media – 6 to 16 September 2023

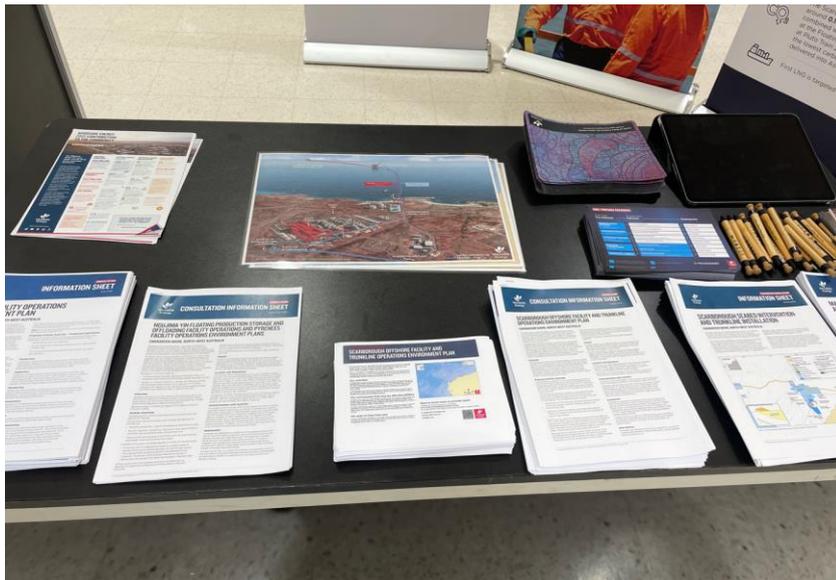
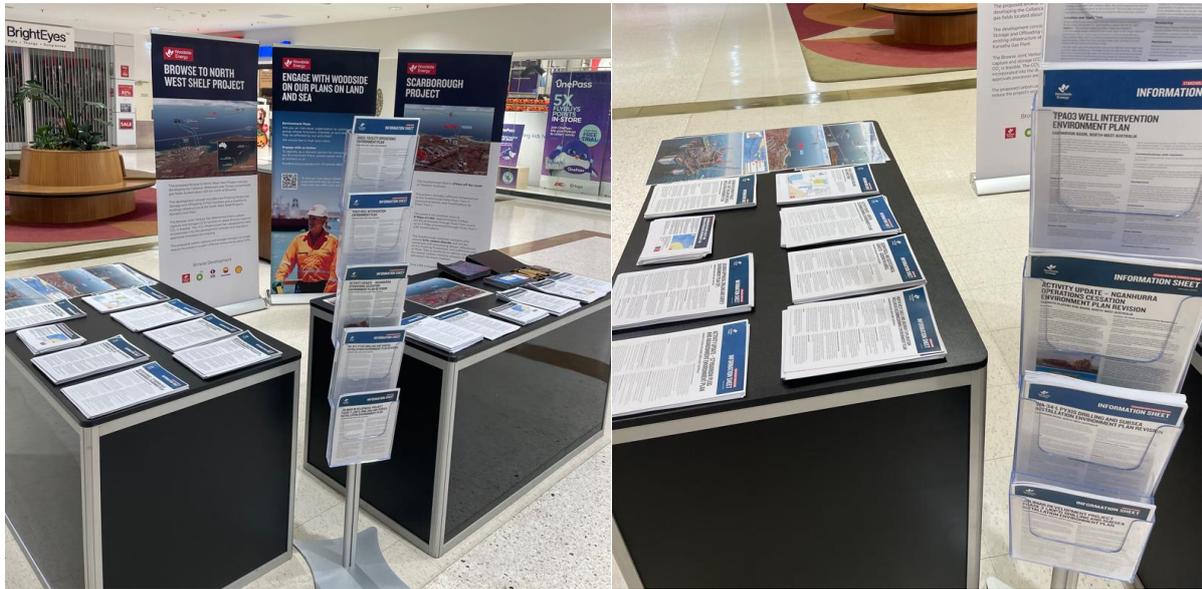
<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Karratha.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Monday, 18 September 2023</p> <p>Between 8.00am - 12.00pm Karratha Shopping Centre Sharpe Avenue Karratha</p> <p>Between 3.00pm - 6.00pm Red Earth Arts Precinct 27 Welcome Road Karratha</p> 	<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Port Hedland.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Tuesday, 19 September 2023</p> <p>Between 10.00am - 5.00pm South Hedland Square 9-31 Throssell Road South Hedland</p> 	<p>Are you interested in what Woodside has planned on land and sea?</p> <p>Stop by and say hello to our friendly team in Roebourne.</p> <p>We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.</p> <p>Wednesday, 20 September 2023</p> <p>Between 10.00am - 4.00pm Woodside Office, Roebourne 39 Roe Street Roebourne</p> 
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Social media reach:

Location	Reach
Karratha	22,095
Port Hedland	26,487
Roebourne	22,134

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Karratha Shopping Centre, Karratha – 18 September 2023



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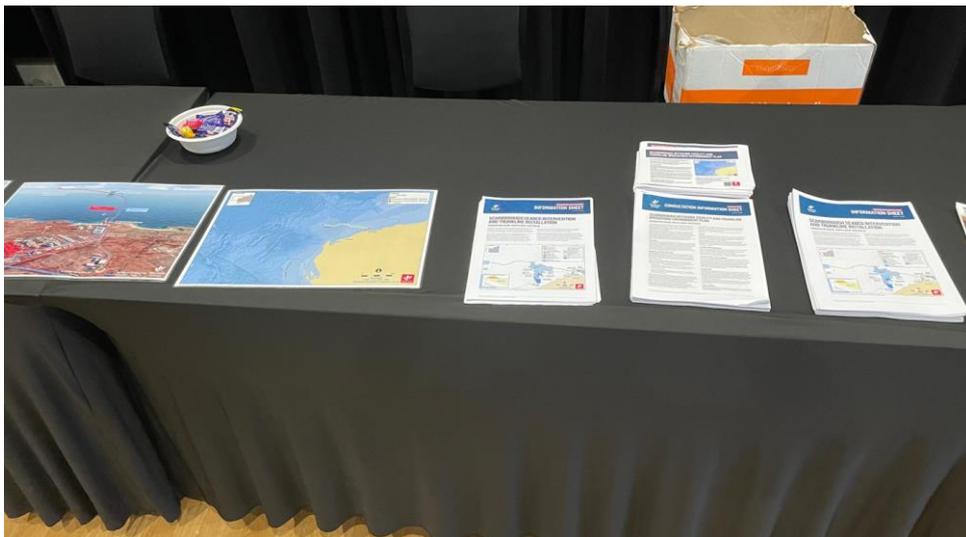
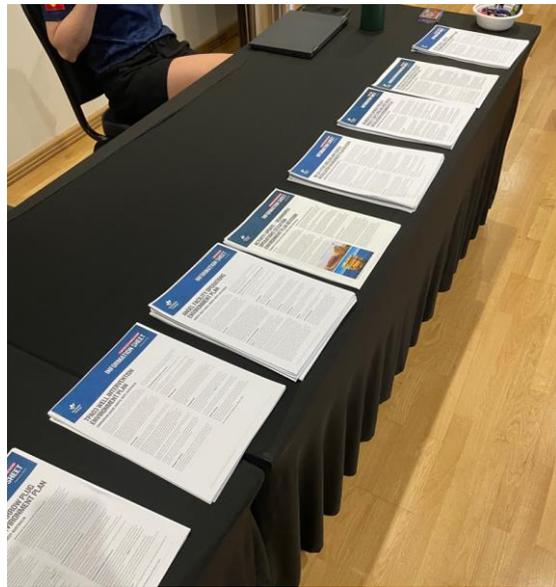
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Red Earth Arts Precinct, Karratha – 18 September 2023



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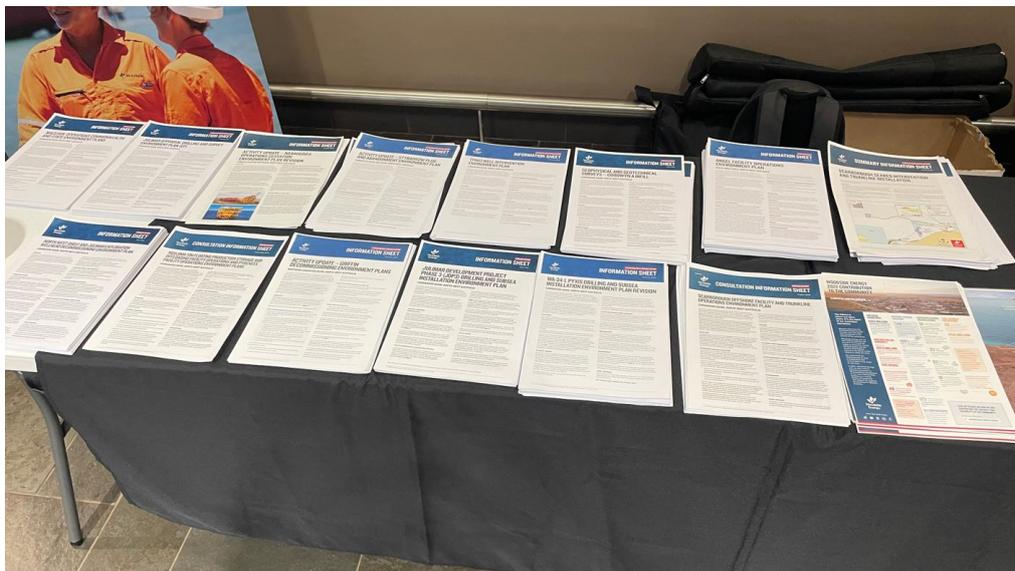
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South Hedland Square, Port Hedland – 19 September 2023



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Woodside Office, Roebourne – 20 September 2023



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3.3.2 Karratha Community Liaison Group Meeting (29 September 2023)

CONSULTATION



LOCAL ENGAGEMENT SESSIONS

- We consult relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment.
- This month we held sessions for local community members to seek information about our EPs, to discuss functions, activities of interest that by be affected by our proposed projects and to provide an opportunity for feedback.
- Locations included the Karratha Shopping Centre, Red Earth Arts Precinct, Woodside's Roebourne Office
- Sessions were advertised to build community awareness and interest.

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed projects.

Speak to our friendly team members at one of our four sessions in September.

Monday, 18 September 2023 Between 8.00am - 12.00pm Karratha Shopping Centre Sharpe Avenue Karratha	Monday, 18 September 2023 Between 3.00pm - 6.00pm Red Earth Arts Precinct 27 Welbome Road Karratha
Tuesday, 19 September 2023 Between 10.00am - 2.00pm South Hedland Square 9-31 Throssell Road South Hedland	Wednesday, 20 September 2023 Between 10.00am - 4.00pm Woodside Office 39 Roe Street Roebourne

You can access our consultation information, provide feedback, and subscribe for updates by scanning the QR code.

Advertisement - Pilbara News, 13 September 2023

Facebook advertisements



3.3.3 Pilbara Summit – 10 and 11 October 2023

Activity	Pilbara Summit 2023
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Location	Karratha
Date	10 – 11 October 20203
Description of the consultation	Woodside hosted a stand at Pilbara Summit 2023 (Record of Consultation, reference 3.3.3), a sold-out conference established to raise the profile of issues and opportunities in the Pilbara region. The event provides the opportunity for the Pilbara region’s industry, investors, businesses, community, and government representatives to connect. The stand was staffed by members from Woodside’s Corporate Affairs, Supply Chain and New Energy teams. Woodside displayed a QR code on the stand, linked to the consultation activities page of the Woodside website. Woodside also made available printed Consultation Information Sheets on the Ngujima-Yin Floating Production Storage and Offloading Facility Operations Environment Plan.
Advertising and invitations	No advertising was undertaken. The Vice President for Pluto and Scarborough delivered a speech during the conference, which highlighted the important role the Pilbara region will continue to play in the energy transition. Attendees were invited to find out more about Woodside’s projects, developments or environment plans by speaking team members on the Woodside conference stand or to visit Woodside’s town office based in The Quarter.
Estimated number of individuals / organisations consulted	Over 600 people attended the event over 2 days
Summary of Feedback, Objection or Claim	
Approximately 25 conversations occurred around new energy opportunities and plans, local content, social investment, Chevron’s involvement in NWSP, Onslow operations and Scarborough project and approvals in general. No feedback was received regarding Woodside’s Environment Plans.	
Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	
This session forms part of Woodside’s broader consultation approach to enable self-identification, and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).	

Woodside information stand – 10-11 October 2023

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3.3.4 Community information sessions – Carnarvon and Denham – 16 and 17 October 2023

Location	Carnarvon and Denham - Community Consultation Roadshow
Date	16 and 17 October 2023
Description of the consultation	Woodside hosted community consultation sessions in Carnarvon and Denham to enable community members to understand Woodside’s proposed activities and how it may affect them, ask questions, and provide their feedback. Woodside Project, Corporate Affairs and Environment representatives were available to answer questions.

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	A number of Environment Plan Consultation Information Sheets were available to attendees including the Ngujima-Yin FPSO Facility Operations Consultation Information Sheet.
Advertising and invitations	Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and enable individuals to provide feedback on proposed activities, through the following: (1) Advertisement in the Pilbara News on 4 October 2023 (Record of Consultation, reference 3.3.4). (2) Geotargeted social media campaign advertising in Carnarvon and Denham and surrounding areas (+80 kms) from 9 to 16 October 2023 (Appendix F, reference 3.3.4). (3) An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website), and Scarborough Project banner were displayed along with current EP factsheets.
Estimated number of individuals / organisations consulted	Carnarvon – 3 Denham – 2 (Shire of Shark Bay)
Summary of Feedback, Objection or Claim	
Community members were able to engage with Woodside representatives to understand the proposed activity and how it may affect them, ask questions, and provide their feedback. <ul style="list-style-type: none"> • General interest in Woodside activities in the Pilbara • Discussion with the Shire of Shark Bay: <ul style="list-style-type: none"> ○ Explained purpose of consultation for EPs ○ Noted consultation based on an EMBA and no activities planned in Shark Bay ○ Provided an overview of Woodside activities ○ Shire advised it will provide a list of other relevant persons to consult, recognising the need to consult the community more broadly 	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
Whilst feedback was received, there were no objections or claims. The community information sessions were part of Woodside's broader consultation approach to enable self-identification, and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).	

Pilbara News Advertisement – 4 October 2023

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Pilbara NEWS
Wednesday, October 4, 2023

pilbaranews.com.au

NEWS 13

MinRes in \$24m deal with local company

DANIEL SPENCE

Local Pilbara Indigenous-owned business Djeloanna Pty Ltd has been awarded a \$24 million contract by Mineral Resources as part of the company's flagship Onslow Iron project.

It is the largest contract MinRes has ever signed with an Indigenous-owned business, as well as the first contract awarded to Djeloanna Pty Ltd, which is a Robe River Kuruma business. The Robe River Kuruma people are the traditional owners of the land on which the Ken's Bore mine site is located.

"The four-year contract is for exploration earthworks at Ken's Bore mine site, east of Onslow, including constructing access tracks, building drill pads, road maintenance and general earthworks."

Djeloanna Pty Ltd will employ about 10 people as



MinRes managing director Chris Ellison and Djeloanna business owner Bevan Wally. Picture: Russell James

part of the contract including a project manager, mechanics, operators and administration staff.

Djeloanna Pty Ltd owner Bevan Wally, who grew up on country, said: "The support provided by MinRes has given us the confidence and capacity to help establish and grow our business. MinRes have shown us action and given us commitments. It's unreal for them to invest and give us a go."

MinRes managing director Chris Ellison said that the company was proud to

partner with businesses such as Djeloanna that had such a strong connection to country.

"Providing practical guidance and support, such as guaranteeing finance for equipment and plant, helps to build local capability and ensure Indigenous-owned businesses share in our success," he said.

At the contract signing ceremony in Perth, Mr Wally presented traditional gifts to Mr Ellison, including boomerangs, a shield and a long stick.



SUPPORTING OUR LOCAL COMMUNITIES

The MinRes Community Fund supports our commitment to making meaningful contributions to the communities in which we operate.

Grants of up to **\$10,000** are available to eligible local organisations to support programs and events that help create strong, vibrant and healthy communities.

Applications are open to groups operating in the **Pilbara and Goldfields-Esperance regions** or within the **Shires of Yilgarn, Irwin and Mingenew**.

Applications accepted between **1 to 31 October 2023**.

TO APPLY

visit mineralresources.com.au/our-sustainability/community or email communities@mr.com.au



Schools to get a staff cash boost

DANIEL SPENCE

Pilbara schools will benefit from a multi-million-dollar cash injection from the State Government to recruit and retain staff.

Education Minister Tony Buti said the success of last year's temporary Regional Attraction and Incentive Package meant an additional 18 schools would benefit from \$15.49 million worth of incentive packages.

Schools in the Pilbara who will receive a boost include Broome Senior High School, Carnarvon Community

College, Karratha Senior High School, Hodland Senior High School, Tom Price Senior High School and Newman Senior High School.

"The incentive helps rural schools to attract and recruit teachers and retain staff and school administrators at schools by providing additional financial incentives."

Staff members will receive between \$5000 and \$17,000 for working in rural and remote public schools for the 2024 school year.

The incentives will be paid

in two instalments: the first at the start of the 2024 school year, the balance paid at the end of the 2024 school year.

Dr Buti said schools in regional and remote areas faced additional challenges when recruiting and retaining teachers.

"This significant investment will bring greater continuity for regional and remote students, their families, and the whole community," he said. The temporary Regional Attraction and Retention Incentive was initially allocated to 48 regional and remote schools.



FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Speak to our friendly team members at one of our sessions in October.

Monday, 16 October 2023
Between 10.00am - 2.00pm
Gwoonwardu Mia
146 Robinson Street
Carnarvon

Tuesday, 17 October 2023
Between 9.00am - 1.00pm
Denham Town Hall
Hughes Street
Denham



You can access our consultation information, provide feedback and subscribe for updates by scanning the QR code.



Government of Western Australia
Department of Health

Fluoridation for the Newman drinking water system

Community water fluoridation helps protect teeth against decay and is a safe and effective way of improving oral health. More than 92 per cent of the Western Australian population, including the Perth metropolitan area and most large regional communities in the Pilbara and other parts of Western Australia, has benefited from fluoridation of drinking water for more than 40 years.

Fluoridation equipment has been installed at the water treatment plant servicing Newman and is now operational. As with similar plants located throughout Western Australia, the Department of Health will monitor the performance of the water treatment plant to ensure compliance with the Australian Drinking Water Guidelines and the Fluoridation of Public Water Supply Act 1966.

For more information, please contact the Department of Health by email to ehinfb@health.wa.gov.au or call 08 9222 2000 or visit health.wa.gov.au and search fluoridation.

Dr Andrew Robertson
Chief Health Officer

Social media tiles and stories – 9 – 16 October 2023

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Carnarvon.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 16 October 2023

Between 10.00am - 2.00pm
Gwoonwardu Mia
146 Robinson Street
Carnarvon



Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Carnarvon.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 16 October 2023

Between 10.00am - 2.00pm
Gwoonwardu Mia
146 Robinson Street
Carnarvon



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Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Denham.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Tuesday, 17 October 2023

Between 9.00am - 1.00pm
Denham Town Hall
Hughes Street
Denham



Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Denham.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Tuesday, 17 October 2023

Between 9.00am - 1.00pm
Denham Town Hall
Hughes Street
Denham



Banners and consultation sheets – Carnarvon - 16 October 2023

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Banner – Denham – 17 October 2023



3.3.5 Dampier Beachside Twilight Markets – 4 November 2023

Activity	Dampier Beachside Twilight Markets
Location	Dampier, Hampton Oval
Date	4 November 2023
Description of the consultation	<p>Woodside hosted a stand at the Dampier Night Markets a community event bringing together local businesses selling a vast array of product types, a variety of food vendors and community groups.</p> <p>The stand was staffed by members from Woodside’s Corporate Affairs, First Nations, and Environment teams.</p> <p>Woodside displayed a QR code on the stand, linked to the consultation activities page of the Woodside website.</p> <p>Woodside made available printed consultation information sheets on the Ngujima-Yin FPSO Facility Operations EP.</p> <p>An iPad with consultation/feedback subscription prompt was made available</p>
Advertising and invitations	<p>Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and enable individuals to provide feedback on proposed activities, through the following:</p> <ul style="list-style-type: none"> • Advertisement in the Pilbara News on 1 November 2023 (Record of Consultation, reference 3.3.5) • Social media posts were published inviting public to attend on Woodside North West Facebook page and Dampier Community Associations Beachside Markets Facebook page (Record of Consultation, reference 3.3.5). • An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website), and Scarborough Project banner were displayed at Woodside’s stand along with current EP factsheets.
Estimated number of individuals /	Over 1000 community members (Dampier Community Association) attended the event Woodside spoke to many community members, recording 14 meaningful conversations

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organisations consulted	
Summary of Feedback, Objection or Claim	
<p>(1) General queries around employment and local content opportunities.</p> <p>(2) General interest in Pluto Train 2 progress and Scarborough project and trunkline location.</p> <p>(3) Query around fauna activity mitigations. Woodside staff discussed whale migration research and vessel whale spotters.</p> <p>(4) Woodside social investment activities.</p> <p>(5) EP approval process discussed, NOPSEMA's role, what an EMBA is and why we want to talk to community.</p>	
Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	
<p>Whilst feedback was received, there were no objections or claims.</p> <p>The community information sessions were part of Woodside's broader consultation approach to enable self-identification, and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).</p>	

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Pilbara News Advertisement – 1 November 2023

Pilbara NEWS
Wednesday, November 1, 2023

NEWS 9

Hard work earns Zane Walkington scholarship

DANIEL SPENCE

St Luke's College Year 12 student Zane Goes has been awarded the City of Karratha 2023 Walkington Award for his academic achievements and outstanding citizenship.

This is the 40th time the award, valued at \$5000, has been given to a Year 12 student within the City of Karratha to continue full-time or part-time tertiary studies. Zane is a sports captain and member of St Luke's student executive council.

As part of his role he has run new initiatives such as the Father's Day breakfast, men's mental health day, International Women's Day and the school busy bee.

Zane will use the \$5000 award from the City of Karratha to support his studies in physiotherapy.

Former city of Karratha Mayor Peter Long congratulated this year's recipient and all applicants for their outstanding achievements.

"The Walkington Award has a proud history of supporting local students who embody the three pillars of academic excellence, extra-



Zane Goes receives his award from the outgoing mayor of Karratha Peter Long.

curricular activities and community service," he said. "We are beyond proud of the leadership, commitment and accountability our young people demonstrate and the significant contribution they make to our community." He said Zane was a hard working student who

had achieved stand-out results including Academic Excellence Awards in Years 11 and 12.

"I would like to wish Zane all the best on his studies as he pursues his dream to be a physiotherapist and hope to one day see him practice in Karratha."



MHS Annual General Meeting

ACN: 139453348

ADVERT

All Members are welcome to attend with lunch provided. It is to be held:

Date: Monday, 27 November 2023

Time: 10:00am

Location: 20 Sholl Street, Roebourne

Members will be sent a copy of the agenda...

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Westmore Seafoods

0458971587 • f @factorydirectseafood

greg@westmoreseafoods.com

Bill Miller Drive, Johns Creek Boat Harbour Point Samson WA

EV charging stations open

DANIEL SPENCE

Electric vehicle fast chargers have been installed in Karratha, Exmouth and Kununurra as part of the WA EV Network extending into the Pilbara.

The stations are the first of six planned to be installed by mid-2024.

The WA EV Network is being delivered by Horizon Power and Synergy as part of the State Government's \$4.5 billion investment to boost EV infrastructure and includes 98 charging stations in 49 locations connecting Perth to regional WA. When complete, the \$21m network will stretch more than 7000km which will help to make clean transportation more accessible in WA.

The charging sites have a 150kW fast charger that allows drivers to charge their vehicles in 20 minutes.

The charging station in Exmouth has an additional DC fast charger allowing four EVs to be charged at the same time.

The WA EV Network will stretch north to Kununurra, along the south-west coast to Esperance and



Horizon Power's Cameron Parrotte with member for Pilbara Kevin Michel. Picture: Marg Berting

east to Kalgoorlie and Eucla which is due to be completed next year.

As part of the project, Horizon Power is installing EV fast chargers at 27 of these locations across regional and remote WA.

Executive GM, engineering & project delivery at Horizon Power Cameron Parrotte in his speech at the opening of the charging station said: "It was hoped the project was the start of something bigger. "It's not until you can get about 200km and be able to charge with confidence that we know we can bring these stations to this part of the country. It's great to see Red Dog renewables

hiring the cars for their employees to use," he said.

"This is site No.5 going live and around October next year we will have 27 new locations complete."

There have been more than 3200 charging sessions along the WA EV Network since the first charging site went live in Geraldton in April 2023.

Energy Minister Bill Johnston said WA's transition to a cleaner, greener electric vehicle future was well under way.

"We are delighted Karratha, Exmouth and Kununurra have joined the WA EV Network, with many more fast chargers opening soon," he said.



FIND OUT MORE ABOUT OUR PROPOSED ACTIVITIES

ARE YOU INTERESTED IN WHAT WOODSIDE HAS PLANNED ON LAND AND SEA?

Stop by and say hello to our friendly team in Dampier to find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed projects, including Scarborough and Browse.

We'd like to consult relevant persons in the course of preparing our Environment Plans to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Dampier Beachside Markets
Saturday, 4 November 2023
Between 5.30 pm to 8.30 pm
Hampton Oval, Dampier, WA

You can also access our consultation information and provide feedback by scanning the QR code.



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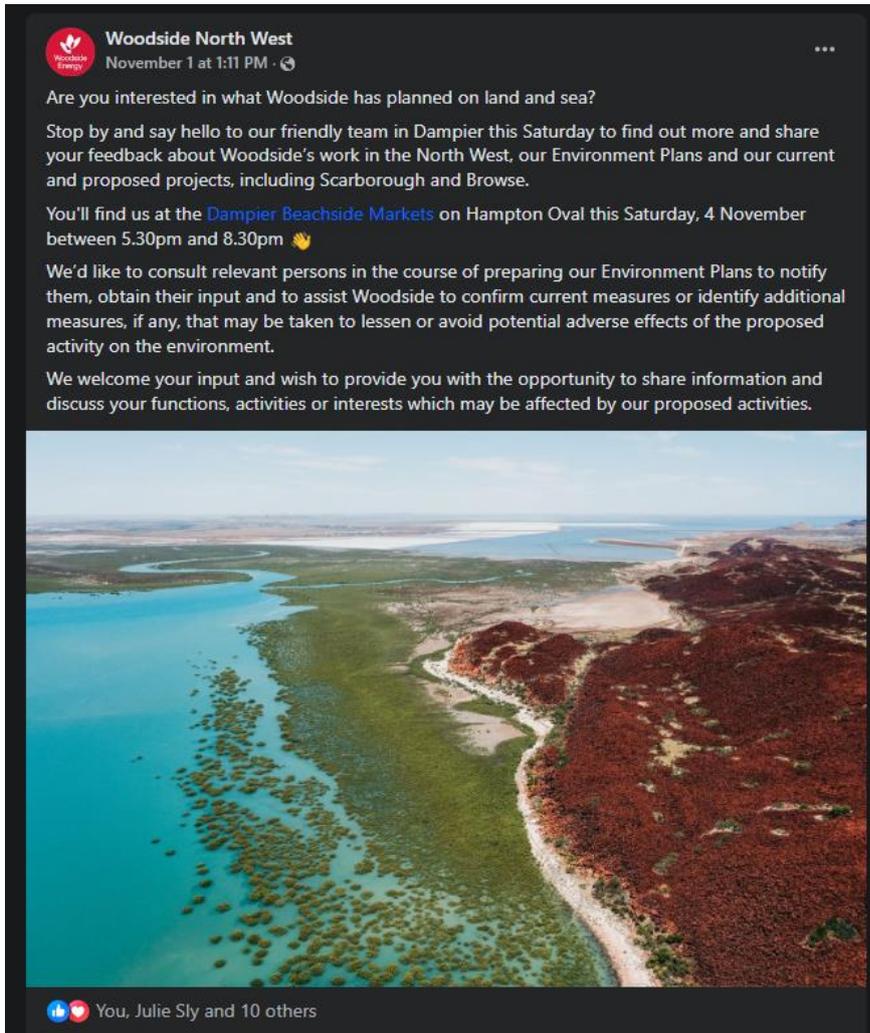
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Facebook post – Woodside North West page – 1 November 2023



Facebook post – Dampier Beachside Markets – 2 November 2023

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Dampier Beachside Markets
November 2 at 11:21 AM · 🌐

DAMPIER BEACHSIDE MARKETS
📅 4 Nov | 530pm - 830pm 📅

Coming to our Guy Fawkes Markets for the year:
WOODSIDE ENERGY

#dampierlovewhereyoulive #Dampiercommunityassociation #dampierbeachsidemarkets #dampier #DCA #karrathaiscalling #markets #guyfawkes

SATURDAY NOV 4
530PM - 830PM

Are you interested in what Woodside has planned at land and sea?

Stop by and say hello to our friendly team in Dampier to find out more and share your feedback about Woodside's work in the North West, our Environment Plans and our current and proposed projects, including Scarborough and Browse.

We'd like to consult relevant persons in the course of preparing our Environment Plans to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that may be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Dampier Beachside Markets
Saturday, 4 November 2023
Between 5.30 pm and 8.30 pm
Hampton Oval, Dampier WA 6713

WOODSIDE Energy

Woodside Energy

You and Sarah-jayne Morgan

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Woodside event stand – 4 November 2023



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3.3.6 Karratha Community Liaison Group – 24 November 2023

CONSULTATION CAMPAIGN



CONSULTATION



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3.4 Gascoyne region community activities

3.4.1 Community information session – Exmouth – 23 October 2023

Activity	Exmouth Consultation Roadshow
Location	Exmouth
Date	23 October 2023
Description of the consultation	<p>Woodside hosted a community consultation session in Exmouth to enable community members to understand Woodside’s proposed activities and how it may affect them, ask questions, and provide their feedback.</p> <p>Woodside Project, Corporate Affairs, First Nations, Environment, and Biodiversity and Science representatives were available to answer questions.</p> <p>A number of Environment Plan Consultation Information Sheets were available to attendees including the Ngujima-Yin FPSO Facility Operations EP Consultation Information Sheet.</p>
Advertising and invitations	<p>Woodside advertised the sessions to enable individuals to self-identify, become aware of the community consultation, and enable individuals to provide feedback on proposed activities, through the following:</p> <ul style="list-style-type: none"> • Advertisement in the Pilbara News on 4 October 2023 (Record of Consultation, reference 3.4.1). • Geotargeted social media campaign advertising in Exmouth and surrounding areas (+80 kms) from 2 to 9 October 2023 (Record of Consultation, reference 3.4.1). • Directly inviting local Traditional Custodian groups (Record of Consultation, Table 1). • An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website), and Scarborough Project banner were displayed at Woodside’s stand along with current EP factsheets.
Estimated number of individuals / organisations consulted	<p>Exmouth –</p> <p>Four individuals attended the information session. One from Gascoyne Green Energy, two Shire Councillors and a representative from Exmouth’s Chamber of Commerce and Industry.</p>
Summary of Feedback, Objection or Claim	
<p>Community members were able to engage with Woodside representatives to understand the proposed activity and how it may affect them, ask questions, and provide their feedback.</p> <ul style="list-style-type: none"> • All stakeholders expressed they had seen the geotargeted ads on social media. • General interest in Woodside activities and interest in the social benefits to the local Exmouth community. This included encouragement for Woodside to promote and share the positive outcomes of Woodside’s presence and an offer from the Chamber to share information amongst its members. • General interest to understand what is involved in a marine seismic survey (MSS). Woodside presented its video on MSS. • General interest to understand the interaction of whales and MSS, and what mitigation measures are put in place for our activities. • Interest to understand how Woodside undertakes community consultation 	
Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	
<p>Whilst feedback was received, there were no objections or claims.</p> <p>The community information sessions were part of Woodside’s broader consultation approach to enable self-identification, and provide relevant persons with the opportunity to assess any impacts on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see Section 5.2).</p>	

Social media tile and story – 2 – 9 October 2023

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Exmouth.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 23 October 2023
Between 10.00am - 5.00pm
Exmouth Chamber of Commerce and Industry
22 Maidstone Crescent
Exmouth

 Woodside Energy

Are you interested in what Woodside has planned on land and sea?

Stop by and say hello to our friendly team in Exmouth.

We'd like to talk to relevant persons about our Environment Plans. We welcome your input and wish to provide you with the opportunity to share information and discuss your functions, activities or interests which may be affected by our proposed activities.

Monday, 23 October 2023
Between 10.00am - 5.00pm
Exmouth Chamber of Commerce and Industry
22 Maidstone Crescent
Exmouth

 Woodside Energy

3.4.2 Exmouth Community Liaison Group Meeting (21 November 2023)

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ENVIRONMENT PLAN CONSULTATION

Changes to consultation (recap)

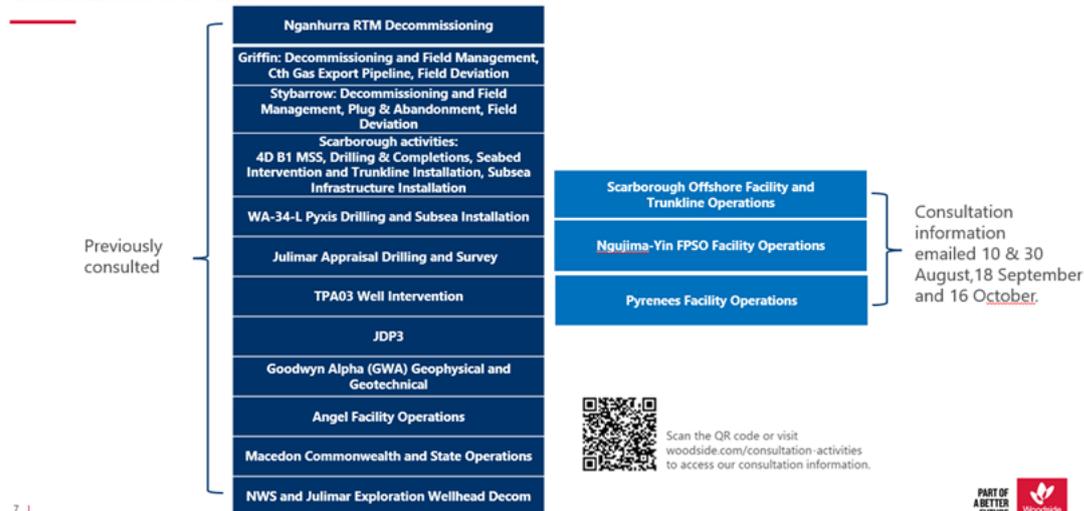
- Changes to Commonwealth Environment Plan (EP) consultation requirements.
- Woodside is now consulting based on the **environment that may be affected (EMBA)** by a proposed petroleum activity rather than within the Operational Area.
- The EMBA is the largest spatial extent where unplanned events, no matter how unlikely, could potentially have an environmental impact.
- Any person or organisation who does not wish to continue to receive EP consultation materials where they have only been assessed as 'relevant' for unplanned events in the EMBA, under the EP consultation requirements, please advise us in writing and we will not send further information.
- However, you should be aware that this request will need to be recorded in our EP documents or as part of other associated regulatory processes and may -be publicly available.
- We want relevant persons whose functions, interests or activities that may be affected by the proposed activity to have the opportunity to provide feedback on our proposed activities.
- If you would like further information on any of the proposed activities on the following [slide](#) please let me know, or email feedback@woodside.com.au.

5 |



ENVIRONMENT PLAN CONSULTATION

Consultation with Exmouth CLG



7 |

Information sheets are available on Woodside's website. You can also subscribe to receive updates on our consultation through our [website](#)

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ENVIRONMENT PLAN CONSULTATION

Pyrenees facility operations

- Five-year revision for this EP in accordance with C'wealth regulations
- The Pyrenees facility, 45km north of Exmouth, includes Floating Production Storage and Offloading (FPSO) and associated subsea infrastructure (Figure 3)
- Woodside plans to continue producing crude oil at the Pyrenees facility. Activities include:
 - Routine oil production, crude oil offloading and associated activities;
 - Routine inspection, monitoring, maintenance and repair (IMMR) of the FPSOs and associated subsea infrastructure; and
 - Disconnection and sail-away of the FPSOs with the turret mooring and subsea infrastructure remaining in place.

For details, please refer to the information sheet in the email sent to the Exmouth CLG on 18 September and 16 October 2023

Information sheets are also available on Woodside's [website](#) and you can also subscribe to receive updates on our consultation through our [website](#)

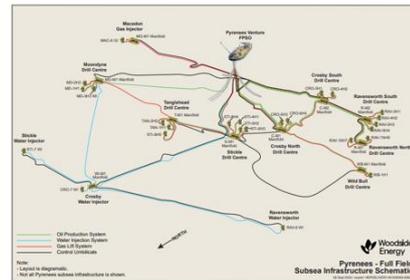


Figure 3. Overview of subsea infrastructure layout associated with the Pyrenees FPSO (not to scale)

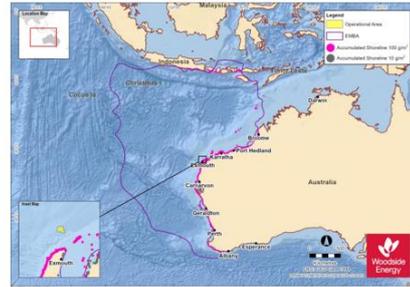


Figure 4. Pyrenees FPSO Operations Environment that May be Affected (EMA) by an unpermitted hydrocarbon release from an accident during the Pyrenees Activities Program.

APPENDIX G ONGOING ENGAGEMENT WITH TRADITIONAL OWNERS

Proposed Program of Ongoing Engagement with Traditional Custodians

This Program of Ongoing Engagement with Traditional Custodians (“Program”) has been developed to demonstrate Woodside’s commitment to ongoing engagement and support of Traditional Custodians’ capacity to care for and manage Country, including Sea Country, and has been directly informed by Traditional Custodians’ feedback regarding their capacity to engage and consult on Environment Plans.

It is a living document designed to evolve with ongoing consultation and feedback from Traditional Custodians and, at a minimum, will be subject to annual review. In addition to this Program, Woodside will continue to participate in, and support collective industry engagement with Traditional Owners on the development of a future, sustainable, industry wide Program. Through the Program, Woodside actively supports Traditional Custodians’ capacity for, and involvement in, ongoing engagement and feedback on environment plans.

The Program has been developed so that Traditional Custodians can, on an ongoing basis, provide Woodside with feedback relating to the possible consequences of an activity to be carried out under an environment plan on their functions, interests and activities as they relate to cultural values. This feedback will be evaluated in conjunction with Traditional Custodians and, where necessary, avoidance or mitigation strategies will be developed in collaboration with Traditional Custodians. How the Program is implemented with specific Traditional Custodians will depend on their stated needs and priorities

The Program is underpinned by Woodside’s First Nations Communities Policy (woodside.com), the objective of which is to ensure Woodside partners and engages with First Nations communities to create positive economic, social and cultural outcomes that leave a lasting legacy. Woodside does this through building respectful relationships and partnerships with First Nations communities where we are active, in the areas where they are most interested in. We acknowledge the unique connection that First Nations communities have to land, waters and the environment.

The Program will include, as agreed with relevant communities, reasonable commitment to:

1. Support for ongoing dialogue and engagement

Woodside will support the capacity of Traditional Custodians to participate in ongoing dialogue and engagement about the environment plans and to enable the ongoing and future identification of cultural values potentially impacted by Woodside’s activities. Woodside further commits to agreeing consultation protocols with individual Traditional Custodians to ensure the material provided is appropriate in level of detail such that the potential for cultural impact from Woodside activities can be determined and as required measures can be adopted to avoid or minimise impact.

In addition, Woodside will receive feedback on cultural values from an individual person or organisation that identifies as a Traditional Custodian, at any stage during the development and implementation of activities. This feedback will be evaluated, in conjunction with the Traditional Custodian individual or group and if required, control measures will put in place to avoid impacts to cultural values, or where avoidance is not possible, to minimise and mitigate the impacts to an acceptable level.

Where cultural values are identified post activity completion, any controls relevant to value management will be implemented during the next relevant activity.

2. Support for the identification and recording of cultural features

Woodside will support Traditional Custodians to record and articulate their Sea Country values and will invest in cultural assessments codesigned with Traditional Custodians, where required, to inform potential risks to cultural values from our petroleum activities.

This may include supporting cultural mapping by Traditional Custodians to identify and map significant cultural features including archaeological sites and other cultural values. The scoping of the mapping process will be codesigned with Traditional Custodians.

Woodside understands that cultural knowledge remains the intellectual property of Traditional Custodians and will agree with Traditional Custodians at the outset how that information from surveys will be used to feedback into and inform the environment plan's design and implementation.

In addition, Woodside applies the Cultural Heritage Management Procedure 2019, updated in 2023, to the Program which:

- provides a process for the identification, protection, and management of Cultural Heritage taking into account relevant standards, in particular, the United Nations Declaration on the Rights of Indigenous Peoples, the Charter for the Protection and Management of the Archaeological Heritage, the Convention for the Safeguarding of the Intangible Cultural Heritage, and the Convention on the Protection of the Underwater Cultural Heritage;
- applies to underwater cultural heritage and, consistent with current practice, provides for the commissioning of (where appropriate) both archaeological and ethnographic assessments of cultural values over the submerged landscape; and
- the process includes the following:
 - early engagement with relevant Traditional Custodians
 - identification of potential heritage, this could include desktop and field surveys undertaken with the Traditional Custodians.
- the development of cultural management strategies; and, where it is determined cultural heritage may be impacted, the development of Cultural Heritage Management Plans codesigned with Traditional Custodians and implemented by Woodside's First Nations team which:
 - focus on avoidance or minimisation of impacts; and
 - provide regular reviews and for inclusion of new information and further development of the Cultural Heritage Management Plan.

Woodside is committed to continue to receive feedback on cultural values for the life of an environment plan, the inclusion of new information and the development of avoidance or mitigation strategies in collaboration with Traditional Custodians. This information will be recorded via the Woodside Management of Knowledge Process and any potential impacts to the accepted Environment Plan evaluated via the Woodside Management of Change Process.

3. Building capacity for the ongoing protection of country

Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups. This is guided by Woodside's Indigenous Affairs Strategy 2019 ("Strategy"), which is designed to enable the building and maintaining of relationships with Traditional Custodians to leave a lasting legacy, including strengthening of Traditional Custodians' capacity to care for and manage Country, including Sea Country. The Strategy was developed with inputs from Traditional Custodians and contains four pillars that direct Woodside's social investment, policies relating to economic development, procurement and employment, and Woodside's agreement making and implementation of agreements. The pillars are:

1. Culture and Heritage Management: support social outcomes through protection, recognition and respect for culture and heritage;
2. Economic Participation: provide training, jobs, and business opportunities;

3. Capability and capacity: ensure strong corporate governance, leadership development and education initiatives to support self-determination; and
4. Safer and Healthier Communities: partner with Aboriginal people and service providers to maximise safer and healthier community outcomes.

Woodside is committed to an ongoing relationship between Woodside and the Traditional Custodian groups. Through consultation with Traditional Custodians Woodside will continue to:

- establish support for Indigenous ranger programs via social investment;
- establish support for Indigenous oil spill response capability via investigating training models;
- establish support for identification and recording of cultural values and the management of that information by Traditional Custodians;
- establish support for programs identified by the Traditional Custodians as important to them and as agreed by Woodside.

4. Support for capacity and capability in relation to governance

Pillar 3 of the Indigenous Affairs Strategy 2019 focuses on ensuring strong corporate governance, leadership development and education initiatives to support self-determination. To enable this, Woodside will support measures to increase the capability and capacity of the Traditional Custodian groups, including in relation to governance and management systems.

The nature of this support will be informed by the individual needs of Traditional Custodian groups, but may include:

- funding or other support for community meetings, particularly where consultation with representative bodies lies outside of that body's core business and cultural authority or mandate needs to be secured,
- resourcing internal expertise so that information is managed consistently and internally, including ensuring appropriate record keeping of consultation to provide stakeholders with a lasting record of discussions, and
- development or upgrade of IT systems to manage information.

5. Program Reporting and Review of Effectiveness

Woodside will undertake an annual review of the Program to assess its effectiveness and adapt the Program accordingly. The annual review will also include an assessment of appropriateness of the methods used to undertake ongoing consultation with Traditional Custodians.

Progress of the Program will be reported annually in line with annual sustainability reporting via the Woodside website.

6. Current Status

Following distribution of this proposed Program, Woodside is now participating in a number of specific ongoing consultation activities with Traditional Custodian Relevant Persons. Specific ongoing activities are tabulated below:

Traditional Custodian Relevant Person	Ongoing Consultation Description	Forward Plan	Estimated Timeframes
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	BTAC proposed a Collaboration Agreement in May 2023, Woodside agreed in principle, and exchanged correspondence to understand details of the proposal. The Collaboration Agreement would enable support for BTAC to undertake an ethnographic assessment to articulate values, and ensure appropriate cost recovery	Woodside and BTAC have executed a Costs Acceptance Letter. Woodside has developed a Collaboration Agreement which is currently under internal Woodside review. Once settled internally it will be put to BTAC for their consideration.	The draft Collaboration Agreement will be provided to BTAC for consideration in November 2023. Woodside will follow up on a monthly basis for at least six months with BTAC once they are in receipt of the draft proposed Collaboration Agreement from Woodside, or until the Agreement is in place.
Yamatji Marlpa Aboriginal Corporation (YMAC)	In June 2023, YMAC provided Woodside a proposed draft Framework Agreement, and a proposal to fund in-house expertise to support consultation and implement the Collaboration Framework. In July 2023, Woodside agreed in principle to the proposed Collaboration Framework and the funding proposal and requested a meeting to work together on details. Woodside provided the Proposed Program of Ongoing Consultation to complement the proposed Collaboration Framework.	Woodside will continue to communicate with YMAC, seeking to collaborate and reach agreement on the proposed Collaboration Framework and funding agreement. At the point of EP submission, Woodside is seeking a meeting with YMAC at YMAC's earliest convenience.	Woodside will follow up with YMAC on a monthly basis for at least six months, seeking to progress the Collaboration Framework and funding agreement.
Wirrawandi Aboriginal Corporations (WAC)	In August 2023, WAC proposed a Framework Agreement with Woodside to provide a streamlined, formalised approach to consultation between WAC and Woodside. Woodside has confirmed receipt of the proposed framework from WAC.	Woodside is in contact with the WAC CEO and is currently developing a response to the proposed Framework Agreement put forward by WAC. WAC do not object to Woodside progressing environmental plans on the proviso that both parties enter into an Agreement suitable to each party. WAC have suggested a timeframe to settle the Agreement over the next 2-3 months. Woodside will be aiming to reach agreement within a shorter timeframe.	Ongoing Framework Agreement settled in 2023.
Ngarluma Aboriginal Corporation (NAC)	In September 2023, NAC proposed a Joint Working Group to practically manage consultation processes. It was proposed that the group would meet monthly for 2023 and quarterly thereafter, meetings would include NAC CEO and NAC Directors and potentially independent SME/s, the proposal was that Woodside draft a Framework Agreement, and included a request for funding for this approach. Woodside provided in-principle support for the proposal.	Woodside has provided in-principle support for NAC's proposal and is currently developing a draft Framework Agreement which once settled internally will be sent to NAC for their response.	In accordance with NAC's proposed timeframe, Woodside aims to prepare a draft Framework Agreement, settle internally and then meet to discuss in 2023.
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	In a meeting during August 2023, NTGAC proposed a Framework Agreement. This included terms for ongoing	Woodside and NTGAC/YMAC have agreed in writing to develop a Framework Agreement. Woodside have been responding to queries from NTGAC who have passed	Woodside will follow up with NTGAC on a monthly basis for at least six months, seeking to

	<p>engagement such as frequency of consultation, participation, and content.</p> <p>NTGAC has also requested Woodside provide funding for an in-house environmental scientist to review material. Woodside agreed in principle to this approach, and has requested a first draft of the Framework Agreement for consideration. Woodside have agreed to pay for YMAC's in-house scientist to attend NTGAC meetings to advise NTGAC.</p>	<p>information provided by Woodside onto their Environmental Scientist. Woodside are awaiting a proposed draft of a Framework Agreement and general report. YMAC's preference is to prepare the drafts, Woodside have offered to assist with drafting and remain ready to respond on receipt of documents.</p>	<p>progress the Framework Agreement and General report.</p>
Yinggarda Aboriginal Corporation (YAC)	<p>In August 2023, YAC requested Woodside provide a draft Framework Agreement for their consideration. Woodside has provided a draft Framework Agreement to YAC for review.</p>	<p>Woodside's Proposal suggests meeting with YAC every 3 months to progress matters. The Proposal suggests committing to work continuing between meetings with each party nominating focal points. A Scope of Work and schedule of rates is included to re-imburse the cost of ongoing consultation. Woodside's Proposal includes timeframes for anticipated milestones and has suggested the Proposal be in place for an initial 2-year period. Woodside has provided the draft Framework Agreement to YAC; they have advised that they will seek direction from the YAC Board on the proposal.</p>	<p>Woodside will continue following up with YAC on a monthly basis for at least six months, seeking to progress the Framework Agreement.</p>
Robe River Kuruma Aboriginal Corporation (RRKAC)	<p>RRKAC have noted that they are insufficiently resourced to engage further and respond to Woodside regarding EPs. Woodside assesses that a Framework Agreement could address this.</p>	<p>Woodside has on several occasions written to RRKAC offering to fund consultation meetings. Woodside will offer RRKAC a Framework Agreement which will propose funding, scope of work and timeframes to assist with consultation and ongoing consultation.</p> <p>If RRKAC are open to the proposal, it is intended to put forward a draft Framework Agreement to RRKAC within the next 2 months.</p>	<p>Woodside will follow up with RRKAC monthly for at least six months, seeking to progress a Framework Agreement.</p>
Ngarluma Yindjibarndi Foundation Limited (NYFL)	<p>NYFL and Woodside have an existing Agreement in place which enables quarterly communication about Woodside activities. NYFL has said they are working with other First Nations organisation and representative Bodies developing a Framework Agreement.</p>	<p>Woodside has not yet seen a draft of the Framework Agreement. Woodside's expectation is that it will outline principles of engagement, details of resourcing, timeframes to meet agreed outcomes etc. Woodside look forward to receiving a draft Agreement and will engage with NYFL to settle on the details of any proposal.</p>	<p>Woodside will continue to follow up monthly with NYFL for at least six months, seeking to progress a Framework Agreement.</p>
Yindjibarndi Aboriginal Corporation	<p>Yindjibarndi have advised that they are represented by NYFL for consultation on oil and gas matters. NYFL and Woodside have met to discuss the consultation framework to be used by NYFL as representatives of Yindjibarndi. Woodside will seek to use the Framework Agreement proposed by NYFL (above) for ongoing consultation with Yindjibarndi.</p>	<p>Per NYFL above.</p>	<p>Per NYFL above.</p>
Kariyarra Aboriginal Corporation (KAC)	<p>In September 2023 KAC proposed an agreement which would include meeting arrangements, ongoing consultations, specialist advice and contact protocols.</p>	<p>Woodside support funding request that are reasonable and will seek to reach agreement on a funding proposal put forward by KAC. Woodside agrees that a Framework Agreement is a sound tool to set out ongoing consultation with KAC, funding arrangements and social investment opportunities that KAC would want explored. Woodside will propose a first draft of an agreement and put to KAC in the</p>	<p>Woodside will continue to follow up monthly with KAC for at least six months, seeking to progress a Framework Agreement.</p>

		first instance. Woodside will prepare a draft agreement within the next two months to for KAC's consideration.	
Bardi and Jawi Niimidiman Aboriginal Corporation (BJNAC)	In June 2023, BJNAC provided Woodside a draft resourcing protocol for consultation. Woodside noted that the draft protocol was drafted with a focus on land based activities that fall within the BJNAC native title determination, as opposed to offshore activities. In October 2023, BJNAC and Woodside met to review the resourcing protocol, which resulted in some small changes being agreed. BJNAC and Woodside agreed that both organisations were on the same page for ongoing consultation.	Woodside supports funding request that are reasonable.. Woodside agrees that the resourcing protocol is a sound tool to set out ongoing consultation with BJNAC, funding arrangements and employment, training and contracting opportunities that BJNAC want to explore. Woodside is awaiting BJNAC's revised protocol.	Woodside will continue to follow up monthly with BJNAC for at least six months, seeking to progress a Resourcing Protocol.
Karajarri Traditional Lands Association (KTLA)	.On 19 April 2023 and 2 May 2023, KTLA said they would seek funding support from Woodside and were developing paperwork/proposal for sending to Woodside.	Woodside supports funding requests that are reasonable. Woodside is awaiting KTLA's proposal.	Woodside will continue to follow up monthly with KTLA for at least six months, seeking to progress a Framework Agreement.

APPENDIX H OIL SPILL PREPAREDNES AND RESPONSE MITIGATION ASSESSMENT



Oil Spill Preparedness and Response Mitigation Assessment for Ngujima-Yin FPSO Operations Environment Plan

Corporate HSE

Hydrocarbon Spill Preparedness

March 2024

Revision 0b

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EXECUTIVE SUMMARY

Woodside Energy Ltd (Woodside) has developed its oil spill preparedness and response position for the Ngujima-Yin operations, hereafter known as the Petroleum Activities Program (PAP).

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to As Low as Reasonably Practicable (ALARP) and Acceptable levels. It achieves this by evaluating response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP described in the Environment Plan (EP). This document then outlines Woodside’s decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness.

A summary of the key facts and references to additional detail within this document are presented below.

Table 0-1: Summary of the key details for assessment

Key details of assessment	Summary	Reference to additional detail
<p>Worst Case Credible Scenario</p>	<p>Major Environmental Event-01 (MEE-01): Loss of well containment: a long-term uncontrolled subsea release of Vincent Crude from the Vincent Infill Well (VNBH4-ST2) at 21° 26' 01.66" S / 114° 01' 59.41" E. 258,549 m³ over 77 days of Vincent Crude. 58.5% residual component of 258,549 m³</p> <p>Major Environmental Event-05 (MEE-05): FPSO Cargo Tank Loss of Containment: a short-term surface release of NY Topsides Blend caused by a vessel collision with the FPSO at 20° 03' 1.44" S / 115° 31' 35.04" E. Instantaneous release of 40,828 m³ of NY Topsides Blend. 30.8 % residual component of 40,828 m³</p>	<p>Section 2.2</p>
<p>Hydrocarbon Properties</p>	<p>Vincent Crude Vincent Crude contains a high proportion (~58.5 % by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. The unweathered mixture has a dynamic viscosity of 132.07 cP at 40 °C. The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 6% of the oil mass should evaporate within the first 24 hours (BP < 265 °C); and a further 35.2% should evaporate over several days (265°C < BP < 380 °C).</p> <p>NY Topsides Blend NY Topsides Blend contains a high proportion (~30.8 % by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. The unweathered mixture has a dynamic viscosity of 96.7 cP at 40 °C.</p>	<p>Section 6.8.1 of the EP Appendix A of the First Strike Plan</p>

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	<p>The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere.</p> <p>Evaporation rates will increase with temperature, but in general about 3.3% of the oil mass should evaporate within the first 12 hours (BP < 180 °C); a further 14.8% should evaporate within the first 24 hours (180°C < BP < 265 °C); and a further 51.1% will evaporate over several days (265°C < BP < 380 °C).</p>			
<p>Modelling Results</p>	<p>Stochastic modelling</p> <p>A quantitative, stochastic assessment has been undertaken for credible spill scenarios to help assess the environmental risk of a hydrocarbon spill.</p> <p>A total of 100 replicate simulations were completed for the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (25 simulations per quarter).</p>	<p>Section Error! Reference source not found.</p>		
	<p>Deterministic modelling</p> <p>Deterministic modelling was then undertaken for scenarios MEE-01 and MEE-05 as the worst-case credible scenarios (WCCS) to establish the following for response planning purposes:</p> <ul style="list-style-type: none"> • Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m²) • Minimum time to shoreline contact (above 100 g/m²) • Largest volume ashore at any single Response Priority Area (RPA) (above 100 g/m²) • Largest total shoreline accumulation (above 100 g/m²) all shorelines • Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100/ 50 ppb respectively) 			
			<p>MEE-01: Subsea hydrocarbon release of 258,549 m³ of Vincent Crude over 77 days</p>	<p>MEE-05: Surface hydrocarbon release of 40,828 m³ of NY Topsides Blend over 16 hours</p>
	<p>Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m²)</p>		<p>1.3 days to Ningaloo Coast WH (Q2, Run 10)</p>	<p>1.4 days to Ningaloo Coast WH (Q2, Run 11)</p>
<p>Minimum time to shoreline contact (above 100 g/m²)</p>	<p>3.5 days to Muiron Islands (including MMA) (Q4, Run 4)</p>	<p>2.5 days to Exmouth, Ningaloo MP (State), and Ningaloo Coast WH (Q2, Run 11)</p>		

	Largest volume ashore at any single Response Priority Area (RPA) (above 100 g/m ²)	13,442 m ³ at Ningaloo MP (State) and Ningaloo Coast WH (Q4, Run 23)	3,036 m ³ at Ningaloo MP (State) and Ningaloo Coast WH (Q2, Run 11)	
	Largest total shoreline accumulation (above 100 g/m ²) all shorelines	21,339 m ³ at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH (Q4, Run 23)	3,069 m ³ at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH (Q2, Run 11)	
	Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100/50 ppb)	1.7 days to Ningaloo Coast WH (entrained) (Q2, Run 10)	1.3 days to Ningaloo Coast WH (dissolved) (Q2, Run 19)	
Net Environmental Benefit Analysis	Operational monitoring, source control, subsea dispersant injection, surface dispersant application, containment and recovery, protection and deflection, shoreline clean-up, oiled wildlife response, are all identified as potentially having a net environmental benefit (dependent on the actual spill scenario) and carried forward for further assessment.			Section 4
ALARP evaluation of selected response techniques	The evaluation of the selected response techniques shows the proposed controls reduced the risk to an ALARP and Acceptable level for the risk presented in Section 2, without the implementation of considered additional, alternative or improved control measures.			Section 7

1 INTRODUCTION

1.1 Overview

Woodside Energy Ltd (Woodside) has developed its oil spill preparedness and response position for the Ngujima-Yin, hereafter known as the Petroleum Activities Program (PAP). This document outlines Woodside's decisions and techniques for responding to a hydrocarbon loss of containment event and the process for determining its level of hydrocarbon spill preparedness.

1.2 Purpose

This document, together with the documents listed below, meet the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Environment Regulations) relating to hydrocarbon spill response arrangements.

- The Ngujima-Yin FPSO Operations Environment Plan (EP)
- Oil Pollution Emergency Arrangements (OPEA) (Australia)
- The Ngujima-Yin Oil Pollution Emergency Plan (OPEP) including
 - First Strike Plan (FSP)
 - Relevant Operations Plans
 - Relevant Tactical Response Plans (TRPs)
 - Relevant Supporting Plans
 - Data Directory.

The purpose of this document is to demonstrate that the risks and impacts from an unplanned hydrocarbon release and the associated response operations are controlled to As Low as Reasonably Practicable (ALARP) and Acceptable levels.

1.3 Scope

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to As Low as Reasonably Practicable (ALARP) and Acceptable levels. It achieves this by evaluating response options to address the potential environmental risks and impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP described in the EP. This document then outlines Woodside's decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness. It should be read in conjunction with the documents listed in Table 1-1. The location of the Petroleum Activity Program is shown in Figure 3.2 of the EP.

1.4 Oil spill response document overview

The documents outlined in Table 1-1 and Figure 1-1 are collectively used to manage the preparedness and response for a hydrocarbon release.

The Oil Pollution First Strike Plan (FSP) contains a pre-operational Net Environmental Benefit Analysis (NEBA) summary, outlining the selected response techniques for this PAP. Relevant Operational Plans to be initiated for associated response techniques are identified in the FSP and relevant forms to initiate a response are appended to the FSP.

The process to develop an Incident Action Plan (IAP) begins once the Oil Pollution FSP is underway. The IAP includes inputs from the Operational Monitoring operations and the operational NEBA (Section 4). Planning, coordination and resource management are initiated by the Incident

Management Team (IMT). In some instances, technical specialists may be utilised to provide expert advice. The planning may also involve liaison officers from supporting government agencies.

During each operational period, field reports are continually reviewed to evaluate the effectiveness of response operations. In addition, the operational NEBA is continually reviewed and updated to ensure the response techniques implemented continue to result in a net environmental benefit (Section 4).

The response will continue as described in Section 5 until the response termination criteria have been met.

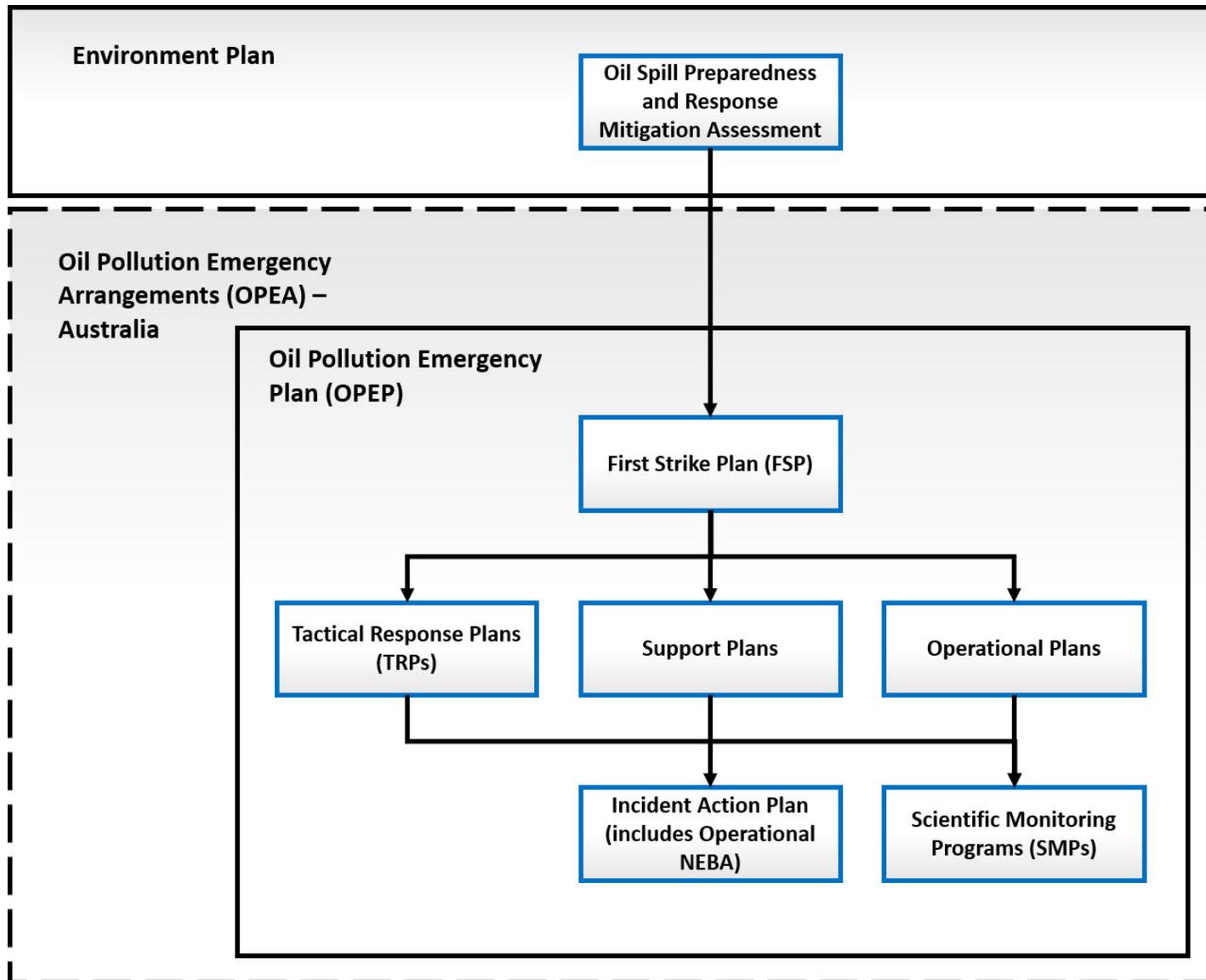


Figure 1-1: Woodside hydrocarbon spill document structure

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Table 1-1: Hydrocarbon Spill preparedness and response – document references

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Ngujima-Yin FPSO Operations Environment Plan (EP)	Demonstrates that potential adverse impacts on the environment associated with the Ngujima-Yin (during both routine and non-routine operations) are mitigated and managed to As Low As Reasonably Practicable (ALARP) and will be of an acceptable level.	NOPSEMA Woodside internal	EP Section 6.8 (Identification and evaluation of environmental risks and impacts, including credible spill scenarios). EP Section 6.8 (Performance outcomes, standards and measurement criteria) EP Section 7 (Implementation strategy – including emergency preparedness and response, and Reporting and compliance)	EP Section 6.8.3 for MEE-01 EP Section 6.8.5 for MEE-05
Oil Pollution Emergency Arrangements (OPEA) Australia	Describes the arrangements and processes adopted by Woodside when responding to a hydrocarbon spill from a petroleum activity.	Regulatory agencies Woodside internal	All	
Oil Spill Preparedness and Response Mitigation Assessment for the Ngujima-Yin (this document)	Evaluates response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP described in the EP.	Regulatory agencies Corporate Incident Management Team (CIMT): Control function in an ongoing spill response for activity-specific response information.	All Performance outcomes, standards and measurement criteria related to hydrocarbon spill preparedness and response are included in this document.	
Ngujima-Yin Oil Pollution First Strike Plan	Facility specific document providing details and tasks required to mobilise a first strike response. Primarily applied to the first 24 hours of a response until a full Incident Action Plan (IAP)	Site-based IMT for initial response, activation and notification. CIMT for initial response, activation and notification. CIMT: Control function in an ongoing spill response	Initial notifications and reporting required within the first 24 hours of a spill event. Relevant spill response options that could be initiated for mobilisation in the event of a spill. Recommended pre-planned tactics.	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
	<p>specific to the event is developed.</p> <p>Oil Pollution First Strike Plans are intended to be the first document used to provide immediate guidance to the responding Incident Management Team (IMT).</p>	<p>for activity-specific response information.</p>	<p>Details and forms for use in immediate response. Activation process for oil spill trajectory modelling, aerial surveillance and oil spill tracking buoy details.</p>	
Operational Plans	<p>Lists the actions required to activate, mobilise and deploy personnel and resources to commence response operations.</p> <p>Includes details on access to equipment and personnel (available immediately) and steps to mobilise additional resources depending on the nature and scale of a release.</p> <p>Relevant operational plans will be initially selected based on the Oil Pollution First Strike Plan; additional operational plans will be activated depending on the nature and scale of the release.</p>	<p>CIMT: Operations and Logistics Sections for first strike activities.</p> <p>CIMT: Planning Section to help inform the IAP on resources available.</p>	<p>Locations from where resources may be mobilised.</p> <p>How resources will be mobilised.</p> <p>Details of where resources may be mobilised to and what facilities are required once the resources arrive.</p> <p>Details on how to implement resources to undertake a response.</p>	<p>Operational monitoring plan</p> <p>Source Control Emergency Response Planning Guideline</p> <p>Vessel shipboard oil pollution emergency plan (SOPEP)</p> <p>Subsea dispersant injection</p> <p>Surface dispersants</p> <p>Containment and recovery</p> <p>Protection and deflection</p> <p>Shoreline clean-up</p> <p>Oiled wildlife response</p> <p>Scientific monitoring</p>

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Tactical Response Plans	Provides options for response techniques in selected RPAs. Provides site, access and deployment information to support a response at the location.	CIMT: Planning Section to help develop IAPs, and Logistics Section to assist with determining resources required.	Indicative response techniques. Access requirements and/or permissions. Relevant information for undertaking a response at that site. Where applicable, may include equipment deployment locations and site layouts.	For full list of relevant Tactical Plans, refer to ANNEX E: Tactical Response Plans
Support Plans	Support Plans detail Woodside's approach to resourcing and the provision of services during a hydrocarbon spill response.	CIMT: Operations, Logistics and Planning Sections.	Technique for mobilising and managing additional resources outside of Woodside's immediate preparedness arrangements.	Logistics Support Plan Aviation Support Plan Marine Support Plan Accommodation & Catering Plan – Australia Transport Management Plan – Australia Waste Management Plan – Australia Health and Safety Support Plan Hydrocarbon Spill Responder Health Monitoring Guidelines People and Global Capability (Surge Labour Requirements) Support Plan (Land Based) Security Support Plan Stakeholder Engagement Support Plan

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
				Guidance for Hydrocarbon Spill Claims Management Communications Support Plan – Australia

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2 RESPONSE PLANNING PROCESS

This document details Woodside's process for identifying potential response options for the hydrocarbon release scenarios, identified in the EP. Figure 2-1 outlines the interaction between Woodside's response, planning/ preparedness and selection process.

This structure has been used because it shows how the planning and preparedness activities inform a response and provides indicative guidance on what activities would be undertaken, in sequential order, if a real event were to occur. The process also evaluates alternative, additional and/or improved control measures specific to the PAP.

The Ngujima-Yin FPSO Operations First Strike Plan then summarises the outcome of the response planning process and provides initial response guidance and a summary of ongoing response activities, if an incident were to occur.

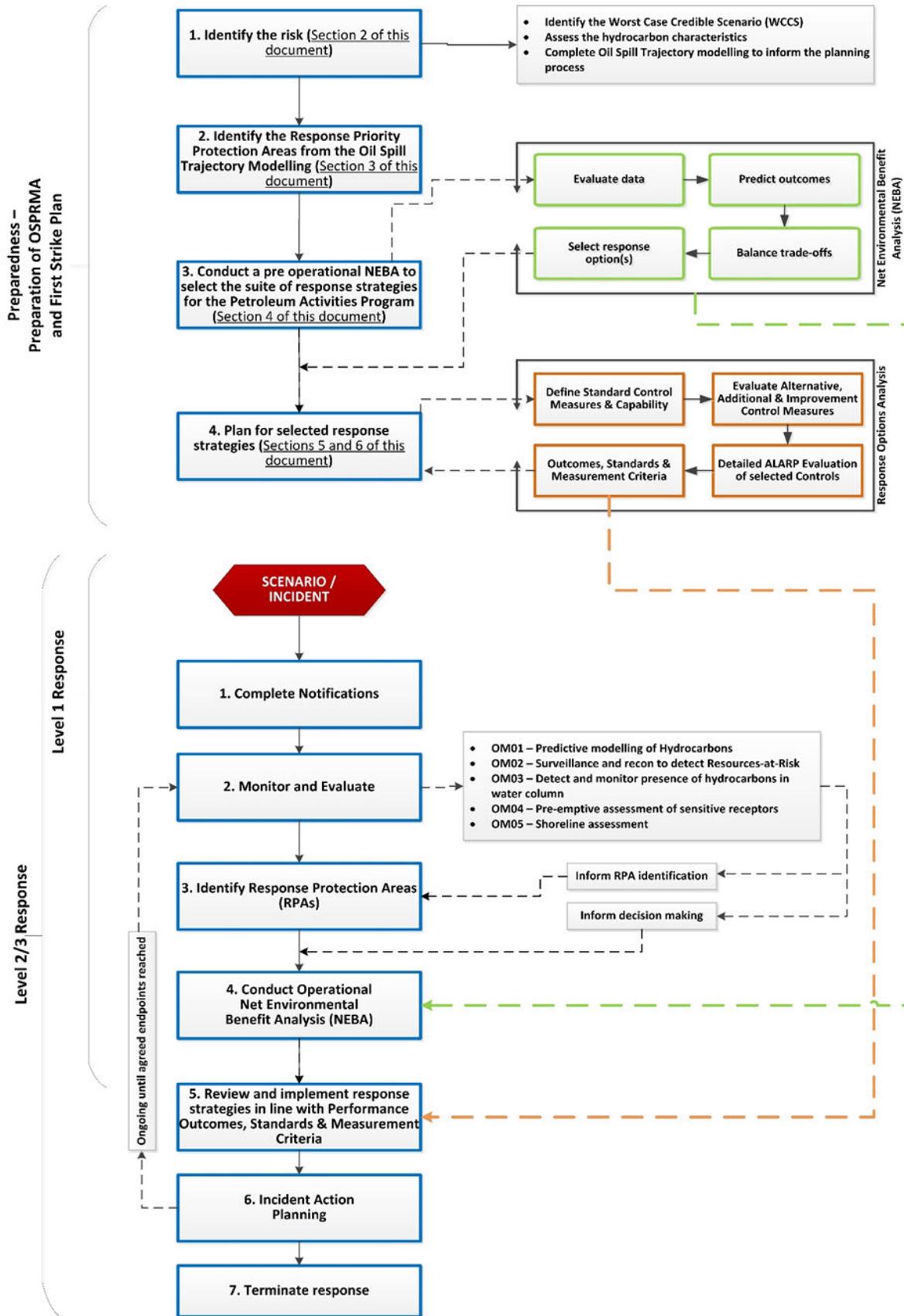


Figure 2-1: Response planning and selection process

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2.1 Response planning process outline

This document is expanded below to provide additional context on the key steps in determining capability, evaluating ALARP and hydrocarbon spill response requirements.

- Section 1. INTRODUCTION
- Section 2. RESPONSE PLANNING PROCESS
 - identification of worst-case credible scenario(s) (WCCS)
 - spill modelling for WCCS.
- Section 3. IDENTIFY RESPONSE PROTECTION AREAS (RPAs)
 - areas predicted to be contacted at concentration >100 g/m².
- Section 4. NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)
 - pre-operational NEBA (during planning/ALARP evaluation): this must be reviewed during the initial response to an incident to ensure its accuracy.
 - selected response techniques prioritised and carried forward for ALARP assessment.
- Section 5. HYDROCARBON SPILL ALARP PROCESS
 - determines the response need based on predicted consequence parameters.
 - details the environmental performance of the selected response options based on need.
 - sets the environmental performance outcomes, environmental performance standards and measurement criteria.
- Section 6. ALARP EVALUATION
 - evaluates alternative, additional, and improved options for each response technique to demonstrate the risk has been reduced to ALARP.
 - provides a detailed ALARP assessment of selected control measure options against:
 - predicted cost associated with implementing the option
 - predicted change to environmental benefit
 - predicted effectiveness / feasibility of the control measure.
- Section 7. ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES
 - evaluation of impacts and risks from implementing selected response options.
- Section 8. ALARP CONCLUSION
- Section 9. ACCEPTABILITY CONCLUSION

2.1.1 Response Planning Assumptions

Figure 2-2 illustrates the initial steps of a response to an oil spill event and, where available, the indicative timing. For the latter stages, the timing will be specific to the selective response option.

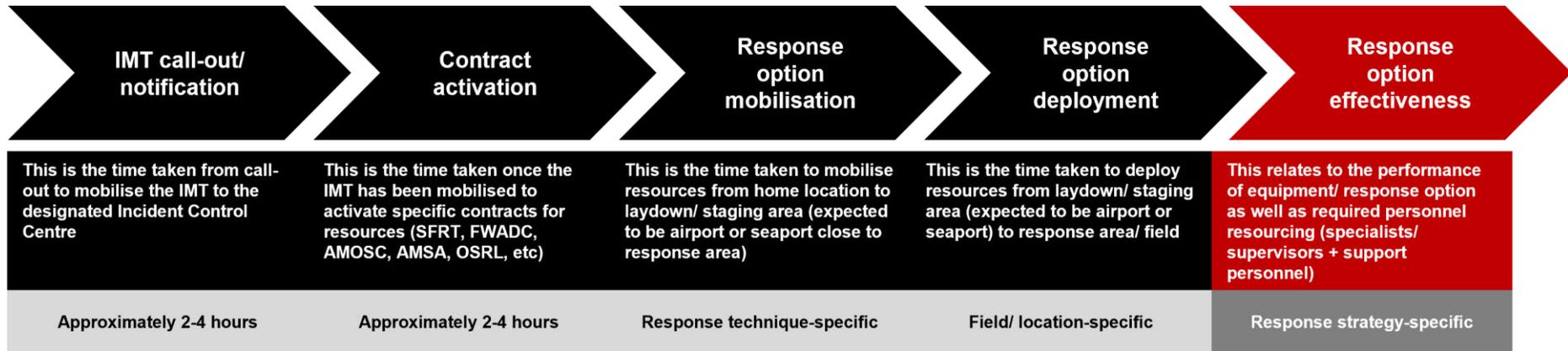


Figure 2-2: Response planning assumption – timing, resourcing and effectiveness

2.2 Environment plan risk assessment (credible spill scenarios)

Potential hydrocarbon release scenarios from the PAP have been identified during the risk assessment process (Section 6.8 of the EP). Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 6.7 of the EP. Two unplanned events or credible spill scenarios for the PAP have been selected as representative across types, sources and incident/response levels, up to and including the WCCS.

Table 2-1 presents the credible scenarios for the PAP. The WCCS for the activity is then used for response planning purposes, as all other scenarios are of a lesser scale and extent. By demonstrating capability to manage the response to the WCCS, Woodside assumes other scenarios that are smaller in nature and scale can also be managed by the same capability. Response performance measures have been defined based on a response to the WCCS.

The subsea release scenario (MEE-01) has been modelled and is considered to determine the WCCS for response planning purposes. The release volumes are the highest, with a higher residual hydrocarbon component, which leads to a larger shoreline accumulation and spatial spread compared to the surface scenario (MEE-05). Due to this, this scenario is selected for planning purposes and is used to inform the offshore and shoreline response.

Table 2-1: Petroleum Activities Program credible spill scenarios

Credible Spill Scenarios	Scenario selected for planning purposes	Scenario description	Maximum credible volume released (liquid m ³) ¹	Incident level	Hydrocarbon type	Residual proportion	Residual volume (m ³)
MEE-01(WCCS)	Yes	An uncontrolled subsea release of Vincent Crude from the Vincent Infill Well	258,549 m ³ over 77 days	3	Vincent Crude	58.5%	151,251 m ³
MEE-02	No	Subsea flowline and riser loss of containment	260 m ³ over 1 hour	2	Norton-1 Crude	49.4%	128.4 m ³
MEE-03	No	Topsides loss of containment	1000 m ³	2	NY Topsides Blend	30.8%	308 m ³
MEE-04	No	Loss of containment during offloading.	1,450 m ³ over 15 minutes	2	NY Topsides Blend	30.8%	446.6 m ³
MEE-05	Yes	A surface release of NY Topsides Blend caused by a vessel collision with the FPSO.	40,828 m ³ over 16 hours	3	NY Topsides Blend	30.8%	12,575 m ³
MEE-06	No	Loss of structural integrity	N/A – covered by other scenarios				
MEE-07	No	Loss of marine vessel separation.	105 m ³	2	MDO	5%	5.25 m ³
MEE-08	No	Loss of control of suspended load.	N/A – covered by other scenarios				

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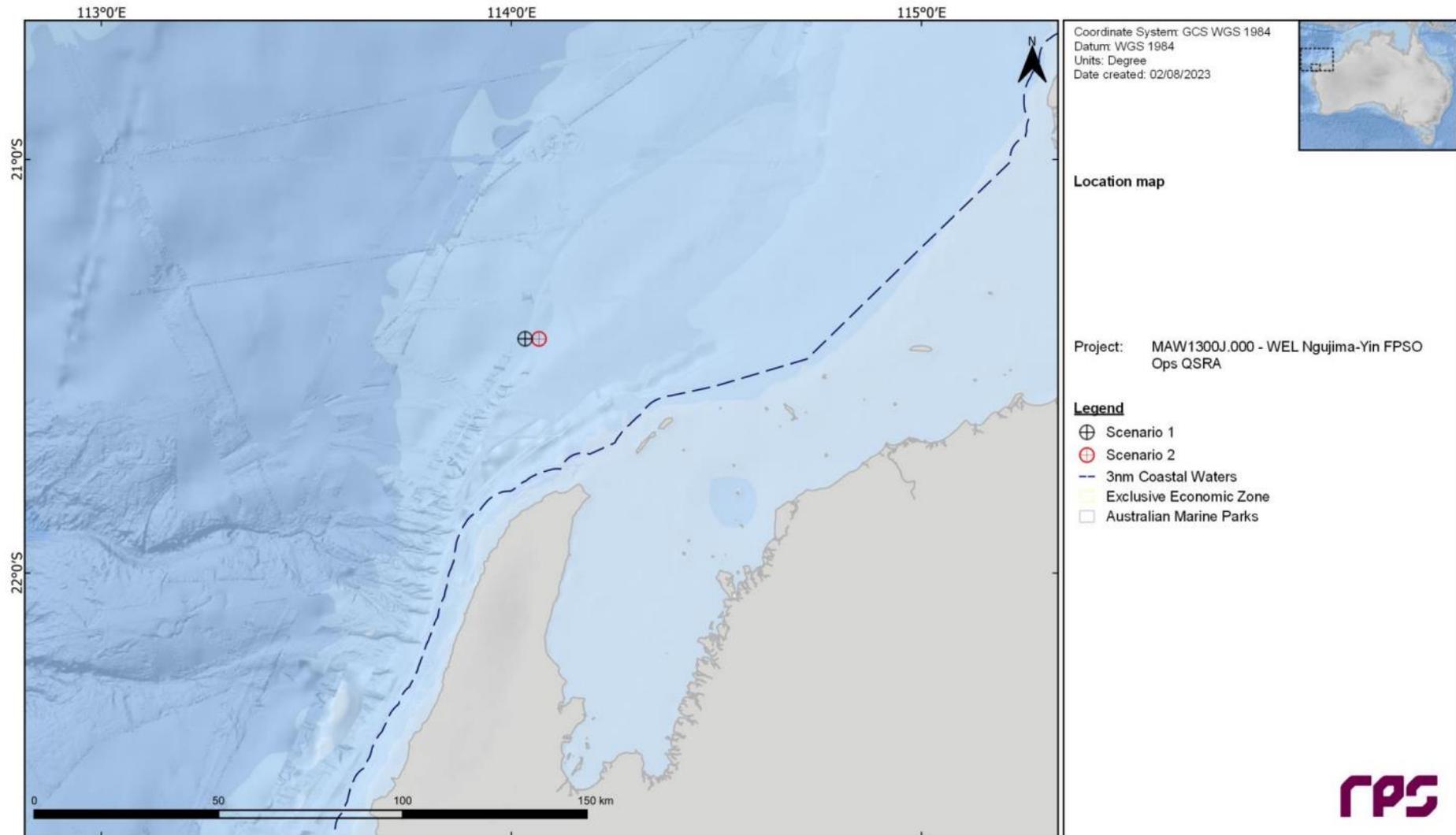


Figure 2-3: Location of the credible subsea spill scenario (MEE-01) (WCCS) (Scenario 1) and the credible surface spill scenario (MEE-05)

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2.2.1 Hydrocarbon characteristics

Hydrocarbon characteristics, including modelled weathering data and ecotoxicity, are included in Section 6.8.1.1 of the EP.

Vincent Crude

Vincent Crude (API 17.3]) contains a high proportion (~58.5% by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. These compounds are expected to persist in the marine environment.

The unweathered mixture has a dynamic viscosity of 132.07 cP at 40 °C. The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 6.3% of the oil mass should evaporate within the first 24 hours (180 < 265 °C); and a further 35.2% should evaporate over several days (265 °C < BP <380°C).

Soluble aromatic hydrocarbons contribute approximately 8.7% by mass of the whole oil, with a large proportion (8.2%) in the C16-C20 range of hydrocarbons. These compounds are predicted evaporate slowly, leaving the potential for dissolution of a proportion of them into the water.

NY Topsides Blend

NY Topsides Blend (API [21.1) contains a relatively high proportion (~30.8% by mass) of hydrocarbon compounds that are not expected to evaporate at atmospheric temperatures. These compounds are expected to persist in the marine environment.

The unweathered mixture has a dynamic viscosity of 96.7 cP at 20 °C. The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 3.3% of the oil mass should evaporate within the first 12 hours (BP < 180 °C); a further 14.8% should evaporate within the first 24 hours (180 °C < BP < 265 °C); and a further 51.1% should evaporate over several days (265 °C < BP < 380 °C).

Soluble aromatic hydrocarbons contribute approximately 15% by mass of the whole oil, with a large proportion (12.3%) in the C16-C20 range of hydrocarbons. These compounds will evaporate slowly, leaving the potential for dissolution of a proportion of them into the water.

2.3 Hydrocarbon spill modelling

Oil spill trajectory modelling (OSTM) tools are used for environmental impact assessment and during response planning to understand spatial scale and timeframes for response operations. Woodside recognises there is a degree of uncertainty related to the use of modelling data and has subsequently utilised conservative approaches to volumes, weathering, spatial areas, timing and response effectiveness to scale capability to need.

The Oil Spill Model and Response System (OILMAP) and Integrated Oil Spill Impact Model System (SIMAP) models are both used for stochastic and deterministic trajectory modelling. They have been developed over three decades of planning, exercises, actual responses, several peer reviews, and validation studies. OILMAP was originally derived from the United States Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Type A model (French et al. 1996), for assessing marine transport, biological impact and economic damage that was also used under the United States Oil Pollution Act 1990 Natural Resource Damage Assessment (NRDA) regulations. Notable spills where the model has been used and validated against actual field observations include, Exxon Valdez (French McCay 2004), North Cape Oil Spill (French McCay 2003), along with an assessment of 20 other spills (French McCay and Rowe, 2004). In addition, test spills designed to verify fate, weathering and movement algorithms have been conducted

regularly and in a range of climate conditions (French and Rines 1997; French et al. 1997; Payne et al. 2007; French McCay et al. 2007).

Further to this, the algorithms have been updated using the latest findings from the Macondo/Deepwater Horizon well blowout in the Gulf of Mexico and validated according to the Deepwater Horizon (DWH) oil spill in support of the NRDA (Spaulding et al. 2015; French McCay et al. 2015, 2016). Finally, the OILMAP and SIMAP models have been used extensively in Australia to prosecute pollution offences, predict discharge locations and likely spill volumes based on weathering and surveillance observations, and has been used as expert witness evidence in Australian court proceedings, aiding the prosecution to determine spill quantum estimates.

2.3.1 Stochastic modelling

Stochastic modelling has been completed for the scenarios presented in Table 2-1. A quantitative, stochastic assessment has been undertaken for credible spill scenarios to help assess the environmental consequences of a hydrocarbon spill.

A total of 100 replicate simulations were completed for the scenarios to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed using samples of metocean data that commenced within each calendar quarter (25 simulations per quarter). Further details relating to the assessments for the scenarios can be found in Section 6 of the EP.

2.3.1.1 Environmental impact thresholds – Environment that May Be Affected (EMBA) and hydrocarbon exposure

The outputs of the stochastic spill modelling are used to assess the potential environmental impact from the credible scenarios. The stochastic modelling results are used to delineate areas of the marine and shoreline environment that could be exposed to hydrocarbon levels exceeding environmental impact threshold concentrations. The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA and is discussed further in Section 6 of the EP. As the weathering of different fates of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean mechanism of transportation, a different EMBA is presented for each fate within the EP.

A conservative approach – adopting accepted accumulation thresholds for impacts on the marine environment – is used to define the EMBA. These hydrocarbon thresholds are presented in Table 2-2 below and described in Section 6 of the EP.

Table 2-2: Summary of thresholds applied to the stochastic hydrocarbon spill modelling to determine the EMBA and environmental impacts

Hydrocarbon	Surface hydrocarbon (g/m ²)	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Accumulated hydrocarbon (g/m ²)
Vincent Crude	10	50	100	100
Topsides Blend	10	50	100	100

2.3.2 Deterministic modelling

Woodside undertakes deterministic modelling where initial stochastic modelling has indicated that floating oil is present at an impact threshold of >50 g/m² and/or where there are shoreline accumulations at an impact threshold of >100 g/m². The deterministic modelling outputs are then used to evaluate risks and impacts and scale the required capability for the offshore (containment and recovery and dispersant) and/or shoreline responses.

Deterministic results are provided in both shapefile and data table format with each row of the data table representing a 1 km² cell. This cell size has been used as it represents the approximate area that a single containment and recovery operation or surface dispersant operation (single sortie or

vessel spraying) can effectively treat in one ten-hour day. Smaller cell sizes have been considered but are not expected to change the response need as the potential distance between cells would not allow multiple cells to be treated per day by response operations. Additionally, a 1 km² cell is expected to allow averaging of threshold concentrations and mass across the spatial extent to represent a conservative approach (patches of oil and windrows) to response planning that simulates operational monitoring feedback in a real event.

A sample of these deterministic results from the NY topsides release are provided below as an indication of the data format and content.

- Column A and B provide the latitude and longitude of the cell
- Column C is the elapsed time since the release occurred
- Column D represents the average thickness across the cell in g/m²
- Column E represents the viscosity of the hydrocarbon in cSt at sea surface temperature
- Column F and G represents the mass of hydrocarbon across the entire cell in kg and tons respectively

Latitude A	Longitude B	Time_hour C	Conc_gm2 D	Visc_cSt E	Mass_kg F	Mass_tons G
-22.023484	113.358683	54	4.10	95,050.32	4,043.84	4
-22.213162	113.368238	54	1.40	43,644.97	1,382.98	1
-22.249291	113.377793	54	13.65	33,440.05	13,455.69	13
-22.240258	113.377793	54	14.23	3,531.78	14,026.66	14
-22.231226	113.377793	54	9.12	3,616.66	8,989.51	9
-22.204129	113.377793	54	1.20	247,407.70	1,181.21	1
-21.978323	113.377793	54	11.51	16,090.92	11,368.50	11
-22.249291	113.387348	54	94.67	15,144.55	93,311.15	93
-22.231226	113.387348	54	60.72	47,659.18	59,861.67	60

Using this data and displaying it visually, Woodside determines approximate surface area and volumes that can be treated using existing capability and considers alternate, improved and additional control measures to reduce risks and impacts to as low as reasonably practical (ALARP).

A key consideration in the evaluation of response capability is the understanding that no single response strategy or even combination of offshore response strategies will treat or remove 100% of the surface hydrocarbons in either surface area or volume. Woodside is committed to a realistic, scalable response capability that is commensurate to the level of risk and able to be practically implemented and sustained within the logistical constraints of remote areas.

Alternative, Additional and Improved control measures have been identified and assessed with those that have been selected or are being considered highlighted in green. Items highlighted in red have been considered and rejected on the basis that the costs are clearly grossly disproportionate cost to environmental benefit or the control measure is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment as outlined in Section 6 below.

Woodside recognises that no single response strategy will treat all available subsea or surface oil and that a combination of response strategies will be required for the identified scenario. Even with the significant resources available to Woodside through existing capability and third-party resources, the primary offshore response strategies of surface dispersant application and containment and recovery are expected to only treat or recover a minor volume (<30%) of the available surface hydrocarbons based on previous response experience.

2.3.3 Response planning thresholds for surface and shoreline hydrocarbon exposure

Thresholds to determine the EMBA are used to predict and assess environmental impacts and inform the Scientific Monitoring Program (SMP), however they do not appropriately represent the thresholds at which an effective response can be implemented. Additional response thresholds are used for response planning and to determine areas where response techniques would be most effective. The deterministic modelling is then used to assess the nature and scale of a response.

In the event of an actual response, existing deterministic modelling would be reviewed for suitability and additional modelling would be conducted using real-time data and field information to inform CIMT decisions.

The deterministic spill modelling outputs are presented at response planning thresholds for surface hydrocarbons for the WCCS. Surface spill concentrations are expressed as grams per square metre (g/m²) (Section 2.2). The thresholds used are derived from oil spill response planning literature and industry guidance and are summarised below.

2.3.3.1 Surface hydrocarbon concentrations

Table 2-3: Surface hydrocarbon thresholds for response planning

Surface hydrocarbon threshold (g/m ²)	Description	Bonn Agreement Oil Appearance Code	Mass per area (m ³ /km ²)
>10	Predicted minimum threshold for commencing operational monitoring ¹	Code 3 – Dull metallic colours	5 to 50
50	Predicted minimum floating oil threshold for containment and recovery and surface dispersant application ²	Code 4 – Discontinuous true oil colour	50 to 200
100	Predicted optimum floating oil threshold for containment and recovery and surface dispersant application	Code 5 – Continuous true oil colour	>200
Shoreline hydrocarbon threshold (g/m ²)	Description	National Plan Guidance on Oil Contaminated Foreshores	Mass per area (m ³ /km ²)
100	Predicted minimum shoreline accumulation threshold for shoreline assessment operations	Stain	>100
250	Predicted minimum threshold for commencing shoreline clean-up operations	Level 3 – Thin Coating	200 to 1000

The surface thickness of oil at which dispersants are typically effective is approximately 100 g/m². However, substantial variations occur in the thickness of the oil within the slick, and most fresh crude oils spread within a few hours, so overall the average thickness is 0.1 mm (or approximately 100

¹ Operational monitoring will be undertaken from the outset of a spill whether or not this threshold has been reached. Monitoring is needed throughout the response to assess the nature of the spill, track its location and inform the need for any additional monitoring and/or response techniques. It also informs when the spill has entered State Waters and control of the incident passes to statutory authorities e.g. Western Australia Department of Transport (WA DoT) or AMSA.

² At 50 g/m², containment and recovery and surface dispersant application operations are not expected to be particularly effective. This threshold represents a conservative approach to planning response capability and containing the spread of surface oil.

g/m²) (International Tanker Owners Pollution Federation [ITOPF] 2011). Additionally, the recommended rate of application for surface dispersant is typically 1-part dispersant to 20 or 25 parts of spilled oil. These figures assume a 0.1 mm slick thickness, averaged over the thickest part of the spill, to calculate a litres/hectare application rate from vessels and aircraft. In practice this can be difficult to achieve as it is not possible to accurately assess the thickness of the floating oil.

Some degree of localised over-dosage and under-dosage is inevitable in dispersant response. An average oil layer thickness of 0.1 mm is often assumed, although the actual thickness can vary over a wide range (from less than 0.0001 mm to more than 1 mm) over short distances (International Petroleum Industry Environment Conservation Association [IPIECA] 2015).

Guidance from the Australian Maritime Safety Authority (AMSA, 2015) indicates spreading of spills of Group II or III products will rapidly decrease slick thickness over the first 24 hours of a spill resulting in the potential requirement of up to a ten (10) fold increase in capability on day 2 to achieve the same level of performance.

Further guidance from the European Maritime Safety Authority (EMSA) states spraying the 'metallic' looking area of an oil slick (Bonn Agreement Oil Appearance Code [BAOAC] 3, approximately 5 – 50 µm) with dispersant from spraying gear designed to treat an oil layer 0.1 mm (100 µm) thick, will inevitably cause dispersant over-treatment by a factor of 2 to 20 times (EMSA 2012).

Therefore, dispersant application should be concentrated on the thickest areas of an oil slick and Woodside intends on applying surface dispersants to only BAOAC 4 and 5. Spraying areas of oil designated as BAOAC Code 4 (Discontinuous true oil colour) with dispersant will, on average, deliver approximately the recommended treatment rate of dispersant.

Spraying areas of oil designated as BAOAC Code 5 with dispersant (Continuous true oil colour and more than 0.2 mm thick) will, on average, deliver approximately half the recommended treatment rate of dispersant. Repeated application of these areas of thicker oil, or increased dosage ratios, will be required to achieve the recommended treatment rate of dispersant (EMSA 2012).

Guidance from NOAA in the United States is found in the document: *Characteristics of Response Strategies: A Guide for Spill Response Planning in Marine Environments 2013* (NOAA 2013). This guide outlines advice for response planning across all common techniques, including surface dispersant spraying and containment and recovery. It states oil thickness can vary by orders of magnitude within distinct areas of a slick, thus the actual slick thickness and oil distribution of target areas are crucial for determining response method feasibility. Further to this, ITOPF also states in terms of oil spill response, sheen can be disregarded as it represents a negligible quantity of oil, cannot be recovered or otherwise dealt with to a significant degree by existing response techniques, and is likely to dissipate readily and naturally (ITOPF, 2014).

Figure 2-4 below from AMSA's Identification of Oil on Water – Aerial Observation and Identification Guide (AMSA, 2014) shows expected percent coverage of surface hydrocarbons as a proportion of total surface area. Wind-rows, heavy oil patches and tar balls, for example, must be considered, as they influence oil encounter rates, chemical dosages and ignition potential. Each method has different thickness thresholds for effective response.

From this information and other relevant sources (Allen and Dale, 1996, EMSA, 2012, Spence, 2018) the surface threshold of 50 g/m² was chosen as an average/equilibrium thickness for offshore response operations (50 g/m² is an average of 50% coverage of 0.1 mm Bonn Agreement Code 4 – discontinuous true oil colour, or 25% coverage of 0.2 mm Bonn Agreement Code 5 – continuous true oil colour which would represent small patches of thick oil or wind-rows).

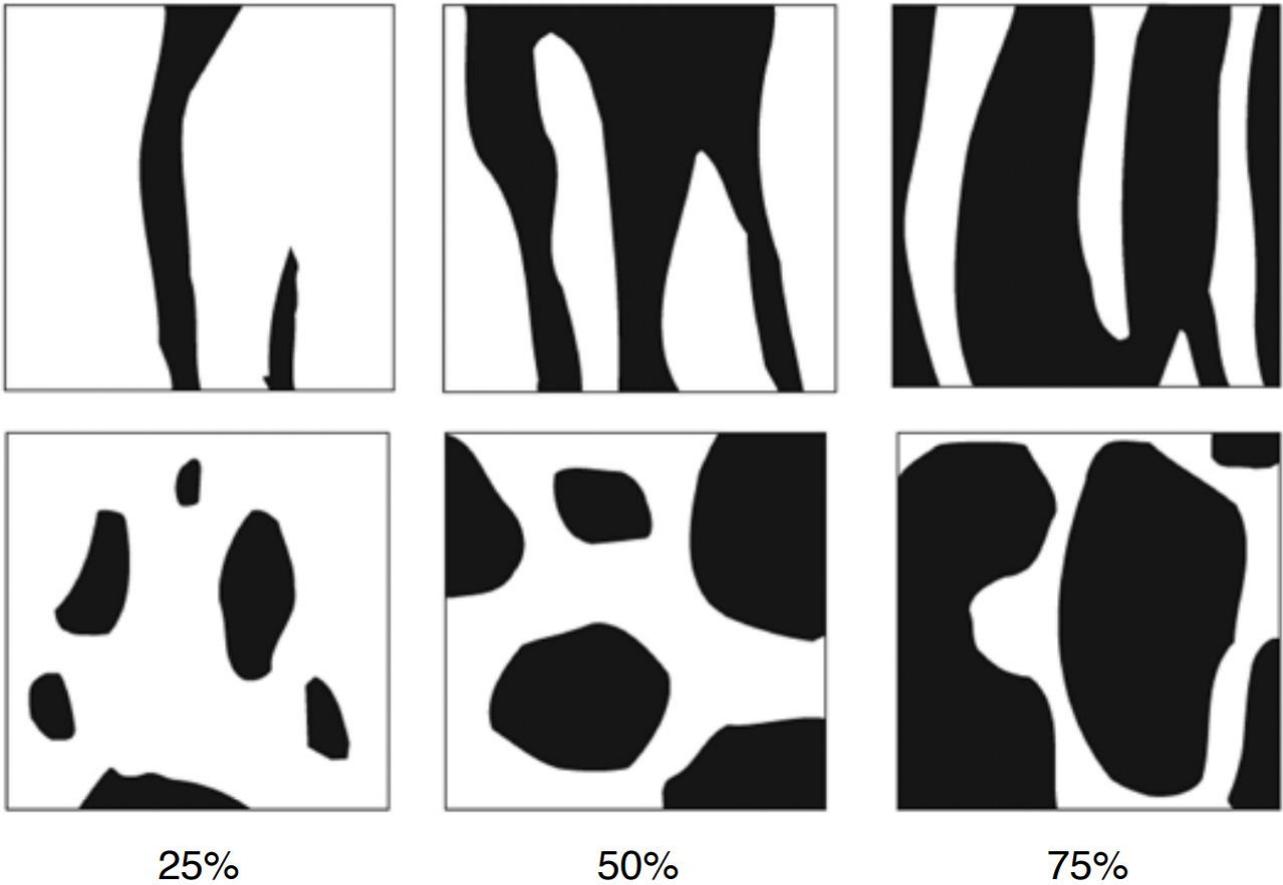


Figure 2-4: Proportion of total area coverage (AMSA, 2014)

Figure 2-5 illustrates the general relationships between on-water response techniques and slick thickness. Wind-rows, heavy oil patches and tar balls, for example, must be considered, as they influence oil encounter rates, chemical dosages and ignition potential. Each method has different thickness thresholds for effective response.

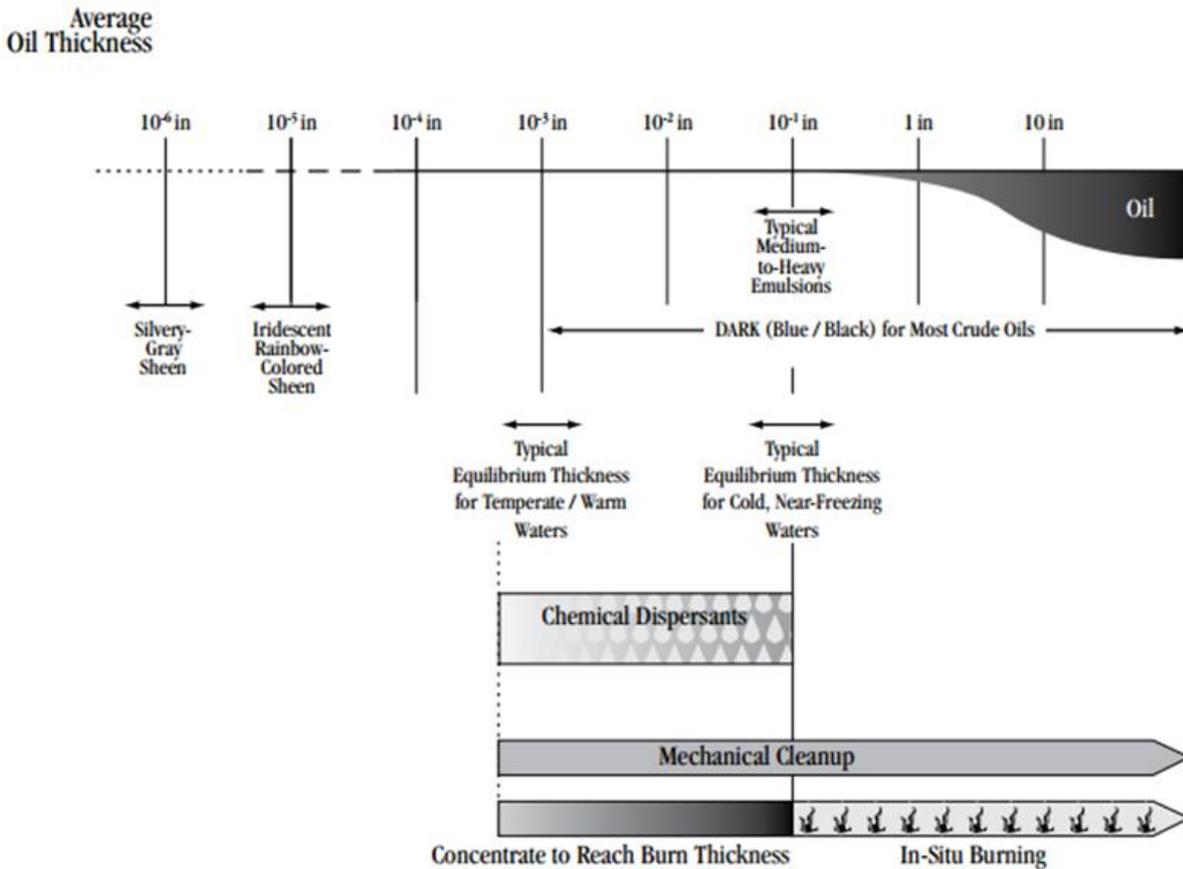


Figure 2-5: Oil thickness versus potential response options (from Allen & Dale 1996)

The influence of wind and waves on the feasibility of response operations is also considered below:

- Mechanical clean-up: effectiveness drops significantly because of entrainment and/or splash-over as short period waves develop beyond 2–3 ft (0.6–0.9m) in height. Waves and wind can also be limiting factors for the safe operation of vessels and aircraft.
- Dispersants: effective dispersion requires a threshold amount of surface mixing energy (typically a few knots of wind and a light chop) to be effective. At higher wind and sea conditions, dispersant evaporation and wind-drift will limit chemical dispersion application effectiveness; and, there is a point (~25-kt winds, 10-ft waves) where natural dispersion forces become greater, particularly for light oils. Because of droplet size versus slick thickness constraints and application dose-rate limitations, dispersants work best on slick thicknesses of a few thousandths (approximately 50 g/m²) to hundredths of an inch (approximately 250 g/m²). Improved dispersants, higher dose rates, and multiple-pass techniques may extend the thickness limitation to 0.1 inch (2.5 mm) or more.

2.3.3.2 Surface hydrocarbon viscosity

Table 2-4: Surface hydrocarbon viscosity thresholds

Surface viscosity threshold (cSt)	Description	European Maritime Safety Authority (EMSA)	Viscosity at sea temperature (cSt)
5,000*	Predicted optimum viscosity for surface dispersant operations	Generally possible to disperse	500-5,000
15,000*	Predicted maximum viscosity for effective surface dispersant operations	Sometimes possible to disperse	5,000-15,000

*Measured at sea surface temperature

Further to the required thickness for surface dispersant application and containment and recovery to be deployed effectively as outlined above, changes to viscosity will also limit the treatment of offshore response techniques. As outlined in the EMSA Manual on the Applicability of Oil Spill Dispersants (EMSA, 2012), guidance around changes to viscosity and likely effectiveness of surface dispersant application is provided.

This includes the following statements: “It has been known for many years that it is more difficult to disperse a high viscosity oil than a low or medium viscosity oil. Laboratory testing had shown that the effectiveness of dispersants is related to oil viscosity, being highest for modern ‘Concentrate, UK Type 2/3’ dispersants at an oil viscosity of about 1,000 or 2,000 mPa (1,000 – 2,000 cSt) and then declining to a low level with an oil viscosity of 15,000 mPa (15,000 cSt). It was considered that some generally applicable viscosity limit, such as 2,000 or 5,000 mPa (2,000 – 5,000 cSt), could be applied to all oils.”

However, modern oil spill dispersants are generally effective up to an oil viscosity of 5,000 mPa (5,000 cSt) or more, and their performance gradually decreases with increasing viscosity; oils with a viscosity of more than 15,000 cSt are in most cases, no longer dispersible. Guidance from CEDRE (EMSA, 2012) also indicates products with a range of 500 – 5,000 cSt at sea temperature are generally possible to disperse, while 5,000 – 15,000 cSt at sea temperature above pour point are sometimes possible to disperse, with products beyond 15,000 cSt at sea temperature below pour point are generally impossible to disperse.

To support decision making and response planning, a threshold of 15,000 cSt at sea temperature was chosen as a conservative estimate of maximum viscosity for surface dispersant spraying operations.

Modelling predicts that neither spill scenario for this PAP will reach the 15,000 cSt threshold for the duration of the spills.

2.3.4 Spill modelling results

Details of the scenario and modelling inputs are included along with deterministic results in Table 2-5. The selected deterministic runs used to represent the WCCS are:

- Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a threshold of 10 g/m²).
- Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a threshold of 100 g/m²).
- Maximum cumulative hydrocarbon volume accumulated at any individual shoreline receptor (at a threshold of 100 g/m²).
- Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors (at a threshold of 100 g/m²).
- Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100 ppb).

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Table 2-5: Worst case credible scenario modelling results

Scenario description	Results																									
	MEE-01	MEE-05																								
WCCS – total volume released Refer to Section 2.1.1 for detailed hydrocarbon characteristics	Loss of well containment (WCCS) Hydrocarbon release caused by uncontrolled subsea release from the Vincent Infill Well. Subsurface release 258,549 m ³ over 77 days	FPSO Cargo Tank LOC Hydrocarbon release caused by vessel collision with the FPSO. Surface release of 40,828 m ³ over 16 hours																								
WCCS – residual volume remaining post-weathering	58.5% residue or 151,251 m ³ 1,964 m ³ per day	30.8% residue or 12,275 m ³																								
Location	21° 26' 01.66" S, 114° 01' 59.41" E	20° 03' 1.44" S, 115° 31' 35.04" E																								
Deterministic modelling results																										
Surface area of hydrocarbons (>50 g/m²)	<table border="1"> <tr><td>1 km² on day 1</td><td>41 km² on day 13</td></tr> <tr><td>11 km² on day 2</td><td>67 km² on day 14</td></tr> <tr><td>20 km² on day 3</td><td>57 km² on day 15</td></tr> <tr><td>24 km² on day 4</td><td>54 km² on day 16</td></tr> <tr><td>24 km² on day 5</td><td>74 km² on day 17</td></tr> <tr><td>34 km² on day 6</td><td>38 km² on day 18</td></tr> <tr><td>50 km² on day 7</td><td>5 km² on day 19</td></tr> <tr><td>70 km² on day 8</td><td>1 km² on day 21</td></tr> <tr><td>11 km² on day 9</td><td>21 km² on day 24</td></tr> <tr><td>7 km² on day 10</td><td>35 km² on day 25</td></tr> <tr><td>2 km² on day 11</td><td>1 km² on day 36</td></tr> <tr><td>11 km² on day 12</td><td></td></tr> </table> <p>Results based on MEE-01 deterministic modelling: Q2, Run 10.</p>	1 km ² on day 1	41 km ² on day 13	11 km ² on day 2	67 km ² on day 14	20 km ² on day 3	57 km ² on day 15	24 km ² on day 4	54 km ² on day 16	24 km ² on day 5	74 km ² on day 17	34 km ² on day 6	38 km ² on day 18	50 km ² on day 7	5 km ² on day 19	70 km ² on day 8	1 km ² on day 21	11 km ² on day 9	21 km ² on day 24	7 km ² on day 10	35 km ² on day 25	2 km ² on day 11	1 km ² on day 36	11 km ² on day 12		<p>10 km² on day 1</p> <p>36 km² on day 2</p> <p><i>No floating hydrocarbons at response thresholds beyond day 2.</i></p> <p>Results based on MEE-05 deterministic modelling: Q2, Run 11.</p>
1 km ² on day 1	41 km ² on day 13																									
11 km ² on day 2	67 km ² on day 14																									
20 km ² on day 3	57 km ² on day 15																									
24 km ² on day 4	54 km ² on day 16																									
24 km ² on day 5	74 km ² on day 17																									
34 km ² on day 6	38 km ² on day 18																									
50 km ² on day 7	5 km ² on day 19																									
70 km ² on day 8	1 km ² on day 21																									
11 km ² on day 9	21 km ² on day 24																									
7 km ² on day 10	35 km ² on day 25																									
2 km ² on day 11	1 km ² on day 36																									
11 km ² on day 12																										
Surface area of hydrocarbons (>50 g/m² and <15,000 cSt)	N/A – modelling does not predict that surface hydrocarbons will reach a viscosity of 15,000 cSt	N/A – modelling does not predict that surface hydrocarbons will reach a viscosity of 15,000 cSt																								
Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m²)	1.3 days to Ningaloo Coast WH (Q2, Run 10)	1.4 days to Ningaloo Coast WH (Q2, Run 11)																								
Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a concentration of 100 g/m²)	3.5 days to Muiron Islands/ Muiron Islands MMA. (Q4, Run 4)	2.5 days to Exmouth, Ningaloo MP (State), and Ningaloo Coast WH. (Q2, Run 11)																								
Maximum cumulative hydrocarbon volume accumulated at any individual shoreline receptor (at a concentration of 100 g/m²).	13,442 m ³ at Ningaloo MP (State) and Ningaloo Coast WH (Q4, Run 23)	3,036 m ³ at Ningaloo MP (State) and Ningaloo Coast WH (Q2, Run 11)																								
Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors contacted by accumulated hydrocarbons (at a concentration of 100 g/m²)	21,339m ³ at Exmouth, Ningaloo MP (State) and Ningaloo Coast WH (Q4, Run 23)	3,069 m ³ at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH (Q2, Run 11)																								
Minimum time to dissolved/entrained hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 50/100 ppb)	1.7 days to Ningaloo Coast WH (entrained at a threshold of 100 ppb) (Q2, Run 10)	1.3 days to Ningaloo Coast WH (dissolved at a threshold of 100 ppb) (Q2, Run 19)																								
The full list of response protection areas (RPAs) predicted from modelling is available in Table 3-1.																										

Based on the results shown in Table 2-5, the selected deterministic runs used for response planning are:

MEE-01

- Q4, Run 23 – maximum cumulative hydrocarbon volume accumulated across all shoreline receptors (at a threshold of 100 g/m²).
- Q4, Run 4 – minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a threshold of 100 g/m²).
- Q2, Run 10 – greatest area of floating oil (at a threshold of 50 g/m²).

MEE-05

- Q2, Run 11 – maximum cumulative hydrocarbon volume accumulated across all shoreline receptors (at a threshold of 100 g/m²)
- Q2, Run 11 – minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a threshold of 100 g/m²).
- Q2, Run 11 – greatest area of floating oil (at a threshold of 50 g/m²).

The maps below display the predicted surface concentration of oil at 0-50 g/m² (BAOAC Code 1-3 sheen - light grey), 50–200 g/m² (BAOAC Code 4 – discontinuous true oil colour - brown) and 200 g/m² and above (BAOAC Code 5 – continuous true oil colour - black) over the initial 5 days of the two scenarios. These have been selected for offshore response planning purposes and illustrate where initial response efforts would be concentrated.

As shown in the figures below and from analysis of the deterministic results, the following is predicted:

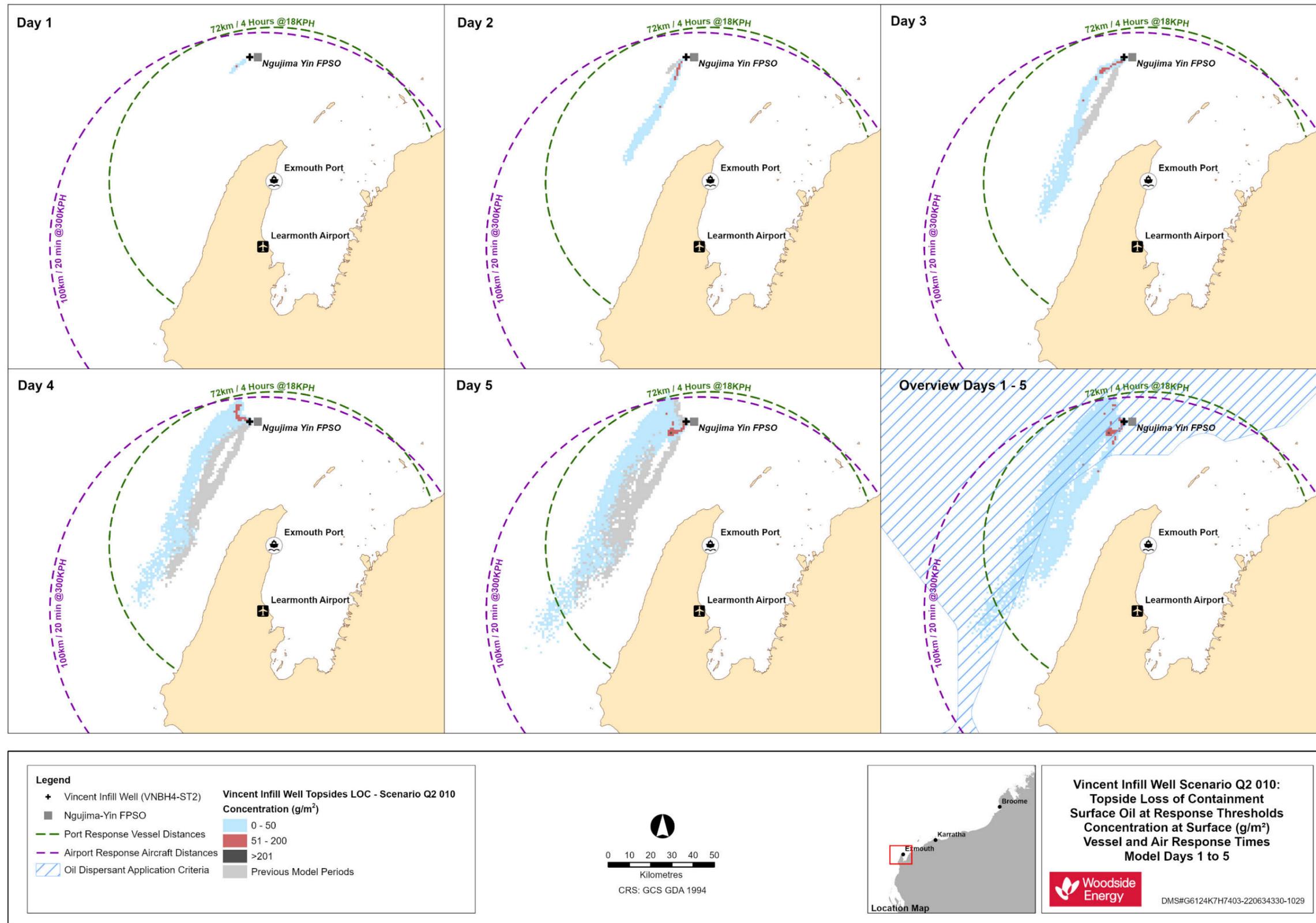


Figure 2-6: Ngujima-Yin FPSO Operations Vincent Well LOWC (MEE-01) – Day 1-5 – Surface oil concentrations

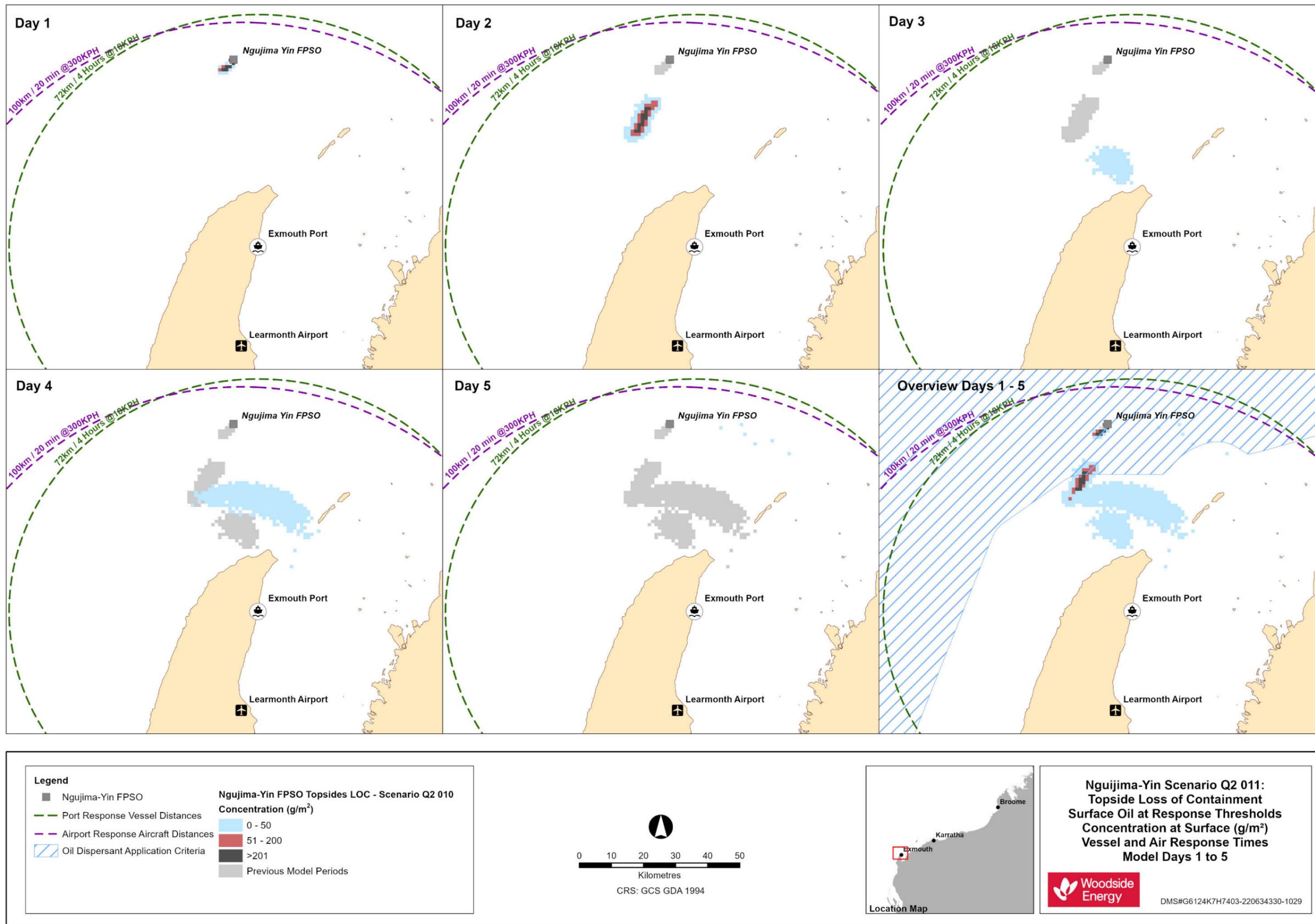


Figure 2-7: Ngujima-Yin FPSO Operations topsides cargo LOC (MEE-05) – Day 1-5 – Surface oil concentration

Ngujima-Yin FPSO Operations LOWC (MEE-01)

- The subsea release results in surface concentrations for surface dispersant, containment and recovery and shoreline clean-up and operations.
- Beyond day 5, surface oil continues presenting daily in similar locations, concentrations and viscosity.
- Weathering predictions for the oil indicate a high residual portion of hydrocarbons (58.5%) will remain after weathering.
- Response operations cannot be implemented if the safety of response personnel cannot be guaranteed. Safety circumstances that limit the execution of this control measure include volatile concentrations of hydrocarbons in the atmosphere, high winds (>20 knots), waves and/or sea states (>1.5m waves) and high ambient temperatures.

Ngujima-Yin FPSO Operations topside cargo LOC (MEE-05)

- The surface release results in sufficient concentrations for effective surface dispersant, containment and recovery and shoreline clean-up operations.
- Beyond day 5, floating hydrocarbons are predicted to move beyond the pre-defined Zone of Application for surface dispersants including movement into WA State waters and onto shorelines.
- Weathering predictions for the oil indicate a high residual portion of hydrocarbons (30.8%) will remain after weathering.
- Response operations cannot be implemented if the safety of response personnel cannot be guaranteed. Safety circumstances that limit the execution of this control measure include volatile concentrations of hydrocarbons in the atmosphere, high winds (>20 knots), waves and/or sea states (>1.5m waves) and high ambient temperatures.

3 IDENTIFY RESPONSE PROTECTION AREAS (RPAs)

In a response, operational monitoring programs – including trajectory modelling and vessel/aerial observations – would be used to predict RPAs that may be impacted. For the purposes of planning and appropriately scaling a response, modelling has been used to identify RPAs as outlined below in Figure 3-1.

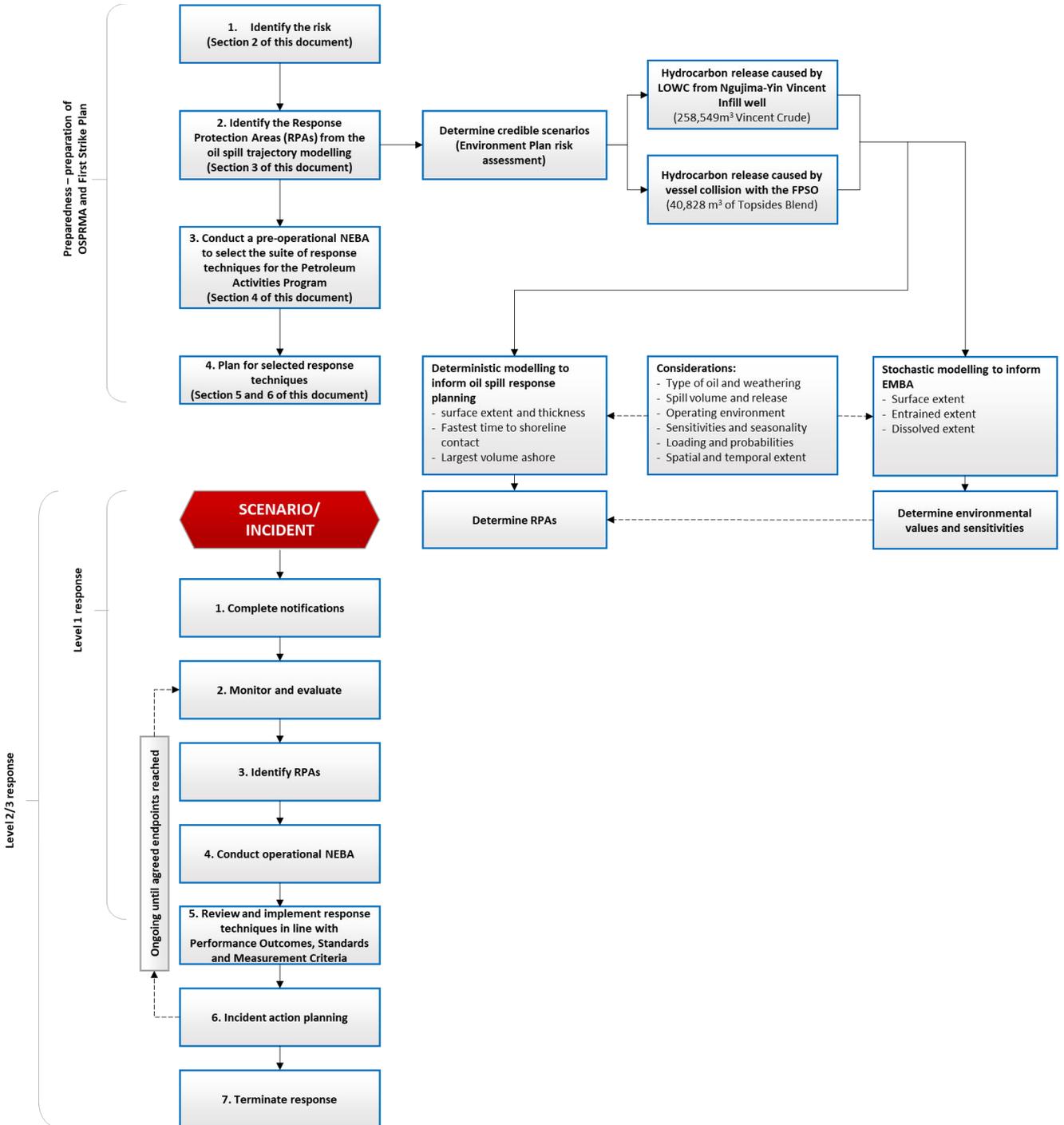


Figure 3-1: Identify Response Protection Areas (RPAs) flowchart

3.1 Identified sensitive receptor locations

Section 6.8 of the EP includes the list of sensitive receptor locations that have been identified by stochastic modelling as meeting the requirements outlined below:

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- receptors with the potential to incur surface, entrained or shoreline accumulation contact above environmental impact thresholds
- receptors within the EMBA which meet the following:
 - a number of priority protection criteria/categories
 - International Union of Conservation of Nature IUCN marine protected area categories
 - high conservation value habitat and species
 - important socio-economic/heritage value.

3.2 Identify Response Protection Areas (RPAs)

RPAs have been selected on the basis of their environmental ecological, social, economic, cultural and heritage values and sensitivities and the ability to conduct a response based on the minimum response thresholds (Section 6.8.1.2 of the EP). It is important to note that the figures outlined in Table 3-1 are the combined results of the individual worst-case runs and do not indicate a single worst case credible scenario (where the timings and volumes are all expected from one release).

From the identified sensitive receptors described in Section 6.8 of the EP, only those which a shoreline response could feasibly be conducted (accumulation >100 g/m² for shoreline assessment and/or contact with surface slicks >10 g/m² for operational monitoring) have been selected for response planning purposes. While not discounting other sensitivities, these RPAs have been used as the basis for demonstrating the capability to respond to the nature and scale of a spill from the WCCS and prioritising response techniques.

Table 3-1 outlines locations which were identified from the modelling runs for the WCCS but does not constitute the full list of Priority Protection Areas (PPAs) potentially contacted from stochastic modelling (as per EMBA definition) (see Section 6.8 of the EP).

Additional sensitive receptors are presented in the existing environment description (Section 4 of the EP) and impact assessment section (Section 6.8 of the EP) for each respective spill scenario. The pre-operational NEBA (Section 4) considers the results from the stochastic modelling to ensure all feasible response techniques are considered in the planning phase, therefore additional receptors are also included in the pre-operational NEBA.

The RPAs identified in Table 3-1 are used to plan for the nature and scale of a shoreline response. The conservation status and IUCN protection categories for these receptors is detailed in Section 4 of the Ngujima-Yin FPSO Operations EP.

Table 3-1: Response Protection Areas (RPAs) from deterministic modelling

Response protection area	MEE-01		MEE-05	
	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽³⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁴⁾	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽⁵⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁶⁾
Ashmore Reef MP*	111 days (7 m ³)	7 m ³ (111 days)	No contact	No contact
Barrow/ Middle/ Boodie Islands/ reserves/ reefs	45 days (1811 m ³)	1811 m ³ (45 days)	No contact	No contact
Cape Range	No contact	No contact	11 days (2319 m ³)	2319 m ³ (11 days)
Dampier Archipelago Islands/ reserves/ reefs	74 days (2076 m ³)	2076 m ³ (74 days)	No contact	No contact
Derby – West Kimberley	96 days (54 m ³)	363 m ³ (98 days)	No contact	No contact
East Pilbara – shoreline	90 days (112 m ³)	112 m ³ (90 days)	No contact	No contact
East Pilbara Islands/ reserves/ reefs	91 days (70 m ³)	70 m ³ (91 days)	No contact	No contact
Eighty Mile Beach – Broome/ Islands/ Reserves/ Reefs	90 m ³ (89 days)	2239 m ³ (89 days)	No contact	No contact
Exmouth Gulf/ Islands/ reserves/ reefs	74 days (169 m ³)	169 m ³ (74 days)	No contact	No contact

³ This volume and time represent the first time to contact on defined shoreline polygon and the maximum volume ashore for that 24 hour period.

⁴ This volume and time represent the maximum volume ashore on defined shoreline polygon for any 24 hour time period.

⁵ This volume and time represent the first time to contact on defined shoreline polygon and the maximum volume ashore for that 24 hour period.

⁶ This volume and time represent the maximum volume ashore on defined shoreline polygon for any 24 hour time period.

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Response protection area	MEE-01		MEE-05	
	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽³⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁴⁾	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽⁵⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁶⁾
Kimberley Islands/ Reserves/ Reefs/ IPAs	64 days (413 m ³)	2710 m ³ (85 days)	No contact	No contact
Lalang-garram Marine Park (North, Camden Sound and Horizontal Falls)	105 days (420 m ³)	420 m ³ (105 days)	No contact	No contact
Lowendal, Hermite, Montebello Islands/ reserves/ reefs	48 days (1018 m ³)	1018 m ³ (48 days)	No contact	No contact
Middle Pilbara Islands/ reserves/ reefs	76 days (1160 m ³)	1160 m ³ (76 days)	No contact	No contact
Ningaloo (Exmouth, Coast, Australian and State MP)	31 days (13,442 m ³)	13,442 m ³ (31 days)	3 days (3036 m ³)	3036 m ³ (3 days)
Ningaloo/ Muiron Islands/ reserves/ reefs	4 days (959 m ³)	1615 m ³ (43 days)	5 days (38 m ³)	38 m ³ (5 days)
North Pilbara Islands/ reserves/ reefs	76 days (2129 m ³)	2129 m ³ (76 days)	No contact	No contact
Northern Pilbara – Shoreline	76 days (1241 m ³)	1242 m ³ (76 days)	No contact	No contact
Shark Bay – Coast/ Islands/ Reefs/ Reserves	93 days (15 m ³)	15 m ³ (93 days)	No contact	No contact
South Pilbara Islands/ reserves/ reefs	4 days (42 m ³)	3072 m ³ (44 days)	No contact	No contact

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Response protection area	MEE-01		MEE-05	
	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽³⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁴⁾	Minimum time to shoreline contact (above 100 g/m ²) in days ⁽⁵⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁶⁾
Southern Pilbara – Shoreline	75 days (1156 m ³)	1156 m ³ (75 days)	<i>No contact</i>	<i>No contact</i>
Wyndham – East Kimberley	99 days (1027 m ³)	1027 m ³ (99 days)	<i>No contact</i>	<i>No contact</i>

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4 NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)

A Net Environmental Benefit Analysis (NEBA) is a structured process to consider which response techniques are likely to provide the greatest net environmental benefit.

The NEBA process typically involves four key steps outlined in Figure 4-1: evaluate data, predict outcomes, balance trade-offs, and select response options. These steps are followed in the planning/preparedness process and would also be followed in a response.

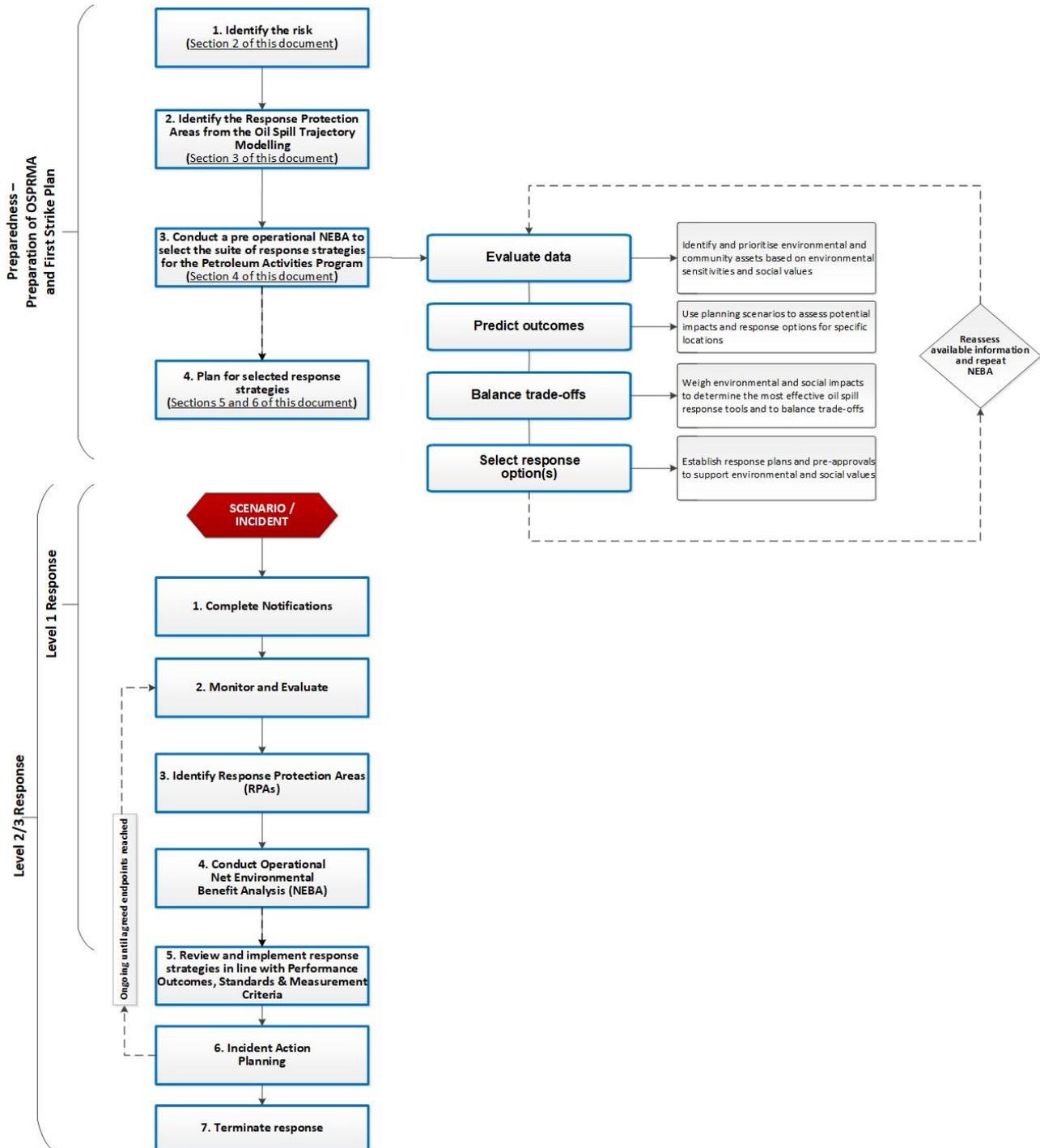


Figure 4-1: Net Environmental Benefit Analysis (NEBA) flowchart

4.1 Pre-operational / Strategic NEBA

The pre-operational NEBA identifies positive and negative impacts to sensitive receptors from implementing the response techniques. Feasibility is considered by assessing the receptors potentially impacted above response thresholds (Section 2.3.3) and the surface concentrations (Section 2.3.3.1) from the deterministic modelling.

Completing a pre-operational NEBA is a key response planning control that reduces the environmental risks and impacts of implementing the selected response techniques. Comprehensive details of the pre-operational NEBA for this PAP are contained in **ANNEX A: Net Environmental Benefit Analysis detailed outcomes**.

4.2 Stage 1: Evaluate data

Woodside identifies and prioritises environmental and community assets based on environmental sensitivities and social values, informed through the use of trajectory modelling. Interpretation of stochastic oil spill modelling determines the EMBA for the release, which defines the spatial area that may be potentially impacted by the PAP activities.

4.2.1 Define the scenario(s)

Woodside uses scenarios identified from the risk assessment in the EP to assess potential impacts and response options for specific locations. The WCCS is then selected for deterministic modelling and is used for this pre-operational NEBA. Outlier locations with potential environmental impacts, selected from the stochastic modelling may also be included for assessment. Response thresholds and deterministic modelling are then used to assess the feasibility/effectiveness and scale of the response. Modelling results are available in **Table 2-5** and **Table 3-1**.

4.3 Stage 2: Predict Outcomes

Woodside uses planning scenarios to assess potential impacts and response options for specific locations. Locations with potential environmental impacts, selected from the stochastic modelling are included for assessment. Response thresholds and deterministic modelling are then used to assess the feasibility/ effectiveness of a response.

4.4 Stage 3: Balance trade-offs

Woodside considers environmental impacts and response effectiveness/ feasibility to determine the most effective oil spill response tools and balance trade-offs, using an automated NEBA tool. The tool considers potential benefits and impacts associated with a response at sensitive receptors and then considers the effectiveness/ feasibility of the response to select the response techniques carried forward to the ALARP assessment. The NEBA can be found in **ANNEX A: Net Environmental Benefit Analysis detailed outcomes**.

4.5 Stage 4: Select Best Response Options

To select the response technique, all the other stages in the NEBA process are considered and used to establish response plans and any pre-approvals to support protection of identified environmental and social values.

The response techniques implemented may vary according to a particular spill. The hydrocarbon type released and the sensitivities of the receptors (both ecological and socio-economic) may influence the response. The pre-operational NEBA broadly evaluates each response technique and supports decisions on whether they are feasible and of net environmental benefit. Response techniques that are not feasible or beneficial are rejected at this stage and not progressed to planning.

Further risks and impacts from implementing these selected response options are outlined in Section 7.

4.5.1 Determining potential response options

The available response techniques based on current technology can be summarised under the following headings:

- Operational monitoring
- Source control
 - remotely operated vehicle (ROV) intervention
 - debris clearance and/or removal
 - capping stack
 - containment dome
 - relief well drilling
- Source control via vessel SOPEP
- Subsea dispersant injection
- Surface dispersant application:
 - aerial dispersant application
 - vessel dispersant application
- Mechanical dispersion
- In-situ burning
- Containment and recovery
- Shoreline protection and deflection:
 - protection
 - deflection
- Shoreline clean-up:
 - Phase 1 – mechanical clean-up
 - Phase 2 – manual clean-up
 - Phase 3 – final polishing
- In-situ burning
- Oiled wildlife response (including hazing)
- Waste management
- Post spill/ scientific monitoring

Table 4-1 and Table 4-2 include scenario-specific assessments of feasible response options and justification for the exclusion of inappropriate options. These options are evaluated against the scenario parameters including oil type, volume, characteristics, prevailing weather conditions, logistical support, and resource availability to determine deployment feasibility.

A shortlist of the feasible response options is then carried forward for the ALARP assessment. This assessment will typically result in a range of available options, that are deployed at different areas (at-source, offshore, nearshore and onshore) and different times during the response. The NEBA process assists in prioritising which options to use where and when, and timings throughout the response.

Table 4-1: Response technique evaluation – loss of well containment

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Hydrocarbon: Vincent Crude				
Operational Monitoring	<p>Will be effective in tracking the location of the spill, informing when it has entered State Waters, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include:</p> <ul style="list-style-type: none"> OM01 Predictive modelling of hydrocarbons – used throughout spill. 'Ground-truthed' using the outputs of all other monitoring techniques. OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill. OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water – from outset of spill. OM04 Pre-emptive assessment of sensitive receptors at risk – triggered once OM01, OM02 and OM03 inform likely RPAs at risk. OM05 Shoreline assessment – once OM02, OM03 and OM04 inform which RPAs have been impacted. 	<p>Monitoring of a Vincent Crude spill is a feasible response technique and an essential element of all spill response incidents. Outputs will be used to guide decision making on the use of other monitoring/response techniques and providing required information to regulatory agencies including AMSA and Western Australia Department of Transport (WA DoT).</p>	Yes	<p>Monitoring the spill will be necessary to:</p> <ul style="list-style-type: none"> validate trajectory and weathering models determine the behaviour of the oil in water determine the location and state of the slick provide forecasts of spill trajectory determine appropriate response techniques determine effectiveness of response techniques confirm impact pathways to receptors provide regulatory agencies with required information.
Source control via well intervention using ROV and SFRT	<p>Controlling a loss of well containment at source via well intervention would be the most effective way to limit the quantity of hydrocarbon entering the marine environment.</p>	<p>In the event of the worst-case scenario with a loss of well containment during drilling operations, ROV operations can be used to locally conduct well intervention.</p>	Yes	<p>The use of source control intervention via ROV may be feasible (depending on local concentration of atmospheric volatiles) and would reduce quantity of hydrocarbons entering the marine environment.</p>
Source control via debris clearance and capping stack	<p>Controlling a loss of well containment at source via capping stack would be an effective way to limit the quantity of hydrocarbon entering the marine environment.</p>	<p>Capping the Vincent well is considered feasible based on worst-case discharge rates.</p> <p>Though all capping stack deployment technologies are unproven, in the event of a loss of well containment, the use of a proven subsea deployment method such as a heavy lift vessel, which is more commonly used in industry, is a more reliable and, in turn, ALARP approach. If environmental conditions permit (wind speed, wave height, current and plume radius), deployment of a capping stack would be attempted with a heavy lift vessel.</p> <p>Woodside maintains several frame agreements with various vessel service providers and maintains the ability to call off services with a capping stack and debris clearance agreement. The location of suitable vessels for capping stack deployment are monitored monthly. The supply arrangements and reliability to achieve the required mobilisation time will be revalidated prior to spud. Consideration to mobilise the capping stack from the supplier on a suitable vessel but then hand over to another vessel to conduct the capping activity will also be made to meet response time frames. A site-specific landing force analysis through computational fluid dynamic (CFD) modelling confirms the ability to land the capping stack.</p>	Yes	<p>Conventional/vertical capping stack deployment with a heavy lift vessel will be attempted at the discretion of the vessel master on the day, giving due regard to the safety of the vessel and crew. Circumstances that limit the safe execution of this control measure include lower explosive limit (LEL) concentrations, volatile concentrations of hydrocarbons in the atmosphere, weather window, waves and/or sea states and high ambient temperatures.</p>
Source control via relief well drilling	<p>A release of condensate will be over approximately 77 days. Relief well drilling is one of the primary options to stop the release.</p>	<p>For a spill from the Vincent well, relief well drilling will be a feasible means of stopping a loss of well containment event. Relief well drilling is a widely accepted and utilised technique.</p>	Yes	<p>Relief well drilling will be the main technique employed to control a loss of well containment event.</p>
Subsea dispersant injection	<p>Application of subsea dispersant may reduce the scale and extent of hydrocarbons reaching the surface and thus may reduce spill volumes contacting predicted RPAs.</p> <p>SSDI can increase dispersed/entrained hydrocarbons which can potentially have higher</p>	<p>The goal of SSDI is to decrease the volume of oil that rises to the water surface and to reduce exposure to floating and entrained/dissolved oil. Based on the deterministic modelling analysis, it is predicted that 959 m³ of shoreline accumulation would potentially occur up to 3.5 days after the LOWC occurred in the deterministic run with the shortest timeframe to shoreline accumulation, and no accumulation is predicted at any receptor</p>	Yes	<p>Due to the surface and shoreline exposure predicted at RPAs, together with this technique being required to facilitate other source control techniques, the use of SSDI is deemed a potentially appropriate response option. The use of this technique is considered feasible, however, the application will depend on the specifics of</p>

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
	<p>toxicity to biota in shallow water than naturally dispersed hydrocarbons.</p> <p>Entrained oil could potentially impact on sensitive shallow-water receptors e.g. corals and fish, which may be otherwise unaffected.</p> <p>Entrained oil plume likely to be increased resulting in greater spatial extent of entrained oil.</p>	<p>until day 31 (13,442 m³) in the deterministic run with the largest accumulations.</p> <p>The use of SSDI may provide assistance to responders under-taking SIMOPS operations around the wellhead, such as source control and containment and recovery, by reducing the risk of volatile hydrocarbons at the sea surface.</p> <p>Despite the considerable amount of research and experimental work completed since the Deepwater Horizon spill (Quigg et al. 2021), there is conflicting evidence on the efficacy of SSDI. The technique may also not be feasible if volatile atmospheric conditions surrounding a loss of well containment are present.</p>		<p>the spill scenario net environmental benefit at the time of the incident.</p>
Surface dispersant application	<p>Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors.</p> <p>Dispersant can also enhance biodegradation and may reduce VOCs in some circumstances therefore reducing potential health and safety risk to responders.</p> <p>Dispersant can increase dispersed/entrained hydrocarbons which can potentially have higher toxicity to biota in shallow water than naturally dispersed hydrocarbons.</p> <p>Subsurface oil plume likely to increase in size resulting in greater spatial extent of entrained oil.</p> <p>Entrained oil could potentially impact on sensitive shallow-water receptors e.g. corals, which otherwise may have been unaffected.</p>	<p>Modelling predicts that floating oil will reach the required threshold (>50 g/m²) for surface dispersant to be effective. The modelling indicates that only a small percentage will evaporate or entrain within the upper water column, thus leaving a relatively large proportion of the hydrocarbon slick remaining at the sea surface.</p> <p>The relatively low volatile nature of the Vincent Crude indicates that this technique could be applied safely by responders in the vicinity of the hydrocarbon spill, thus this response is deemed potentially suitable for this scenario.</p>	Yes	<p>Vincent Crude has low volatility, with minimal evaporation and dispersion predicted, resulting in the surface spill thicknesses enough for dispersant to potentially be effective. Application of dispersant will only be conducted if operation monitoring determines concentration at appropriate thresholds, and that a positive net environmental benefit has been predicted.</p> <p>Surface dispersant will only be applied in offshore waters (>20 m water depths) near the release location and not near reefs and/or shorelines (>10 km).</p>
Mechanical dispersion	<p>Mechanical dispersion involves the use of a vessel's prop wash and/or fire hose to target surface hydrocarbons to achieve dispersion into the water column. However, this technique is of limited benefit in an open ocean environment where wind and wave action are likely to deliver similar advantages.</p>	<p>Although the technique is feasible, highly volatile hydrocarbons are likely to weather, spread and evaporate quickly.</p> <p>The volatile nature of the oil likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon.</p> <p>Additionally, any vessel used for mechanical dispersion activities would be contaminated by the hydrocarbon and could potentially cause secondary contamination of unimpacted areas when exiting the spill area.</p> <p>The decontamination of a vessel used for mechanical dispersion activities would result in additional quantities of oily waste requiring appropriate handling and treatment.</p>	No	<p>Given the limited benefit of mechanical dispersion over natural wind and wave action, secondary contamination and waste issues, and the associated safety risk of implementing the response for this activity, this strategy is deemed unsuitable.</p>
In-situ burning	<p>In-situ burning is only effective where minimum slick thickness can be achieved and where calm metocean conditions can be ensured. Use of this technique would also cause an increase the release of atmospheric pollutants.</p>	<p>There is a limited window of opportunity in which this technique can be applied (prior to evaporation of the volatiles) which would be difficult to achieve.</p> <p>Furthermore, this technique may be prevented from being undertaken due to personnel safety issues arising from predicted high local concentrations of atmospheric volatiles.</p>	No	<p>The safety concerns and the predicted low effectiveness associated with implementing an in-situ burning response outweigh the potential environmental benefit.</p>
Containment and recovery	<p>Containment and recovery has an effective recovery rate of 5-10% when a hydrocarbon encounter rate of 25-50% is achieved at BAOAC 4 and 5. It has the potential to reduce the magnitude, probability, extent, contact and accumulation of hydrocarbon on shorelines receptors when suitable encounter rates can be achieved. It also has the potential to reduce the magnitude and extent of contact with submerged</p>	<p>Modelling of a Vincent Crude spill for the Ngujima-Yin drilling project predicts that floating oil may reach the required threshold (>50 g/m²) for containment and recovery to be feasible within any RPA.</p> <p>In the event that the sea-state and weather conditions are suitable for safe operations, this response will be feasible.</p>	Yes	<p>Containment and recovery would be an effective response technique as it requires a hydrocarbon thickness of BAOAC 4-5 with a 50-100% coverage of 100-200 g/m². Modelling predicts surface hydrocarbons in certain areas to reach above 50 g/m², thus this response strategy is considered effective.</p>

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
	receptors by removing oil before further natural entraining/dissolving of hydrocarbons occurs.			
Shoreline protection and deflection	Shoreline protection and deflection can be effective at preventing contamination of sensitive resources and can be used to corral oil into slicks thick enough to skim effectively.	<p>If real-time Operational Monitoring activities (OM01, OM02 and OM03) indicate surface hydrocarbons are moving toward shorelines, pre-emptive assessments of sensitive receptors at risk (OM04) and existing TRPs will be utilised to guide shoreline protection and deflection operations, in agreement with WA DoT (for Level 2/3 spills).</p> <p>Based on the deterministic modelling analysis, it is predicted that floating oil could contact the edge of any shoreline receptor (at a threshold of 10 g/m²) within 1.3 days after the surface release has occurred.</p> <p>The first shoreline accumulation (at a threshold of 100 g/m²) from a subsea hydrocarbon release was predicted to occur on Day 31 (13,442 m³ at Ningaloo Coast WH/Ningaloo MP (State) in the deterministic run with the largest accumulations. For the deterministic run with the shortest timeframe to shoreline accumulation, 959 m³ of shoreline accumulation would potentially occur up to 3.5 days. Thus, the timeframe to deploy this technique need to be taken into consideration at the time of the incident.</p> <p>Protection strategies can be used for targeted protection of sensitive resources.</p> <p>Access to sensitive areas may cause more negative impact than benefit.</p>	Yes	<p>RPA's predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event.</p> <p>If RPA's are deemed to be at risk, based on real-time modelling during a spill event, shoreline protection and deflection techniques will be employed to minimise hydrocarbon accumulation providing net environmental benefit.</p>
Shoreline clean-up	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines where coverage is at an optimum level of 250 g/m ² .	<p>If real-time Operational Monitoring activities (OM01, OM02 and OM03) indicate hydrocarbons will contact shorelines, pre-emptive assessments of sensitive receptors at risk (OM04), shoreline assessments (OM05) and existing TRPs will be utilised to guide shoreline protection and deflection operations, in agreement with WA DoT (for Level 2/3 spills).</p> <p>The first shoreline accumulation (at a threshold of 100 g/m²) from a subsea hydrocarbon release was predicted to occur on Day 31 (13,442 m³ at Ningaloo Coast WH/Ningaloo MP (State) in the deterministic run with the largest accumulations. For the deterministic run with the shortest timeframe to shoreline accumulation, 959 m³ of shoreline accumulation would potentially occur up to 3.5 days. Thus, the timeframe to deploy this technique need to be taken into consideration at the time of the incident.</p> <p>Must ensure, through shoreline assessment, that sensitive sites will benefit from clean-up activities as the response itself may cause more negative impact than benefit through disturbance of habitats and species.</p>	Yes	<p>Response Protection Areas predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event.</p> <p>If RPA's are at risk, based on real-time modelling during a spill event, shoreline clean-up techniques will be deployed to expedite clean-up of the impacted sites.</p> <p>Removal of hydrocarbons will help shorten the recovery window unless shoreline type is of a sensitive nature.</p> <p>This technique can help prevent remobilisation of hydrocarbon and impact on shorelines.</p>
Oiled wildlife	Oiled wildlife response is an effective response technique for reducing the overall impact of a spill on wildlife. This is mostly achieved through hazing to prevent additional wildlife from being contaminated and through rehabilitation of those already subject to contamination.	<p>In the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken in accordance with the Wildlife Response Operational Plan as and where required. In addition, any rehabilitation could only be undertaken by trained specialists.</p> <p>Due to the likely volatile atmospheric conditions surrounding a Pluto Condensate spill, response options may be limited to hazing to ensure the safety of response personnel.</p>	Yes	This technique may prevent impact to and/or treat oiled wildlife providing net environmental benefit.

Table 4-2: Response technique evaluation – vessel collision

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Hydrocarbon: NY Topside Blends				
Operational Monitoring	<p>Will be effective in tracking the location of the spill, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include:</p> <ul style="list-style-type: none"> OM01 Predictive modelling of hydrocarbons – used throughout spill. ‘Ground-truthed’ using the outputs of all other monitoring techniques. OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill. OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water – from outset of spill. OM04 Pre-emptive assessment of sensitive receptors at risk – triggered once OM01, OM02 and OM03 inform likely RPAs at risk. OM05 Shoreline assessment – once OM02, OM03 and OM04 inform if any RPAs have been impacted. 	<p>Monitoring of a surface spill of NY Topsides Blend is a feasible response technique and outputs will be used to guide decision making on the use of other monitoring/response techniques and providing information to regulatory agencies including AMSA and WA DoT. Practicable techniques that could be used for this scenario include predictive modelling (OM01), surveillance and reconnaissance (OM02) and monitoring of hydrocarbon presence in water (OM03).</p> <p>Modelling predicts impact of shoreline receptors at threshold, therefore, pre-emptive assessment of sensitive receptors at risk (OM04) and monitoring of contaminated resources (OM05) would be utilised if any sensitive shoreline receptors are deemed to be at risk of impact.</p>	Yes	<p>Monitoring the spill will be necessary to:</p> <ul style="list-style-type: none"> validate trajectory and weathering models determine the behaviour of the oil in water determine the location and state of the slick provide forecasts of spill trajectory determine appropriate response techniques determine effectiveness of response techniques confirm impact pathways to receptors provide regulatory agencies with required information.
Source control via vessel SOPEP	Controlling the spill of diesel at source would be the most effective way to limit the quantity of hydrocarbon entering the marine environment.	A spill of diesel from a vessel collision will be instantaneous and source control will be limited to what the vessel or facility can safely achieve whilst responding to the incident.	Yes	Ability to stop the spill at source will be dependent upon the specific spill circumstances and whether or not it is safe for response personnel to access/isolate the source of the spill.
Surface dispersant application	<p>Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors.</p> <p>Dispersant can also enhance biodegradation and may reduce VOCs in some circumstances therefore reducing potential health and safety risk to responders.</p> <p>Dispersant can increase dispersed/entrained hydrocarbons which can potentially have higher toxicity to biota in shallow water than naturally dispersed hydrocarbons.</p> <p>Subsurface oil plume likely to increase in size resulting in greater spatial extent of entrained oil.</p> <p>Entrained oil could potentially impact on sensitive shallow-water receptors e.g. corals, which otherwise may have been unaffected.</p>	<p>Modelling predicts that floating oil will reach the required threshold (>50 g/m²) for surface dispersant to be effective. The modelling indicates that only a small percentage will evaporate or entrain within the upper water column, thus leaving a relatively large proportion of the hydrocarbon slick remaining at the sea surface.</p> <p>The relatively low volatile nature of the NY Topsides Blend indicates that this technique could be applied safely by responders in the vicinity of the hydrocarbon spill, thus this response is deemed potentially suitable for this scenario.</p>	Yes	<p>NY Topsides Blend has relatively low volatility, with minimal evaporation and dispersion predicted, resulting in the surface spill thicknesses enough for dispersant to potentially be effective. Application of dispersant will only be conducted if operation monitoring determines concentration at appropriate thresholds, and that a positive net environmental benefit has been predicted.</p> <p>Surface dispersant will only be applied in offshore waters (>20 m water depths) near the release location and not near reefs and/or shorelines (>10 km).</p>
Mechanical dispersion	Mechanical dispersion involves the use of a vessel's prop wash and/or fire hose to target surface hydrocarbons to achieve dispersion into the water column. However, this technique is of limited benefit in an open ocean environment where wind and wave action are likely to deliver similar advantages.	<p>Although the technique is feasible, highly volatile hydrocarbons are likely to weather, spread and evaporate quickly.</p> <p>The volatile nature of the oil likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon.</p> <p>Additionally, any vessel used for mechanical dispersion activities would be contaminated by the hydrocarbon and could potentially cause secondary contamination of unimpacted areas when exiting the spill area.</p> <p>The decontamination of a vessel used for mechanical dispersion activities would result in additional quantities of oily waste requiring appropriate handling and treatment.</p>	No	Given the limited benefit of mechanical dispersion over natural wind and wave action, secondary contamination and waste issues, and the associated safety risk of implementing the response for this activity, this strategy is deemed unsuitable.

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
In-situ burning	In-situ burning is only effective where minimum slick thickness can be achieved.	Use of in-situ burning as a response technique for marine diesel is unfeasible as the minimum slick thickness cannot be attained due to rapid spreading. In addition, there is a limited window of opportunity in which this technique can be applied (prior to evaporation of the volatiles) which is unlikely to be achieved. Furthermore, entering a volatile environment to undertake this technique would be unsafe for response personnel and its used would unnecessarily cause an increase the release of atmospheric pollutants.	No	Diesel characteristics are not appropriate for the use of in-situ burning and would unnecessarily cause an increase the release of atmospheric pollutants.
Containment and recovery	Containment and recovery has an effective recovery rate of 5-10% when a hydrocarbon encounter rate of 25-50% is achieved at BAOAC 4 and 5. It has the potential to reduce the magnitude, probability, extent, contact and accumulation of hydrocarbon on shorelines receptors when suitable encounter rates can be achieved. It also has the potential to reduce the magnitude and extent of contact with submerged receptors by removing oil before further natural entraining/dissolving of hydrocarbons occurs.	Modelling of a surface spill of NY Topsides Blend spill for the Ngujima-Yin drilling project predicts that floating oil may reach the required threshold (>50 g/m ²) for containment and recovery to be feasible within any RPA. In the event that the sea-state and weather conditions are suitable for safe operations, this response will be feasible.	Yes	Containment and recovery would be an effective response technique as it requires a hydrocarbon thickness of BAOAC 4-5 with a 50-100% coverage of 100-200 g/m ² . Modelling predicts surface hydrocarbons in certain areas to reach above 50 g/m ² , thus this response strategy is considered effective.
Shoreline protection and deflection	Shoreline protection and deflection can be effective at preventing contamination of sensitive resources and can be used to corral oil into slicks thick enough to skim effectively.	If real-time Operational Monitoring activities (OM01, OM02 and OM03) indicate surface hydrocarbons are moving toward shorelines, pre-emptive assessments of sensitive receptors at risk (OM04) and existing TRPs will be utilised to guide shoreline protection and deflection operations, in agreement with WA DoT (for Level 2/3 spills). Based on the deterministic modelling analysis, it is predicted that floating oil could contact the edge of any shoreline receptor (at a threshold of 10 g/m ²) within 1.4 days after the surface release has occurred. The first shoreline accumulation (at a threshold of 100 g/m ²) from a surface hydrocarbon release was predicted to occur on Day 2.5 (3,036 m ³ at Ningaloo Coast WH). Thus, the timeframe to deploy this technique need to be taken into consideration. Protection strategies can be used for targeted protection of sensitive resources. Access to sensitive areas may cause more negative impact than benefit.	Yes	RPAs predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event. If RPAs are deemed to be at risk, based on real-time modelling during a spill event, shoreline protection and deflection techniques will be employed to minimise hydrocarbon accumulation providing net environmental benefit.
Shoreline clean-up	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines where coverage is at an optimum level of 250 g/m ² .	If real-time Operational Monitoring activities (OM01, OM02 and OM03) indicate hydrocarbons will contact shorelines, pre-emptive assessments of sensitive receptors at risk (OM04), shoreline assessments (OM05) and existing TRPs will be utilised to guide shoreline protection and deflection operations, in agreement with WA DoT (for Level 2/3 spills). The first shoreline accumulation (at a threshold of 100 g/m ²) from a surface hydrocarbon release was predicted to occur on Day 2.5 (3,036 m ³ at Ningaloo Coast WH). Thus, the timeframe to deploy this technique need to be taken into consideration. Can reduce or prevent impact on sensitive receptors in most cases. Verify, through shoreline assessment, that sensitive sites will benefit from clean-up activities as the response itself may cause more negative impact than benefit through disturbance of habitats and species.	Yes	Response Protection Areas predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event. If RPAs are at risk, based on real-time modelling during a spill event, shoreline clean-up techniques will be deployed to expedite clean-up of the impacted sites. Removal of hydrocarbons will help shorten the recovery window unless shoreline type is of a sensitive nature. This technique can help prevent remobilisation of hydrocarbon and impact on shorelines.
Oiled wildlife response	Oiled wildlife response is an effective response technique for reducing the overall impact of a spill on wildlife. This is mostly achieved through hazing to	Due to the likely volatile atmospheric conditions surrounding a diesel spill, response options may be limited to hazing to ensure the safety of response personnel.	Yes	The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required. However, in the event that

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
	prevent additional wildlife from being contaminated and through rehabilitation of those already subject to contamination.	<p>The modelling undertaken predicts that no sensitive areas will be impacted thus it is unlikely that this technique would be required.</p> <p>Monitor and evaluate will, however, be deployed from the outset of a spill to track the spill location and fate in real-time. Thus, in the event that wildlife are at risk of contamination, oiled wildlife response will be undertaken in accordance with the Wildlife Response Operational Plan as and where required. In addition, any rehabilitation could only be undertaken by trained specialists.</p>		wildlife are at risk of contamination, oiled wildlife response will be undertaken as and where required.

5 HYDROCARBON SPILL ALARP PROCESS

Woodside's hydrocarbon spill ALARP process is aligned with guidance provided by NOPSEMA in *ALARP Guidance Note N-04300-GN0166* (2022) and *Oil Spill Risk Management Guidance Note N-04750-GN1488* (2021) and is set out in the 'Woodside Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) Guidelines'.

From the identified response planning need and pre-operational NEBA/SIMA, Woodside conducts a structured, semi-quantitative hydrocarbon spill process which has the following steps:

1. considers the Response Planning Need identified in terms of surface area (km²) and available surface hydrocarbon volumes (m³) against existing Woodside capability
2. considers alternative, additional, and improved options for each response technique/control measure by providing an initial and, if required, detailed evaluation of:
 - predicted cost associated with adopting the control measure
 - predicted change/environmental benefit
 - predicted effectiveness/feasibility of the control measure.
3. evaluates the risks and impacts of implementing the proposed response techniques, and any further control measures with associated environmental performance to manage these additional risks and impacts.

Woodside considers the risks and impacts from a hydrocarbon spill to have been reduced to ALARP when:

1. a structured process for identifying and considering alternative, additional, and improved options has been completed for each selected response technique
2. the analysis of alternate, additional, and improved control measures meets one of the following criteria:
 - all identified, reasonably practicable control measures have been adopted; or
 - no identified reasonably practicable additional, alternative and/or improved control measures would provide further overall increased proportionate environmental benefit; or
 - no reasonably practical additional, alternative, and/or improved control measures have been identified.
3. where an alternative, additional and/or improved control measure is adopted, a measurable level of environmental performance has been assigned
4. higher order impacts/ risks have received more comprehensive alternative, additional, and improved control measure evaluations and do not just compare the cost of the adopted control measures to the costs of an extreme or clearly unreasonable control measure
5. cumulative effects have been analysed when considered in combination across the whole activity.

The response technique selection is based on the risk assessment conducted in the EP. The risk assessment identifies the type of oil, volume of release, duration of release, predicted fate, weathering and the EMBA (along with other requirements such as time to impact and predicted volumes ashore). Modelling is then used to inform the NEBA and the prioritisation of suitable response options. The scale of the response techniques selected in the pre-operational NEBA is informed through the assessment of results from deterministic modelling.

For the purpose of the ALARP assessment, the following terms and definitions have been used:

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- Response techniques are considered the control measures that reduce consequences from hydrocarbon spill events. The terms ‘response technique’ and ‘control measure’ are used interchangeably.
- Cost is defined as the time, effort and/or trouble taken in financial, safety, design/storage/installation, capital/lease, and/or operations/maintenance terms to adopt a control measure.
- Where the predicted change to environmental impact is compared against standard environmental values and sensitivities impacts using positive or negative criteria from the NEBA Impact Ranking Classification Guidance in Annex A.

5.1 Operational Monitoring

Operational Monitoring includes the gathering and evaluation of data to inform the oil spill response planning and operations. It includes fate and trajectory modelling, spill tracking, weather updates and field observations. This response option is deployed in some capacity for every event.

The table below provides the operations monitoring plans that support the successful execution of this response technique.

Table 5-1: Description of supporting operational monitoring plans

ID	Title
OM01	Predictive modelling of hydrocarbons to assess resources at risk
OM02	Surveillance and reconnaissance to detect hydrocarbons and resources at risk
OM03	Monitoring of hydrocarbon presence, properties, behaviour and weathering in water
OM04	Pre-emptive assessment of sensitive receptors at risk
OM05	Shoreline assessment

Woodside maintains an *Operational Monitoring Operational Plan*. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. If shorelines are contacted, a shoreline assessment survey will be completed to guide effective shoreline clean-up operations. This plan includes the process for the IMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Exmouth / Onslow / Dampier / Karratha / Port Hedland to the spill event location means that multiple logistical options are available to monitor the spill in relatively short timeframes. The primary mobilisation base for initial monitoring activities would be Exmouth. However, in the event of an extended spill with potential to impact receptors further afield, monitoring activities may also be mobilised from Onslow / Dampier / Karratha / Port Hedland.

5.1.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- Floating surface oil in sufficient concentrations for effective operational monitoring is expected with surface concentrations of 10 g/m² reaching an extensive number of receptors from the well location, with the shortest time to contact being 1.3 days (MEE-01) and 1.4 days (MEE-05). Floating surface oil at concentrations of 50 g/m² was also predicted to reach a number of receptors from the well location for the both the scenarios.
- The shortest timeframe that shoreline contact from floating oil at concentrations of 100 g/m² predicted was 3.5 days at Muiron Islands (including the MMA) (MEE-01) and 2.5 days for Exmouth, Ningaloo MP (State), and Ningaloo Coast WH (MEE-05).
- The time to contact for oil at concentrations of entrained hydrocarbons greater than 100 ppb at shoreline receptors is 1.3 hours at Ningaloo Coast WH (MEE-05).
- Arrangements for support organisations who provide specialist services or resources should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.
- The duration of the spill may extend up to 77 days with response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

5.1.2 Environmental performance based on need

Table 5-2: Environmental Performance – Operational Monitoring

Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture as soon as possible and predict the fate and behaviour of the spill to validate planning assumptions and adjust response plans as appropriate to the scenario.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
1	Oil spill trajectory modelling (OM01)	1.1	Initial modelling available within 6 hours using the Rapid Assessment Tool	1, 3B, 3C, 4
		1.2	Detailed modelling available within 4 hours of APASA receiving information from Woodside	
		1.3	Detailed modelling service available for the duration of the incident upon contract activation	
2	Tracking buoy (OM02)	2.1	Tracking buoy located on facility/vessel and ready for deployment 24/7	1, 3A, 3C, 4
		2.2	Deploy tracking buoy from facility within 2 hours as per the First Strike Plan.	1, 3A, 3B, 4
		2.3	Contract in place with service provider to allow data from tracking buoy to be received 24/7 and processed.	1, 3B, 3C, 4
		2.4	Data received to be uploaded into Woodside COP daily to improve the accuracy of other Operational Monitoring techniques.	1, 3B, 4
		2.5	For unmanned facility/vessel deploy tracking buoy within 48 hours	1, 3A, 3C, 4
3	Satellite imagery (OM03)	3.1	Contract in place with 3 rd party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service.	1, 3C, 4
		3.2	3 rd party provider will confirm availability of an initial acquisition within 2 hours	1, 3B, 3C, 4
		3.3	First image received with 24 hours of Woodside confirming to 3 rd party provider its acceptance of the proposed acquisition plan.	1
		3.4	3 rd party provider to submit report to Woodside per image. Report is to include a polygon of any possible or identified slick(s) with metadata.	1
		3.5	Data received to be uploaded into Woodside COP daily to improve accuracy of other Operational Monitoring techniques.	1, 3B, 4
		3.6	Satellite Imagery services available and employed during response	1, 3C, 4
4	Aerial surveillance (OM02)	4.1	1x trained aerial observers available to be deployed by day 1 from resource pool.	1, 2, 3B, 3C, 4
		4.2	1 x aircraft available for two sorties per day, available for the duration of the response from day 1.	1, 3C, 4

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Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture as soon as possible and predict the fate and behaviour of the spill to validate planning assumptions and adjust response plans as appropriate to the scenario.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
		4.3	Observer to compile report during flight as per First Strike Plan. Observers report available to the IMT within 2 hours of landing after each sortie.	1, 2, 3B, 4
		4.4	Unmanned Aerial Vehicles/Systems (UAV/UASs) to support SCAT, containment and recovery and surface dispersal and pre-emptive assessments as contingency if required.	1, 2
5	Hydrocarbon detections in water (OM03)	5.1	Activate 3 rd party service provider as per first strike plan. Deploy resources within 3 days: <ul style="list-style-type: none"> • 3 x specialists in water quality monitoring • 2 x monitoring systems and ancillaries • 1 x vessel for deploying the monitoring systems with a dedicated winch, A-frame or Hiab and ancillaries to deploy the equipment. 	1, 2, 3C, 3D, 4
		5.2	Water monitoring services available and employed during response.	1, 3C, 4
		5.3	Preliminary results of water sample as per contractor's implementation plan within 7 days of receipt of samples at the accredited lab	
		5.4	Daily fluorometry reports as per service provider's implementation plan will be provided to IMT to validate modelling and monitor presence/ absence of entrained hydrocarbons.	
		5.5	Use of Autonomous Underwater Vehicles (AUVs) for hydrocarbon presence and detection may be used as a contingency if the operational SIMA confirms conventional methods are unsafe or not possible.	1, 2, 3C, 4
6	Pre-emptive assessment of sensitive receptors (OM04)	6.1	Mobilisation within 3 days, in consultation with WA DoT (for Level 2/3 incidents), deployment of 3 x specialists from resource pool in establishing the status of sensitive receptors.	1, 2, 3B, 3C, 4
		6.2	Daily reports provided to IMT on the status of the receptors to prioritise Response Protection Areas (RPAs) and maximise effective utilisation of resources.	1, 3B, 4
7	Shoreline assessment (OM05)	7.1	Mobilisation within 3 days, in consultation with WA DoT (for Level 2/3 incidents), deployment of 2 x specialist(s) in SCAT from resource pool for each of the Response Protection Areas (RPAs) with predicted impacts at greater than 100 g/m ² .	1, 2, 3B, 3C, 4
		7.2	SCAT reports provided to IMT daily detailing the assessed areas to maximise effective utilisation of resources	1, 3B, 4
		7.3	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations.	1

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The control measures and capability of Woodside and its third-party service providers are shown to support Operational Monitoring activities up to and including the identified WCCS. This is demonstrated by the following:

- Woodside has a documented, structured and tested capability for Operational Monitoring operations including internal trajectory modelling capabilities, tracking buoys located offshore and contracted aerial observation platforms with access to trained observers.
- Woodside and its third-party service providers ensure there is sufficient capability for the duration of the response.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.1.

5.2 Source control and well intervention

The worst-case credible scenario for a loss of well containment is considered to be loss of well control during production operations. This scenario would result in an uncontrolled flow from the well as outlined in the EP. In the event of a loss of well containment, the primary response would be source control and well intervention.

The Woodside IMT is able to mobilise resources for Xmas Tree intervention, Subsea First Response Toolkit (SFRT) support, and capping support and relief well drilling. Woodside has pre-identified vessel specifications and contracts required for SFRT debris clearance work and monitors the availability and location of these vessels.

Woodside is a signatory to a MoU between Australian offshore operators to provide mutual aid to facilitate and expedite mobilising a MODU and drilling a relief well, if a loss of well containment incident were to occur. The MoU commits the signatories to share MODUs, equipment, personnel and services to assist another operator in need. Dynamically positioned (DP) and moored MODUs are suitable for the PAP. A moored MODU, for the relief well construction, has been used as the basis for the analysis within this document.

Source control operations cannot be implemented if the safety of response personnel cannot be guaranteed. Circumstances that limit the safe execution of this control measure include lower explosive limit (LEL) concentrations, volatile concentrations of hydrocarbons in the atmosphere, weather window, waves and/or sea states (>1.5m waves) and high ambient temperatures.

5.2.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- Prior to any source control activities, Woodside will implement protocols to ensure the site is safe including subsea ROV surveys and surface air monitoring.
- Hydrocarbons will flow from the well until one of the following interventions can be made:
 - direct intervention by ROV to close Xmas tree
 - well intervention is performed to isolate the well
 - a capping stack is in place.
 - a relief well is drilled and first attempt at well kill within 77 days.
- Arrangements for support organisations who provide specialist services or resources will be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These will be reviewed and updated regularly.
- The duration of the spill may be up to 77 days with response operations completing in month 4-5 based on the predicted time to complete shoreline clean-up operations.

In addition, a number of assumptions are required to estimate the response need for source control. These assumptions have been described in the table below.

Table 5-3: Response Planning Assumptions – Source Control

Response planning assumptions

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<p>Safety considerations</p>	<p>Source control operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site, in accordance with the Woodside Management System (WMS).</p> <p>Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • high winds, waves and/or sea states • high ambient temperatures.
<p>Feasibility considerations</p>	<p>Woodside’s source control options include ROV intervention, well intervention, capping stack and relief well drilling.</p> <p>The following approaches outline Woodside’s hierarchy for selecting a MODU for relief well drilling;</p> <ul style="list-style-type: none"> • Primary option – review internal drilling programs and MODU availability to source an appropriate MODU operating within Australia with an approved Safety Case; • Alternate option – source and contract a MODU through AEP MOU operating within Australia with an approved Safety Case; • Contingency option – source and contract a MODU outside Australia with an approved Australian Safety Case

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5.2.2 Environmental performance based on need

Table 5-4: Environmental Performance – Source Control

Environmental Performance Outcome		To stop the flow of hydrocarbons into the marine environment		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
8	Subsea First Response Toolkit (SFRT)	8.1	Oceanering support staff available all year round, via contract, to assist with the mobilisation, deployment, and operation of the SFRT equipment.	1, 3B, 3C
		8.2	Intervention vessel with minimum requirement of a working class ROV and operator.	1, 3C
		8.3	Mobilised to site for deployment within 11 days.	1, 3B, 3C
		8.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
9	Well intervention	9.1	Frame agreements with ROV providers in place to be mobilised upon notification. ROV equipment deployed within 7 days.	1, 3B, 3C
		9.2	Source control vessel will have the following minimum specifications: <ul style="list-style-type: none"> • active heave compensated crane, rated to at least 150 T in shallower water and 250 T in deeper water. • at least 90 m in length • deck has water/electricity supply • deck capacity to hold at least 110 T of capping stack. 	1, 3B, 3C
		9.3	Identify source control vessel availability within 24 hours and begin contracting process. Vessel mobilised to site for deployment within 16 days for conventional capping.	1, 3B, 3C
		9.4	Well intervention attempt made using ROV and SFRT within 11 days.	1, 3B, 3C
		9.5	Capping stack on suitable vessel mobilised to site within 16 days. Deployment and well intervention attempt will be made once plume size is acceptable and safety and metocean conditions are suitable.	1, 3C
		9.6	Wild Well Control Inc (WWCI) staff available all year round to assist with the mobilisation, deployment, and operation of the capping stack and well intervention equipment.	1, 3B, 3C
		9.7	MODU mobilised to site for relief well drilling within 21 days.	1, 3C
		9.8	First well kill attempt completed within 77 days	1, 3B, 3C
		9.9	Open communication line(s) to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
		9.10	Monthly monitoring of the availability of MODUs through existing market intelligence including current Safety Case history, to meet specifications for relief well drilling.	3C

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Environmental Performance Outcome		To stop the flow of hydrocarbons into the marine environment		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
10	Support vessels	10.1	Monitoring of the availability of larger vessels through existing Frame Agreements and market intelligence to meet specifications for source control.	3C
		10.2	Vessel frame agreements require suitable vessels to maintain in-force safety case approvals covering ROV operations and provide support in the event of an emergency.	1, 3B, 3C
		10.3	MODU and vessel contracts include clause outlining requirement for support in the event of an emergency	1, 3C
11	Safety Case	11.1	Woodside will prioritise MODU or vessel(s) for intervention work(s) that have an existing safety case	1, 3C
		11.2	Woodside Planning, Logistics, and Safety Officers (on roster/Call 24/7) to assist in expediting the safety case assessment process as far as practicable.	1, 3C
		11.3	Woodside will maintain minimum safe operating standards that can be provided to MODU and vessel operators for Safety Case guidance.	1, 3C

The resulting source control capability has been assessed against the WCCS. The range of techniques provide a feasible and viable approach to relief well drilling operations to stop the well flowing.

- The health and safety, financial, capital and operations/maintenance costs of implementing the alternative, additional or improved control measures identified and not carried forward are considered grossly disproportionate to the insignificant environmental benefit gained and/or not reasonably practicable for this PAP.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.2.

5.3 Source Control via Vessel SOPEP

Vessel source control will be conducted, where feasible and in accordance with MARPOL 73/78 Annex I, by the Vessel Master under the Shipboard Oil Pollution Emergency Plan (SOPEP) triggered by any loss of containment from the PAP vessels.

The SOPEP provides guidance to the Master and Officers on board the vessel with respect to the extra steps to be taken when an unexpected pollution incident has occurred or is likely to occur. The SOPEP contains all information and operational instructions required by IMO Resolution MEPC.54 (32) adopted on 6 March 1992, as amended by resolution MEPC.86 (44) adopted on 13 March 2000.

Its purpose is to set in motion the necessary actions to stop or minimise oil discharge and mitigate its effects and outlines responsibilities, pollution reporting requirements, procedures and resources needed in the event of a hydrocarbon spill from vessel activities.

In the event of the WCCS vessel collision event, the vessel master may engage precautionary marine manoeuvres to avoid collision or commence pumping operations to transfer marine diesel and thus minimise the release.

5.3.1 Environmental performance based on need

Woodside has established control measures, environmental performance outcomes, performance standards and measurement criteria to be used for vessel-source oil spill response during the PAP which are detailed in Section 6.8 of the EP. The vessel master's roles and responsibilities are described in EP Section 7.4.

Performance standards for each contracted PAP vessel are detailed in the vessel's specific SOPEP.

These standards ensure that sufficient resources are available and are adequately tested to ensure implementation of the SOPEP in the event of a hydrocarbon spill.

5.4 Subsea Dispersant Injection

Subsea dispersant injection involves the deployment of a subsea dispersant manifold with associated equipment to inject chemical dispersant directly into the oil plume in the event of a loss of well containment. As it may take some time to mobilise subsea dispersant equipment, surface dispersants are generally used in the interim to treat oil that makes it to the surface.

The use of subsea dispersants has similar benefits to surface dispersant application including a potential reduction in the volume of hydrocarbons that reach the shoreline thereby reducing impacts to sensitive receptors. In addition to these benefits, subsea dispersant application may reduce volatile organic compound (VOC) levels during surface response operations, reducing risks and hazards to responders.

The *Subsea Dispersants Operational Plan* details the mobilisation and resource requirements for dispersant operations including the logistics, support and facility arrangements to manage the movement of personnel and resources.

5.4.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- The maximum volume of subsea hydrocarbons released is predicted to be approximately 3,358 m³/day for 11 weeks/ 77 days until the well is killed.
- Ability to treat a large proportion of the daily hydrocarbon release volumes.
- A subsea dispersant injection system with sufficient coiled tubing for water depth.
- Arrangements for support organisations who provide specialist services, including subsea plume monitoring, or resources should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.
- The duration of the spill may extend up to 77 days with response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

In addition, a number of assumptions are required to estimate the response need for Subsea Dispersant Injection. These assumptions have been described in the table below.

Table 5-5: Response Planning Assumptions – Subsea Dispersant Injection

Response Planning Assumptions	
Safety considerations	<p>Subsea dispersant operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • high winds, waves and/or sea states • high ambient temperatures.
Technique	Application parameters ⁷
Subsea Dispersant Injection	<p>The predicted performance range for SSDI is based on:</p> <ul style="list-style-type: none"> • total rate of subsea released oil available for SSDI • subsea inspection (ROV) observing oil release and technique safe for deployment • dispersant to oil application at 1:60-1:100 (used to determine the volume of dispersant required) • predicted dispersant effectiveness of 50-60% of contacted subsea oil (based upon industry research).
SSDI operation	<p>1 x SSDI operation includes:</p> <p>1 x suitable vessel (specifications as per SFRT and Subsea Dispersant Injection Operational Plan)</p> <ul style="list-style-type: none"> • subsea dispersant delivery system • work class ROV with ancillaries and hydraulic power unit (HPU) • dispersant pump • down hole line/ coiled tubing • trained ROV operator(s) • trained subsea specialists.
Dispersant delivery (per operation)	<p>Lower – 60 m³ per 24 hours</p> <p>Upper – 75 m³ per 24 hours</p>
Dispersant Effectiveness	<p>Dispersant testing on Vincent Crude indicates that average dispersant efficiency (%) for oil age will be;</p> <ul style="list-style-type: none"> • 82.4% (0 hrs) • 75.4% (24hrs) • 81.8% (96hrs) • 74.4% (>240 hrs) <p>This data is based on a range of weathering results and five National Plan OSCA approved dispersants that will be the most likely dispersant used by Woodside.</p>

⁷ Performance ranges outlined are indicative for response planning purposes. Where actual figures and concentrations exist based on deterministic modelling or laboratory results, these will be used for response and capability planning.

5.4.2 Environmental performance based on need

Table 5-6: Environmental Performance – Subsea Dispersant Injection

Environmental Performance Outcome		To reduce consequences to surface and shoreline receptors and increase the bioavailability of hydrocarbons for microbial breakdown.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
12	Subsea spraying	12.1	Contract in place to provide Subsea Dispersant equipment resources (via SFRT)	1, 3B, 3C, 4
		12.2	Oceanering support staff available all year round, via contract, to assist with the mobilization, deployment, and operation of the SFRT equipment.	
		12.3	Subsea Dispersant vessel will have the following minimum specifications: <ul style="list-style-type: none"> • Compensated seabed crane up to 36 mt • Mobilised to site for deployment within 12 days 	1, 3A, 3C, 4
		12.4	Per day dispersant log completed to record quantity of dispersants applied	1, 3A, 3B
		12.5	Contract in place to provide SSDI and debris clearance equipment and trained personnel	1, 3B, 3C, 4
13	Support vessels	13.1	Monthly monitoring of the availability of suitable vessels through existing Frame Agreements and market intelligence to meet specifications for subsea dispersant injection.	3C, 4
		13.2	Vessel frame agreements require suitable vessels to maintain in-force safety case approvals covering ROV operations and provide support in the event of an emergency.	1, 3B, 3C
14	Dispersant	14.1	Year-round access to 5000 m ³ of dispersant located globally which is ready to be mobilised within 48 hours under activation of GDS membership.	1, 3A, 3B, 3C, 3D, 4
		14.2	Year-round access to additional dispersant stockpiles via memberships with OSRL and AMOSC.	
15	Management of Environmental Risk	15.1	OSCA approved dispersants prioritised for surface and subsea use	1, 3A, 3B, 3C, 4

The resulting subsea dispersant injection capability has been assessed against the WCCS. The maximum volume of subsea hydrocarbon released is estimated to be approximately 3,358 m³/day until the well is killed.

Dispersant efficacy testing confirms that the Vincent Crude is predicted to be amendable to dispersant use with an approximately range of 74.4-82.4% effectiveness.

The SSDI capability currently available provides the capacity to treat 3,000 to 7,500 m³ of subsea hydrocarbons per day with the application of 60-75m³/day of dispersant by Day 12. The release rates for Vincent well (VNBH4-ST2) is within this range and therefore the SSDI is considered a primary response technique for the subsea loss of well control scenarios and the capability is deemed sufficient.

Under optimal conditions, during the subsea release period the capability available meets the need identified and indicates that, the subsea dispersant capability has the following expected performance(s):

- entrained hydrocarbon concentrations in the water column are predicted to increase at most subsurface receptor locations, with dispersant application from the trapping of treated entrained hydrocarbons at a lower depth (from subsea dispersant application) due to the greatly reduced droplet size and therefore reduced buoyancy.
- the application of subsea dispersant may reduce the maximum local concentrations and maximum accumulated volumes at receptors predicted to be contacted by floating hydrocarbons and may reduce the amount of hydrocarbons reaching the shoreline.
- the scope of the Frame Agreement Vessel Safety Case includes a range of subsea activities that would cover the requirement for SSDI operations such as subsea manifold installation, commissioning, cargo transfer (including bulk liquids), operating as a stable platform for activities including ROV operations, and accommodation support alongside or within the 500 m safety zone of an existing facility which may be in production.
- an SSDI vessel can be activated and mobilised within 12 days. Detailed breakdown of this timing is included in Section 6.4. Whilst Woodside will make every endeavour to accelerate the activities to reduce this timeframe, Woodside believes that the timeframe outlined is appropriate and realistic to ensure these activities can be completed reliably.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.4.

5.5 Surface Dispersant Application

Surface dispersant application may reduce surface hydrocarbons and therefore can prevent, or reduce the scale of, shoreline contact. Priority would be placed on treating high volume surface hydrocarbons closest to the release location as this is where high surface concentrations are predicted, and dispersant application is expected to achieve the greatest environmental benefit (refer to Annex A).

Weathering of the hydrocarbons would reduce dispersant efficacy. In the event of an ongoing loss of well control, modelling predicts hydrocarbons reaching the surface may be heavily weathered or spread below effective response thresholds. Surface dispersant application is weather and sea-state dependent. Periods of downtime can be expected.

The Surface Dispersant Operational Plan details the mobilisation and resource requirements for dispersant operations including the logistics, support and facility arrangements to manage the movement of personnel and resources.

5.5.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which response need is based for each scenario:

- Surface hydrocarbons within threshold concentration ($>50 \text{ g/m}^2$) and viscosity parameters ($<10,000 \text{ cSt}$) available for surface dispersant application are predicted to be less than $3,358 \text{ m}^3$ per day from deterministic modelling.
- For MEE-01, surface volume peaks at 7454 m^3 on Day 8 and surface area peaks at 74 km^2 on Day 17. For MEE-05, surface volume peaks at 5907 m^3 on Day 2 and surface area peaks at 36 km^2 on Day 2.
- The duration of the spill may extend up to 77 days with response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.
- Arrangements for support organisations who provide specialist services (dispersant spray aircraft, logistics services for mobilizing dispersant and Air Attack Supervisors) or resources (dispersants and transfer pumping systems) and should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.
- Defined Zone of Application (ZoA) to reduce environmental consequences on subsea receptors

In addition, a number of assumptions are required to estimate the response need for Surface Dispersant Application. These assumptions have been described in the table below.

Table 5-7: Response Planning Assumptions – Surface Dispersant Application

Response Planning Assumptions	
Safety considerations	<p>Surface dispersant operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • high winds, waves and/or sea states • high ambient temperatures.
Technique	Application parameters ⁸
Surface Dispersant Application (combined vessel and aircraft)	<p>The predicted performance range for surface dispersant application is based on;</p> <ul style="list-style-type: none"> • remaining surface oil available for surface dispersant application following weathering, • operational monitoring observing surface oil at minimum BAOAC 4 (discontinuous true oil colour) or BAOAC 5 (continuous true oil colour), • safe for deployment, within range of vessels and aircraft, • dispersant to oil application at 1:20-1:25 (based on uniform surface oil 100 g/m² and 50 litres/hectare application rate) allows for 3-4 km² per aircraft per day, • predicted dispersant effectiveness of 74.4-82.4% for contacted surface oil, and • spraying encounter rate of approximately 50-75% (50-25% of dispersant sprayed does not contact surface oil)
Physical properties	<p>Surface threshold:</p> <ul style="list-style-type: none"> • Lower – 50 g/m² (equates to 100 g/m² with approximately 50% coverage and/or 200 g/m² with approximately 25% coverage) • BAOAC 4 – Discontinuous true oil colour – lower threshold 50 g/m² • Optimum – 100 g/m² (equates to >100 g/m² with approximately 100% coverage and/or 200 g/m² with approximately 50% coverage) • BAOAC 5 – Continuous true oil colour – lower threshold 200 g/m² <p>Viscosity:</p> <ul style="list-style-type: none"> • Optimum – <5,000 cSt at sea surface temperature • Upper – 10,000 cSt at sea surface temperature
Dispersant Effectiveness	<p>Dispersant testing on Vincent Crude indicates that average dispersant efficiency (%) for oil age will be;</p> <ul style="list-style-type: none"> • 82.4% (0 hrs) • 75.4% (24hrs) • 81.8% (96hrs) • 74.4% (>240 hrs) <p>This data is based on a range of weathering results and five National Plan OSCA approved dispersants that will be the most likely dispersant used by Woodside.</p>

⁸ Performance ranges outlined are indicative for response planning purposes. Where actual figures and concentrations exist based on deterministic modelling or laboratory results, these will be used for response and capability planning.

5.5.2 Environmental performance based on need

Table 5-8: Environmental Performance - Surface Dispersant Application

Environmental Performance Outcome		To reduce consequences to surface and shoreline receptors and increase the bioavailability of hydrocarbons for microbial breakdown.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
16	Aerial spraying	16.1	1 x aircraft with minimum payload of 1850 litre payload mobilised to site within 4 hours of activation. 1 x additional aircraft mobilised to site within another 20 hours of activation. 2 x additional aircraft mobilised to site within 48 hours of activation.	1, 3B, 3C, 4
		16.2	1 x high-capacity aircraft with minimum payload of 10 m ³ available to spray on day 2.	
		16.3	Small capacity aircraft to complete a minimum of 3 sorties per day and high-capacity aircraft to complete a minimum of 2 sorties per day.	1
		16.4	Per sortie spray log completed to record where dispersants were applied.	1, 3A, 3B
17	Vessel spraying	17.1	2 x offtake support vessels from integrated fleet will undertake dispersant trials within 24 hours of the release as per first strike plan.	1, 3A, 3B, 3C, 4
		17.2	2 x offtake support vessels will be available for deployment to spray dispersant for the duration of the response.	3A, 3C, 4
		17.3	Up to 2 x vessels spraying per day by day 2. An additional 2 x vessels spraying by day 3.	1, 3C
		17.4	Per day spray log completed to record where dispersants were applied	1, 3A, 3B
18	Dispersant	18.1	Year-round access to 5,000 m ³ of dispersant located globally which is ready to be mobilised on activation of GDS membership within 24-48 hours.	1, 3A, 3B, 3C, 3D, 4
		18.2	Year-round access to additional dispersant stockpiles via memberships with OSRL and AMOSC.	
		18.3	Only apply surface dispersants within the Zone of Application and on BAOAC 4 and 5	1, 3A, 3B, 3C, 4
19	Management of Environmental Risks	19.1	Surface dispersants will only be applied in the Zone of Application and on BAOAC 4 and 5 oil.	1
		19.2	OSCA approved dispersants prioritised for surface and subsea use	

The resulting surface dispersant response capability following ALARP evaluation has been assessed against the WCCS and surface release scenario.

- Surface concentration, viscosity and mass vary for each time step based on spreading and weathering algorithms from the deterministic modelling results. Woodside has reviewed the

deterministic modelling data based to determine the Response Need and required capability for surface dispersant application as a response technique.

- **For the subsea release scenario (MEE-01)** - Deterministic modelling predicts that there will be volumes (peak surface volume of 7454 m³ on Day 8 and surface area peaks at 74 km² on Day 17) of surface hydrocarbons for vessel-based and aerial dispersant operations to treat. Woodside's existing capability is available to treat the expected surface hydrocarbons throughout the incident. At times, the capability will be limited by safety or logistics including number of airframes permitted in the airspace simultaneously.
- **For the surface release (MEE-05)** – Deterministic modelling predicts that there will be volumes of surface hydrocarbons (surface volume peaks at 5907 m³ on Day 2 and surface area peaks at 36 km² on Day 2) for VDS and ADS operations to treat and Woodside's existing capability is sufficient to treat the expected surface hydrocarbons by surface area on Day 3.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.5.

5.6 Containment and Recovery

Containment and recovery is used to reduce damage to sensitive resources by the physical containment and mechanical removal of hydrocarbons from the marine environment. It has a lower capacity for removing surface oil than the application of dispersant but avoids potential additional impacts created by the resulting increase in entrained hydrocarbons in the water column.

Weathering and spreading of hydrocarbons will significantly reduce containment and recovery effectiveness. In the event of an ongoing loss of well control, modelling predicts fresh hydrocarbons reaching the surface may be heavily weathered and present in small discrete patches. Containment and Recovery is also weather and sea-state dependent. Periods of downtime can be expected.

The conditions in Exmouth are expected to exceed wind speeds equivalent to Beaufort Sea-state 3 for approximately 90% of the year (RPS modelling input data). Therefore, it is expected that open water containment and recovery operations would not, in general, be an effective response technique. However, Containment and Recovery may be available for deployment inside the Exmouth region and priority would be given to being prepared to deploy units if the conditions are met.

The *Containment and Recovery Operational Plan* details the mobilisation and resource requirements for response operations including the logistics, support and facility arrangements to manage the movement of personnel and resources.

5.6.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which response need is based:

MEE-01 – Loss of Well Control	MEE-05 – Topside release
<p>The following statements identify the key parameters upon which response need is based:</p> <ul style="list-style-type: none"> • Surface hydrocarbons above threshold concentration (>50 g/m²) available for containment and recovery are predicted to be 49 m³ on Day 1, 897 m³ on Day 2, 2126 m³ on Day 3, 2086 m³ on Day 4 and 2283m³ on Day 5. • Surface volume peaks at 7454 m³ on Day 8, peak surface area of 74 km² on Day 17. • The duration of the spill may extend up to 77 days. Offshore response operations will be feasible for the duration of the spill. Onshore response operations are predicted to commence on day 4, and extend to months 4-5. 	<p>The following statements identify the key parameters upon which response need is based:</p> <ul style="list-style-type: none"> • Surface hydrocarbons above threshold concentration (>50 g/m²) available for containment and recovery are predicted to be 5588 m³ on Day 1 and 5907 m³ on Day 2. Deterministic modelling predicts that surface hydrocarbons will drop below feasible response thresholds thereafter. • Surface volume peaks at 5907 m³ on Day 2 and surface area peaks at 36 km² on Day 2. • The spill will occur over 16 hours. Offshore response operations will continue for 2 days. Onshore response operations are predicted to commence on day 3, and extend to months 4-5.
<ul style="list-style-type: none"> • Support organisations will be required to provide specialist services (logistics services for mobilizing equipment, trained Offshore Supervisors and waste disposal) and/or resources (vessels, containment and recovery equipment, transfer pumping systems) and should be exercised regularly. • Plans, procedures and support documents need to be in place for Operational and Support functions. These should be reviewed and updated regularly. 	

In addition, a number of assumptions are required to estimate the response need for Containment and Recovery. These assumptions have been described in the table below.

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Table 5-9: Response Planning Assumptions – Containment and Recovery

Response Planning Assumptions	
Safety considerations	<p>Containment and recovery operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • high winds, waves and/or sea states • high ambient temperatures.
Technique	Predicted performance range (% of surface oil volume available predicted to be recovered by response technique)
Containment and recovery	Lower 5%
	Upper 10%
	<p>The predicted performance range for containment and recovery is based on;</p> <ul style="list-style-type: none"> • remaining surface oil available for containment and recovery following weathering • operational monitoring observing surface oil at minimum BAOAC 4 (discontinuous true oil colour) or BAOAC 5 (continuous true oil colour) • safe for deployment, within range of vessels and aircraft • encounter rate of approximately 50-75% (50-25% of surface coverage is not surface oil)
Response Capability details	
Containment and recovery operation	<p>One containment and recovery operation includes;</p> <ul style="list-style-type: none"> • 2 x suitable vessels (vessel specifications as per Marine Operations Plan) • 1 x boom system (min 800 mm overall height and approximately 200 m length) with all required ancillaries) <p>or</p> <ul style="list-style-type: none"> • 1 x suitable vessel (vessel specifications as per Marine Operations Plan) • 1 x single ship system (min 800 mm overall height and approximately 200 m length) with all required ancillaries) <p>and</p> <ul style="list-style-type: none"> • 1 x skimmer (min 20 m³/hr) with all required ancillaries • Temporary storage (min 100 m³) • 1-2 x trained supervisor per operation • 8-10 x support personnel per operation
Physical properties	<p>Surface Threshold</p> <ul style="list-style-type: none"> • Lower – 50 g/m² (equates to 100 g/m² with approximately 50% coverage and/or 200 g/m² with approximately 25% coverage) <ul style="list-style-type: none"> - BAOAC 4 – discontinuous true oil colour – lower threshold 50 g/m² • Optimum – 100 g/m² (equates to >100 g/m² with approximately 100% coverage and/or 200 g/m² with approximately 50% coverage) <ul style="list-style-type: none"> - BAOAC 5 – Continuous true oil colour – lower threshold 200 g/m²
Expected effectiveness	<ul style="list-style-type: none"> • One containment and recovery operation is expected to be able to contain and recover approximately 22.5 – 67.5 m³ per day (10 hr operation) includes one (1) change out of temporary waste storage equipment (if required) • Based on the following assumptions: <ul style="list-style-type: none"> - boom system with 70 m opening = 0.07 km - vessel moving at 0.7 kn = 1.3 km/h - area covered per hour = 0.07 km x 1.3 km = 0.09 km² - area covered per day = 0.09 km² x 10 hours = 0.9 km² / day - recovery per day (low) = 0.9 km² x 50 g/m² x 50% coverage = 22.5 m³/ 10-hour day - recovery per day (high) = 0.9 km² x 100 g/m² x 75% = 67.5 m³/ 10-hour day <p>Increased surface oil concentration may result in increased recovery capacity providing other conditions and oil properties remain suitable for containment and recovery. For planning purposes, conservative concentrations outlined above have been used.</p>

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5.6.2 Environmental performance based on need

Table 5-10: Environmental Performance – Containment and Recovery

Environmental Performance Outcome		To reduce consequences to surface and shoreline receptors.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
20	Vessel-based recovery systems	20.1	Woodside maintains an integrated fleet of vessels, including vessels with at least 10 t bollard pull. Additional vessels can be sourced through existing contracts/frame agreements	1, 3A, 3B, 3C, 4
		20.2	2 x containment and recovery operations would be deployed by day 2.	
		20.3	2 additional containment and recovery operations using 3 rd party provider resources would be deployed by day 4.	
		20.4	Each operation will have up to 100m ³ internal or added of liquid waste storage onboard.	
21	Response teams	21.1	Deployment of 2 x containment and recovery teams would be available by day 2 and 2 x containment and recovery teams available by day 4.	1, 2, 3A, 3B, 3C, 4
		21.2	Deployment team will be comprised of: <ul style="list-style-type: none"> • 1-2 trained specialists per operation • 4-6 personnel for support • Personnel sourced through resource pool. 	1, 2, 3B, 4
		21.3	Teams will segregate liquid and solid wastes at the earliest opportunity.	
		21.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
22	Response systems	22.1	Rapid sweep systems and active boom systems to be prioritised for mobilisation in the event of a response.	1, 3C
23	Management of Environmental Impact of the response risks	23.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified	1
		23.2	The boom will be monitored and maintained to ensure trapped fauna are released as early as possible, with Containment and Recovery activities occurring in daylight hours only.	

Woodside has assessed the resulting containment and recovery capability against the WCCS and surface release scenario.

- The efficiency of this response technique will decrease significantly as the slick moves, breaks into wind-rows and weathers resulting in less surface concentrations available for effective offshore recovery.
- Surface concentration and mass vary for each time step based on spreading and weathering algorithms within the model. Woodside has reviewed the deterministic modelling data based on the response planning assumptions outlined above to determine the response need and required capability.
- For the loss of well containment (MEE-01) scenario, deterministic modelling predicts that there will be sufficient volumes (peak surface area of 74 km² on Day 17) of surface hydrocarbons for containment and recovery operations to recover.

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- For the topside cargo loss of containment (MEE-05) scenario, deterministic modelling predicts that there will be insufficient volumes (peak surface area of 36 km² on Day 2) of surface hydrocarbons for containment and recovery operations to recover beyond Day 2. Given mobilisation of containment and recovery equipment isn't expected until Day 2, the hydrocarbon spill is expected to disperse and likely be below the 50 g/m² minimum concentration threshold before a response can be undertaken. The NEBA therefore determined that Containment and recovery was not practicable for this scenario and will not provide a net environmental benefit compared to natural weathering to occur.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.6.

5.7 Shoreline Protection and Deflection

The placement of containment, protection or deflection booms on and near a shoreline is a response technique to reduce the potential volume of hydrocarbons contacting or spreading along shorelines, which may reduce the scale of shoreline clean-up. Hydrocarbons contained by the booms would be collected where practicable.

Shorelines would be protected where accessible via vessel or shore. Where hydrocarbon contact has already occurred, there may still be value in deploying protection equipment to limit further accumulations and preventing remobilisation of stranded hydrocarbons.

Shoreline protection and deflection equipment would be mobilised to selected locations, where the following conditions were met:

- Sea-states and hydrocarbon characteristics are safe to deploy protection and deflection measures,
- Oil trajectory has been identified as heading towards identified RPAs.

5.7.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based: For MEE-01:

- The shortest timeframe that shoreline contact from floating oil above the 10 g/m² threshold is predicted to be 1.3 days at Ningaloo Coast WH.
- Pre-emptive assessment and shoreline assessments (OM04 and OM05) will be mobilised prior to shoreline contact at 100 g/m², which occurs on day 3.5 at Murion Islands and Murion Island MMA.
- Following pre-emptive assessments of sensitive receptors at risk, and in agreement of prioritisation with WA DoT (if a Level 2/3 incident and within State Waters), protection and deflection operations would commence until agreed termination criteria are reached.
- The duration of the spill may be up to 77 days with shoreline response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

For MEE-05:

- The shortest timeframe that shoreline contact from floating oil above the 10 g/m² threshold is predicted to be 1.4 days at Ningaloo Coast WH.
- Pre-emptive assessment and shoreline assessments (OM04 and OM05) will be mobilised prior to shoreline contact at 100 g/m², which occurs on day 2.5 at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH.
- Following pre-emptive assessments of sensitive receptors at risk, and in agreement of prioritisation with WA DoT (if a Level 2/3 incident and within State Waters), protection and deflection operations would commence until agreed termination criteria are reached.
- The duration of the spill may be up to 2 days with shoreline response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

All scenarios:

- Arrangements for support organisations who provide specialist services (trained personnel, protection and deflection equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents need to be in place for Operational and Support Sections. These should be reviewed and updated regularly.

In addition, a number of assumptions are required to estimate the response need for Shoreline Protection and Deflection. These assumptions have been described in the table below.

Table 5-11: Response Planning Assumptions – Shoreline Protection and Deflection

Response Planning Assumptions	
Safety considerations	<p>Shoreline protection and deflection operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • safe for deployment and conditions within range of vessels • high ambient temperatures.
Shoreline Protection and Deflection	<ul style="list-style-type: none"> • One Shoreline Protection and Deflection operation may include; • Quantity of shoreline sealing boom (as outlined in TRP) • Quantity of fence or curtain boom (as outlined in TRP) • 1-2 x trained supervisors • 8-10 x personnel/ labour hire <p>Specific details of each operation would be tailored to the Tactical Response Plan implemented (where available).</p>

5.7.2 Environmental performance based on need

Table 5-12: Environmental Performance – Shoreline protection and deflection

Environmental Performance Outcome		To stop hydrocarbons encountering particularly sensitive areas		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
24	Response teams	24.1	In liaison with WA DoT (for Level 2/3 incidents), relevant Tactical Response Plans (TRPs) will be identified in the First Strike plan for activation.	1, 3A, 3C, 4
		24.2	In liaison with WA DoT (for Level 2/3 incidents), mobilise teams to RPAs within 48 hours a predicted impact. Teams to contaminated RPAs comprised of: <ul style="list-style-type: none"> • 1-2 trained specialists per operation • 8-10 personnel/labour hire • Personnel sourced through resource pool. 	1, 2, 3B, 3C, 4
		24.3	In liaison with WA DoT (for Level 2/3 incidents), 1 x operation mobilised to each identified RPA. Expected to be 1 x RPAs within 72 hours (MEE-05) or 2 x RPAs within 96 hours (MEE-01). (operation as detailed above)	1, 3A, 3B, 4
		24.4	24 x trained personnel available within 96 hours of impact. Sourced through resource pool.	1, 2, 3A, 3B, 3C, 4
		24.5	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
		24.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline operations: <ul style="list-style-type: none"> • All personnel in a response will receive an operational/safety briefing before commencing operations • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel 	1, 3B, 4
25	Response equipment	25.1	Equipment mobilised from closest location within 48 hours of a predicted impact.	1, 3A, 3C, 4
		25.2	Supplementary equipment mobilised from State, AMOSC, AMSA stockpiles within 96 hours.	1, 3C, 3D, 4
		25.3	Supplementary equipment mobilised from OSRL within 96 hours.	
		25.4	Woodside maintains integrated fleet of vessels. Additional vessels can be sourced through existing contracts/frame agreements	1, 3A, 3C, 4
26	Management of Environmental Impact of the response risks	26.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified	1
		26.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	

The resulting shoreline protection and deflection capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline protection and deflection at identified RPAs.

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Under optimal conditions, during the subsea and surface releases the capability available exceeds the need identified. It indicates that, the shoreline protection and deflection capability have the following expected performance:

- Deterministic modelling scenarios indicate that first shoreline impact at Murion Islands and Murion Island MMA within 3.5 days for the MEE-01 scenario and at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH within 2.5 days for the MEE-05 scenario.
- Existing capability allows for mobilization and deployment of 1 shoreline protection operations (approximately 10-12 responders) within 48 hours (if required). Given shoreline contact at RPAs is not predicted until Day 3 at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH, the existing capability is considered sufficient to mobilise and deploy protection at RPAs prior to hydrocarbon contact, guided by the ongoing operational monitoring.
- The most significant constraint on expanding the scale of response operations is the availability of accommodation and transport services in the region between Exmouth and Port Hedland, and the management of response generated waste. From previous assessment of accommodation in this region, Woodside estimates that current accommodation can cater for a range of 500-700 personnel per day for an ongoing operation.
- TRPs have been developed for all identified RPAs excepting international locations.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.7.

5.8 Shoreline Clean-up

Shoreline clean-up may be undertaken using a broad range of techniques when floating hydrocarbons contact shorelines. The timing, location and extent of shoreline clean-up activities can vary from one scenario to another, depending on the hydrocarbon type, sensitivities and values contacted, shoreline type and access, degree of oiling, and area oiled.

Shoreline clean-up is typically undertaken as a three-phase process:

- phase one (gross contamination removal) involving the collection of bulk oil, either floating against the shoreline or stranded on it
- phase two (moderate to heavy contamination removal) involving removal or in-situ treatment of shoreline substrates such as sand or pebble beaches, and
- phase three (final treatment or polishing) involving removal of the remaining residues of oil.

As phase one typically involves recovery of floating and pooled oil, and phase three removes minor volumes, they have not been considered in the assessment of response need for the scenarios identified.

The *Shoreline Clean-up Operational Plan* details the mobilisation and resource requirements for a shoreline clean-up operation including the logistics, support and facility arrangements to manage the movement of personnel and resources.

The *Shoreline Clean-up Operational Plan* includes the process for the IMT to mobilise resources depending on the nature and scale of the spill. Woodside would activate and mobilise trained and competent personnel in shoreline assessment before or following shoreline contact at response thresholds.

Shoreline clean-up consists of different manual and mechanical recovery techniques to remove hydrocarbons and contaminated debris from a shoreline; this is to minimise ongoing environmental contamination and impact. The National Plan also provides guidance on shoreline clean-up techniques as outlined in National Plan Guidance *Response assessment and termination of cleaning for oil contaminated foreshores* (AMSA 2015).

5.8.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

MEE-01:

- Deterministic modelling predicts the minimum time for shoreline accumulation $>100 \text{ g/m}^2$ is approximately 3.5 days at Muiron Island and Murion Island MMA.
- Deterministic modelling of the maximum shoreline accumulation scenario predicts that shoreline accumulation peaks at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH ($21,339 \text{ m}^3$) on Day 30.
- The duration of the spill may be up to 77 days with shoreline response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

MEE-02:

- Deterministic modelling predicts the minimum time for shoreline accumulation $>100 \text{ g/m}^2$ is approximately 2.5 days at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH.
- Deterministic modelling of the maximum shoreline accumulation scenario predicts that shoreline accumulation peaks at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH ($3,069 \text{ m}^3$) on Day 2.5.
- The duration of the spill may be up to 2 days with shoreline response operations extending to 4-5 months based on the predicted time to complete shoreline clean-up operations.

All scenarios:

- Pre-emptive assessment and shoreline assessments (OM04 and OM05) will be mobilised prior to shoreline contact.
- Following Shoreline Assessment and agreement of prioritisation with WA Department of Transport, clean-up operations would commence until agreed termination criteria are reached.
- Arrangements for support organisations who provide specialist services (trained personnel, labour hire, shoreline clean-up, and site management equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents should be in developed and in place for Operational and Support Sections. These should be reviewed and updated regularly.

In addition, a number of assumptions are required to estimate the response need for shoreline clean-up. These assumptions have been described in the table below.

Table 5-13: Response Planning Assumptions – Shoreline Clean-up

Response planning assumptions: Shoreline clean-up	
Safety considerations	Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include: <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
Manual shoreline clean-up operation (Phase 2)	One, manual shoreline clean-up operation (Phase 2) may include: <ul style="list-style-type: none"> • 1–2 x trained supervisor • 8–10 x personnel/ labour hire • Supporting equipment for manual clean-up including rakes, shovels, plastic bags etc.
Physical properties	Surface Threshold <ul style="list-style-type: none"> • Lower – 100 g/m²–100% coverage of 'stain' – cannot be scratched off easily on coarse sediments or bedrock <ul style="list-style-type: none"> - Expected trigger to undertake detailed shoreline survey • Optimum – 250 g/m²– 25% coverage of 'coat' – can be scratched off with a fingernail on coarse sediments <ul style="list-style-type: none"> - Expected trigger to commence clean-up operations
Efficiency (m³ oil recovered per person per day)	Manual shoreline clean-up (Phase 2) – approximately 0.25–1 m ³ oil recovered per person per 10 hour day is based on moderate to high coverage of oil (100 g/m ² – 1000 g/m ²) with manual removal using shovels/rakes, etc. from studies of previous response operations and exercises.

Table 5-14: Shoreline Clean-up techniques and recommendations

Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Natural recovery	Allowing shoreline to self-clean; no intervention undertaken.	<p>Remote and inaccessible shorelines for personnel, vehicles and machinery.</p> <p>Other clean-up techniques may cause more damage than allowing the shoreline to naturally recover.</p> <p>Natural recovery may be recommended for areas with mangroves and coral reefs due to their sensitivity to disturbance from other shoreline clean-up techniques.</p> <p>High-energy shorelines: where natural removal rates are high, and hydrocarbons will be removed over a short timeframe.</p>	<p>Low-energy shorelines: these areas tend to be where hydrocarbon accumulates and penetrates soil and substrates.</p>	<p>May be employed, if the operational NEBA identifies that other clean-up techniques will have a negligible or negative environmental impact on the shoreline.</p> <p>May also be used for buried or reworked hydrocarbons where other techniques may not recover these.</p>
Manual recovery	<p>Use of manpower to collect hydrocarbons from the shoreline.</p> <p>Use of this form of clean-up is based on type of shoreline.</p>	<p>Remote and inaccessible shorelines for vehicles and machinery.</p> <p>Areas where shorelines may not be accessible by vehicles or machinery and personnel can recover hydrocarbons manually.</p> <p>Where hydrocarbons have formed semi-solid to solid masses that can be picked up manually.</p> <p>Areas where nesting and breeding fauna cannot or should not be disturbed.</p>	<p>Coral reef or other sensitive intertidal habitats, as the presence of a response may cause more environmental damage than allowing them to recover naturally.</p> <p>For some high-energy shorelines such as cliffs and sea walls, manual recovery may not be recommended as it may pose a safety threat to responders.</p>	<p>May be used for sandy shorelines. Buried hydrocarbons may be recovered using shovels into small carry waste bags, but where possible the shoreline should be left to naturally recover to prevent any further burying of hydrocarbons (from general clean-up activities).</p>

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Sorbents	Sorbent boom or pads used to recover fluid or sticky hydrocarbons. Can also be used after manual clean-up to remove any residues from crevices or from vegetation.	<p>When hydrocarbons are free-floating close to shore or stranded onshore.</p> <p>As a secondary treatment method after hydrocarbon removal and in sensitive areas where access is restricted.</p>	Access for deploying and retrieving sorbents should not be through soft or sensitive habitats or affect wildlife.	<p>Used for rocky shorelines.</p> <p>Sorbent boom will allow for deployment from small shallow draught vessels, which will allow deployment close to shore where water is sheltered and to aid recovery.</p> <p>Sorbents will create more solid waste compared with manual clean-up, so will be limited to clean, rocky shorelines.</p>
Vacuum recovery, flushing, washing	The use of high volumes of low-pressure water, pumping and/or vacuuming to remove floating hydrocarbons accumulated at shorelines.	<p>Suited to rocky or pebble shores where flushing can remobilise hydrocarbons (to be broken up) and aid natural recovery.</p> <p>Any accessible shoreline type from land or water. May be mounted on barges for water-based operations, on trucks driven to the recovery area, or hand-carried to remote sites.</p> <p>Flushing and vacuum may be useful for rocky substrate.</p> <p>Medium- to high-energy shorelines where natural removal rates are moderate to high.</p> <p>Where flushed hydrocarbons can be recovered to prevent further oiling of shorelines.</p>	<p>Areas of pooled light, fresh hydrocarbons may not be recoverable via vacuum due to fire and explosion risks.</p> <p>Shorelines with limited access.</p> <p>Flushing and washing not recommended for loose sediments.</p> <p>High-energy shorelines where access is restricted.</p>	High volume low pressure (HVLV) flushing and washing into a sorbent boom could be used for rocky substrate, if protection booming has been unsuccessful in deflecting hydrocarbons from these areas.

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Sediment reworking	Movement of sediment to surf to allow hydrocarbons to be removed from the sediment and move sand via heavy machinery.	When hydrocarbons have penetrated below the surface. Recommended for pebble/cobble shoreline types. Medium- to high-energy shorelines where natural removal rates are moderate to high.	Low-energy shorelines as the movement of substrate will not accelerate the natural cleaning process. Areas used by fauna which could potentially be affected by remobilised hydrocarbons.	Use of wave action to clean sediment: appropriate for sandy beaches where light machinery is accessible.
Vegetation cutting	Cutting vegetation to prevent oiling and reduce volume of waste and debris.	Vegetation cutting may be recommended to reduce the potential for wildlife being oiled. Where oiling is restricted to fringing vegetation.	Access in bird-nesting areas should be restricted during nesting seasons. Areas of slow-growing vegetation.	May be used on shorelines where vegetation can be safely cleared to reduce oiling.
Cleaning agents (OSCA)	Application of chemicals such as dispersants to remove hydrocarbons.	May be used for manmade structures and where public safety may be a concern.	Natural substrates and in low-energy environments where sufficient mixing energy is not present.	Not recommended for shorelines. Could be used for manmade structures such as boat ramps.

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5.8.2 Environmental performance based on need

Table 5-15: Environmental Performance – Shoreline Clean-up

Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.	
Control measure	Performance Standard		Measurement Criteria (Section 5.13)
27 Shoreline responders	27.1	In liaison with WA DoT (for Level 2/3 incidents), deployment of up to 15 x shoreline clean-up teams to contaminated RPAs comprised of: <ul style="list-style-type: none"> • 1-2 trained specialists per operation • 8-10 personnel/labour hire • Personnel sourced through resource pool within 48 hours of request from the IMT. 	1, 2, 3A, 3B, 3C, 4
	27.2	Relevant Tactical Response Plans (TRPs) will be identified in the first strike plan for activation within 12 hours prior to a predicted impact.	1, 3A, 3C, 4
	27.3	Clean-up operations for shorelines in line with results and recommendations from SCAT outputs	1, 3A, 3B
	27.4	All shoreline clean-up sites will be zoned and marked before clean-up operations commence.	
	27.5	In liaison with WA DoT (for Level 2/3 incidents), mobilise and deploy up to 20 x shoreline clean-up operations within 96 hours following release.	1, 2, 3A, 3C, 4
	27.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline clean-up operations: <ul style="list-style-type: none"> • All personnel in a response will receive an operational/safety briefing before commencing operations. • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel. 	1, 3B, 4
	27.7	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
28 Shoreline clean up equipment	28.1	Contract in place with 3 rd party providers to access equipment.	1, 3A, 3C, 4
	28.2	Equipment mobilised from closest stockpile (detail in activity specific ALARP) within 48 hours.	
	28.3	Supplementary equipment mobilised from State, AMOSC, AMSA stockpiles within 96 hours.	1, 3C, 3D, 4
	28.4	Supplementary equipment mobilised from OSRL within 96 hours.	
29 Management of Environmental Impact of the response risks	29.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified.	1
	29.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines.	
	29.3	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves.	

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Environmental Performance Outcome	To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure	Performance Standard		Measurement Criteria (Section 5.13)
	29.4	Removal of vegetation will be limited to moderately or heavily oiled vegetation	
	29.5	Oversight by trained personnel who are aware of the risks	
	29.6	Trained unit leader's brief personnel of the risks prior to operations	

The resulting shoreline clean-up capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the PAP.

Whilst modelling predicts shoreline contact from day 2.5 (MEE-05) and 3.5 (MEE-01), Woodside is satisfied that the current capability is managing risks and impacts to ALARP.

The capability available meets the need identified for this activity. The shoreline clean-up capability has the following expected performance (if required during a response):

- Woodside has the capacity to mobilise and deploy up to 12-15 shoreline clean-up teams (approximately 100-180 responders in total) by within 48 hours at up to 2 RPAs using existing labour hire contracts with Woodside, AMOSC, Core Group, AMSA, WA DoT and OSRL team leads.
- Assessment of response capability indicates that for a worst-case scenario the actual teams required would meet the available capability and the response would be extend for 4-5 months.
- Woodside has considered deployment of additional personnel to undertake shoreline clean-up operations but is satisfied that the identified level of resource is balanced between cost, time and effectiveness. The most significant constraint on expanding the scale of response operations is the availability of accommodation and transport services in the region between Exmouth and Port Hedland and management of response generated waste. From previous assessment of accommodation in this region, Woodside estimates that current accommodation can cater for a range of 500-700 personnel per day for an ongoing operation.
- TRPs have been developed for all identified RPAs excepting international locations.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.8

5.9 Oiled wildlife response (including hazing)

Oiled wildlife response (OWR) includes wildlife surveillance/ reconnaissance, wildlife hazing, pre-emptive capture, and the capture, cleaning, treatment, and rehabilitation of animals that have been oiled. In addition, it includes the collection, post-mortem examination, and disposal of deceased animals that have succumbed to the effects of oiling.

For a petroleum activity spill in Commonwealth waters, Woodside is required to take the role of Control Agency and will be responsible for the wildlife response. In such circumstances, Woodside would implement a response in accordance with the *Oiled Wildlife Operational Plan*, the WA Oiled Wildlife Response Plan (WAOWRP) (DBCA, 2022a) and the WA OWR Manual (DBCA, 2022b). The *Oiled Wildlife Operational Plan* includes the process for the IMT to mobilise resources depending on the nature and scale of the spill. Oiled wildlife operations would be implemented with advice and assistance from the Oiled Wildlife Advisor from the Department of Biodiversity, Conservation and Attractions (DBCA).

The key plan for OWR in WA is the WAOWRP (DBCA, 2022a). The WAOWRP establishes the framework for preparing and responding to potential or actual wildlife impacts during a spill and sets out the management arrangements for implementing an OWR in conjunction with the DoT *State Hazard Plan – Maritime Environmental Emergencies* (SHP-MEE). It is the responsibility of DBCA to administer the WAOWRP under the direction of the DoT. The WA OWR Manual (DBCA, 2022b) supports, and should be used in conjunction with, the WAOWRP. The purpose of the WA OWR Manual is to standardise the operating procedures, protocols and processes for an OWR during a spill event in WA waters, and to create alignment between the wildlife response processes and the overall incident response (DBCA, 2022b).

If a spill occurs in WA State waters or enters State waters, DBCA is the Jurisdictional Authority for wildlife, and for level 2/3 spills, will also lead the oiled wildlife response under the control of the DoT. DBCA is the State Government agency responsible for administering the *Biodiversity Conservation Act 2016 (BC Act)*, which has provisions for authorising activities that affect wildlife.

For level 1 spills in State waters, Woodside is required to take the role of Control Agency, including for wildlife response. It is, however, also an expectation that for level 2/3 petroleum activity spills, Woodside will conduct the initial first-strike response actions for wildlife response and continue to manage those operations until DBCA is activated as the lead agency for wildlife response and formal handover occurs. Following formal handover, Woodside will function as a support organisation for the OWR and will be expected to continue to provide planning and resources as required.

Woodside retains specialist personnel to support and manage oiled wildlife operations, including trained and competent responders for deployment in Exmouth and Dampier. Additional personnel would be sourced through Woodside's arrangements to support an oiled wildlife response as required.

5.9.1 Response need based on predicted consequence parameters

Wildlife Response Priority Areas and Assessment of Wildlife Impact

French-McCay et al. (2002), based on a review of existing literature at the time, determined lethal thresholds for floating and shoreline oil for the external coating of wildlife to be 10 g/m² for floating, and 100 g/m² for shoreline accumulation. It should however be noted that toxicity thresholds for wildlife are likely to be highly variable due to differences in species sensitivity, type of hydrocarbon, type of exposure (ingestion or external oiling), life-stage, and on-water versus land habitat.

For planning purposes, determination of wildlife priority protection areas is based on stochastic modelling of the worst-case spill scenarios at 10 g/m² for floating, and 100 g/m² for shoreline

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accumulation (acknowledging that impacts to wildlife may occur at lower concentrations), the known presence of wildlife, and in consideration of the following:

- Presence of high densities of wildlife, threatened species, and/or endemic species with high site fidelity
- Greatest probability of shoreline accumulation
- Shortest timeframe to contact

Table 5-16 outlines the wildlife response priority areas for this activity. At the time of a spill, identification and allocation of wildlife response priority areas should also take into consideration any key biological activities. Additional detail regarding species and their key biological activities within the vicinity of the PAP are described in Section 4 of the Ngujima-Yin FPSO Operations.

For WA, the Pilbara and Kimberley Regional Oiled Wildlife Plans (DBCA [formerly Department of Parks and Wildlife], 2014) provide useful information relating to wildlife priority response areas in their respective regions.

The following statements identify the key parameters upon which a wildlife response need can be based:

- Deterministic modelling predicts floating oil at $>10 \text{ g/m}^2$ is predicted at Ningaloo Coast WH within 1.3 days for MEE-01 and 1.4 days for MEE-02.
- Deterministic modelling predicts the minimum time for shoreline accumulation $>100 \text{ g/m}^2$ is approximately 3.5 days at Muiron Island and Murion Island MMA for MEE-01 and 2.5 days at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH for MEE-05.
- At sea there are likely to be low numbers of at risk or impacted wildlife, and limited opportunities to rescue wildlife, given the distribution and behaviour of animals in the open marine environment. At sea, continued wildlife reconnaissance, carcass recovery, sampling of carcasses that cannot be retrieved and scientific monitoring are more likely to be the focus of response efforts.
- As the surface oil approaches shorelines and as oil accumulates on the shoreline, potential for oiled wildlife impacts are likely to increase as well as opportunities to rescue wildlife.
- It is estimated that the wildlife impact would be high, as defined in the WAOWRP (DBCA, 2022a) (**Table 5-17**).

Table 5-17: WAOWRP Guide for rating wildlife impact of an oil spill (DBCA, 2022)

Wildlife Impact Rating	Low	Medium	High
What is the likely duration of the wildlife response?	<3 days	3-10 days	>10 days
What is the likely total intake of animals?	<10	11-25	>25
What is the likely daily intake of animals?	0-2	2-5	>5
Are threatened species, or species protected by treaty, likely to be impacted, either directly or by pollution of habitat or breeding areas?	No	Yes – possible	Yes – likely
Is there likely to be a requirement for building primary care facility for treatment, cleaning and rehabilitation?	No	Yes – possible	Yes – likely

Tactics

Where there is imminent or actual impact to wildlife, Woodside will activate the Wildlife Division and follow the oiled wildlife incident management framework and implementation plan outlined in the Woodside *Oiled Wildlife Operational Plan*.

In Commonwealth waters, Woodside will be responsible for the planning and implementation of the OWR in its entirety. Noting that at sea, and in comparison to the shoreline, there are likely to be less wildlife impacted by an oil spill and limited opportunities to rescue wildlife, given the distribution and behaviour of animals in the open marine environment. At sea, continued wildlife reconnaissance, carcass recovery, sampling of carcasses that cannot be retrieved and integration with scientific monitoring are more likely to be the focus of the OWR.

In State waters, Woodside will conduct the initial first-strike response actions for wildlife and continue to manage those operations until DBCA is activated as the lead agency for wildlife response and formal handover occurs. Following formal handover, Woodside will function as a support organisation for the OWR and will be expected to continue to provide planning and resources as required.

If a protracted response is likely, requiring preventative actions and/or wildlife rescue, and formal hand over to the Control Agency (in State waters) has not yet occurred, the Wildlife Division will be responsible for the development of the Wildlife Division portion of the IAP. Preventative actions, such as hazing, along with capture, intake and treatment require a higher degree of planning, approval (licenses) and skills and will be planned for and carried out under the IAP as outlined in the *Oiled Wildlife Operational Plan* and in accordance with the WAOWRP (DBCA, 2022a) and WA OWR Manual (DBAC, 20022b).

The oiled wildlife response technique targets key wildlife populations at risk within Commonwealth open waters and the nearshore waters as described in **Section 4** of the EP.

5.9.2 Environmental performance based on need

Table 5-18: Environmental Performance – Oiled Wildlife Response

Environmental Performance Outcome		Oiled Wildlife Response is conducted in accordance with the Western Australian Oiled Wildlife Response Plan (WAOWRP, 2022) to ensure it is conducted in accordance with legislative requirements to house, release or euthanise wildlife under the <i>Biodiversity Conservation Act 2016</i> .		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
30	Wildlife response arrangements	30.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations	1, 3A, 4
		30.2	Initiate a wildlife first strike response 96 hours prior to confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DBCA.	1
31	Wildlife response equipment	31.1	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 3D, 4
		31.2	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 3D, 4
32	Wildlife responders	32.1	2 x Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an Oiled Wildlife Response Management course.	1, 2, 3B
		32.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists.	1, 3B, 3C
		32.3	Maintain contract with OSRL to access additional trained oiled wildlife response specialists.	1, 3B, 3C
		32.4	Open communication line to be maintained between IMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
33	Management of environmental impacts of response risks	33.1	Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA, and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan.	1

The resulting wildlife response capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to response at identified RPAs.

Under optimal conditions, during the subsea or surface release, the capability available meets the need identified. It indicates that, the wildlife response capability has the following expected performance:

- Undertake OWR first strike response including mobilisation of operational monitoring (OM01-05) to identify wildlife and RPAs contacted or at imminent risk of contact by hydrocarbons.
- Availability and mobilisation of trained OWR personnel to supervise OWR activities.

Access to wildlife resources (personnel and equipment) to meet the needs where there are medium or high levels of wildlife impact.

5.10 Waste Management

Waste management is considered a support technique to wildlife response, containment and recovery and shoreline clean-up. Waste generated and collected during the response that will require handling, management and disposal may consist of:

- Liquids (hydrocarbons and contaminated liquids) collected during containment and recovery, shoreline clean-up and wildlife response, and/or
- Solids/semi-solids (oily solids, garbage, contaminated materials) and debris (e.g. seaweed, sand, woods, and plastics) collected during containment and recovery, shoreline clean-up and wildlife response.

Expected waste volumes during an event are likely to vary depending on oil type, volume released, response techniques employed and how weathering of hydrocarbons. Waste management, handling and capacity should be scalable to ensure continuous response operations can be maintained.

All waste management activities will follow the Environment Protection (Controlled Waste) Regulations 2004 and the waste will be managed to minimise final disposal volumes. Waste treatment techniques will consider contaminated solids treatment to allow disposal to landfill and solids with high concentrations of hydrocarbon will be treated and recycled where possible or used in clean fill if suitable.

The waste products would be transported from response locations to the nearest suitable staging area/waste transfer station for treatment, disposal or recycling. Waste will be transferred with appropriately licensed vehicles. Containers will be available for temporary waste storage and will be:

- labelled with the waste type
- provided with appropriate lids to prevent waste being blown overboard
- banded if storing liquid wastes.
- processes will be in place for transfers of bulk liquid wastes and include:
 - inspection of transfer hose undertaken prior to transfer
 - watchman equipped with radio visually monitors loading hose during transfer
 - tank gauges monitored throughout operation to prevent overflow

The *Oil Spill Preparedness Waste Management Support Plan* details the procedures, capability and capacity in place between Woodside and its primary waste services contractor to manage waste volumes generated from response activities.

5.10.1 Response need based on predicted consequence parameters

Table 5-19: Response Planning Assumptions – Waste Management

Response planning assumptions: Waste management	
Waste loading per m ³ oil recovered (multiplier)	Containment and Recovery – approximately 10x multiplier for oily waste generated by containment and recovery operations.
	Shoreline clean-up (manual) – approximately 5-10x multiplier for oily solid and liquid wastes generated by manual clean-up.
	Oiled wildlife response – approximately 1 m ³ of oily solid and liquid waste generated for each wildlife unit cleaned.

5.10.2 Environmental performance based on need

Table 5-20: Environmental Performance – Waste Management

Environmental Performance Outcome		To minimise further impacts, waste will be managed, tracked and disposed of in accordance with laws and regulations.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
34	Waste Management	34.1	Contract with waste management services for transport, removal, treatment and disposal of waste	1, 3A, 3B, 3C, 4
		34.2	Access to at least 675 m ³ of solid and liquid waste storage available within 4 days upon activation of 3 rd party contract.	
		34.3	Access to up to 16,800 m ³ by Week 2.	
		34.4	Decanting in accordance with National Plan guidelines to occur in daylight hours into the apex of the boom once hydrocarbon/water has settled in storage container.	
		34.5	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal.	
		34.6	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract.	
		34.7	Open communication line to be maintained between IMT and waste management services to ensure the reliable flow of accurate information between parties.	1, 3A, 3B
		34.8	Waste management to be conducted in accordance with Australian laws and regulations	1, 3A, 3B, 3C, 4
		34.9	Waste management services available and employed during response	
35	Management of environmental impacts of response risks	35.1	Teams will segregate liquid and solid wastes at the earliest opportunity.	1, 3A, 3B, 3C, 4

The resulting waste management capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to waste management at identified RPAs.

Noting that offshore surface dispersant application and containment and recovery operations are unlikely to be a significant part of the response for the WCCS, the greatest waste volumes are associated with shoreline clean-up activities, with a small contribution from potential shoreline protection and deflection.

The greatest volumes of oiled waste collected for MEE-01 may involve:

- A total of 1,816 m³ by Day 2 (predominantly from containment and recovery operations).
- A daily maximum of 11,910 m³ by Day 7 (from containment and recovery and shoreline clean-up operations) and a monthly peak of 258,461 m³ by month 3.

The greatest volumes of oiled waste collected for MEE-05 may involve:

- A total of 11,962 m³ by Day 2 (predominantly from containment and recovery operations).
- A daily maximum of 24,293 m³ by Day 3 (from shoreline clean-up operations).

This indicates that the waste management capability has the following expected performance:

- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.9.
- Woodside's waste contractor has access to approximately 120,000 m³ to treat overall waste volumes. It should be noted that this is the total volume for the contractor's available waste containers – in a real response, many of these containers would be emptied and reused multiple times thus increasing the total storage volume. The waste management requirements are within Woodside's and its service providers existing capacity.

5.11 Scientific monitoring

A scientific monitoring program (SMP) would be activated following a Level 2 or 3 unplanned hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. This would consider receptors at risk (ecological and socio-economic) for the entire predicted EMBA and in particular, any identified Pre-emptive Baseline Areas (PBAs) for the credible spill scenario(s) or other identified unplanned hydrocarbon releases associated with the Petroleum Activities Program (PAP) (refer to Table 2-1).

The outputs of the stochastic hydrocarbon spill modelling are used to assess the environmental risk, in terms of delineating which areas of the marine environment are predicted to be exposed to hydrocarbons exceeding environmental threshold concentrations (refer to Table 2-2, Section 2.3.1.1). The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA. The Petroleum Activities Program worst-case credible spill scenarios (MEE-01 and MEE-05) define the EMBA and are the basis of the SMP approach presented in this section.

It should be noted that the resulting SMP receptor locations differ from the Response Protection Areas (RPAs) presented and discussed in Section 3 of this document due to the applicability of different hydrocarbon threshold levels. The SMP would be informed by the data collected via the operational monitoring program (OMP) studies, however, it differs from the OMP in being a long-term program independent of, and not directing, the operational oil spill response or monitoring of impacts from response activities (refer to Section 5.1) for operational monitoring overview).

Key objectives of the Woodside oil spill scientific monitoring program are:

- Assess the extent, severity and persistence of the environmental impacts from the spill event; and
- Monitor subsequent recovery of impacted key species, habitats and ecosystems.

The SMP comprises ten targeted environmental monitoring programs to assess the condition of a range of physico-chemical (water and sediment) and biological (species and habitats) receptors including EPBC Act listed species, environmental values associated with protected areas and socio-economic values, such as fisheries. The ten SMPs are as follows:

- SM01 – Assessment of the presence, quantity and character of hydrocarbons in marine waters (linked to OM01 to OM03)
- SM02 – Assessment of the presence, quantity and character of hydrocarbons in marine sediments (linked to OM01 and OM05)
- SM03 – Assessment of impacts and recovery of subtidal and intertidal benthos
- SM04 – Assessment of impacts and recovery of mangroves/saltmarsh habitat
- SM05 – Assessment of impacts and recovery of seabird and shorebird populations
- SM06 – Assessment of impacts and recovery of nesting marine turtle populations
- SM07 – Assessment of impacts to pinniped colonies including haul-out site populations
- SM08 – Desktop assessment of impacts to other non-avian marine megafauna
- SM09 – Assessment of impacts and recovery of marine fish (linked to SM03)
- SM10 – Assessment of physiological impacts to important fish and shellfish species (fish health and seafood quality/safety) and recovery.

These SMPs have been designed to cover all key tropical and temperate habitats and species within Australian waters and broader, if required. A planning area for scientific monitoring is also identified to acknowledge potential hydrocarbon contact below the environmental

threshold concentrations and beyond the EMBA. This planning area has been set with reference to the entrained low exposure value of 10 ppb detailed in NOPSEMA Bulletin #1 Oil Spill Modelling (2019), as shown in Figure 5 1.

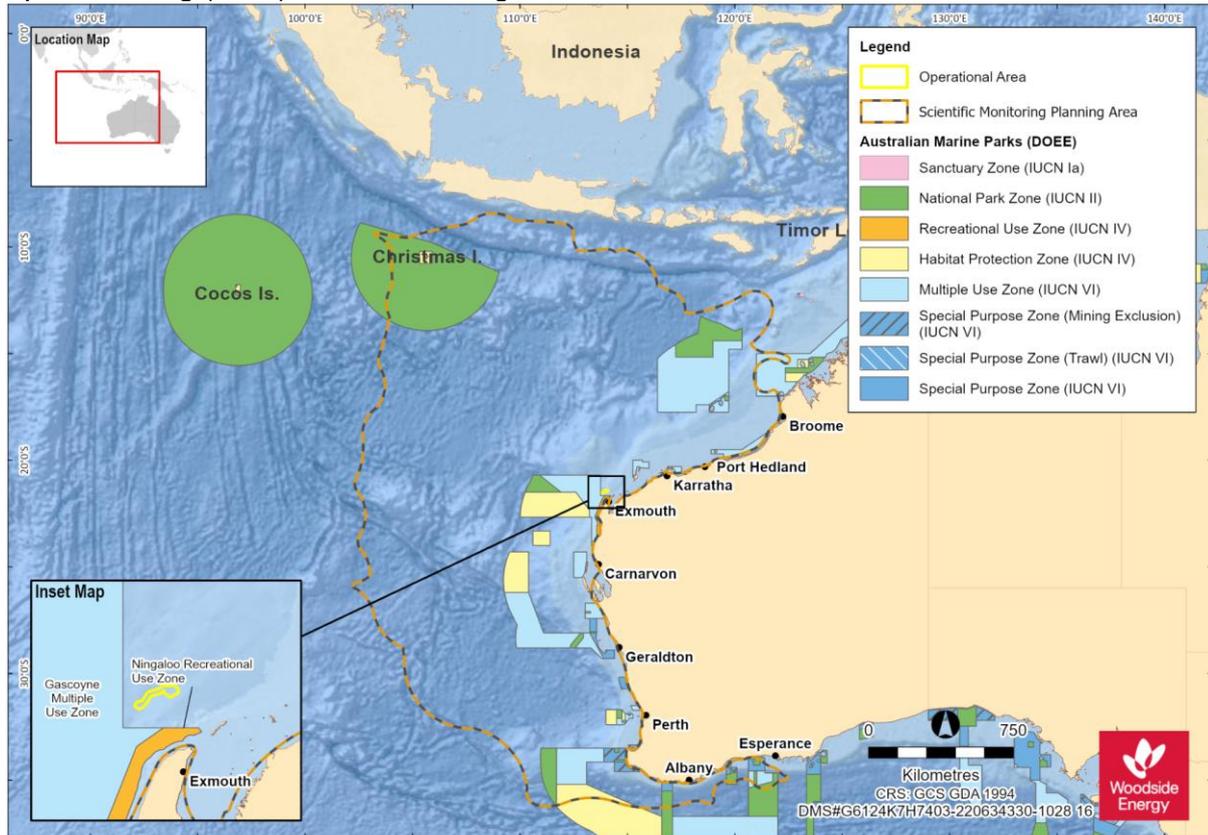


Figure 5-1: The planning area for scientific monitoring based on the area potentially contacted by the low (below ecological impact) entrained hydrocarbon threshold of 10 ppb in the event of the worst-case credible spill scenario (MEE-01 and MEE-05).

Please note that Figure 5-1 represents the overall combined extent of the oil spill model outputs based on a total of 100 replicate simulations over an annual period for MEE-01 and MEE-05 and therefore represents the largest spatial boundaries of 100 MEE-01 and MEE-05 oil spill combinations, not the spatial extent of a single MEE-01 and MEE-05 spill.

5.11.1 Scientific Monitoring Deployment Considerations

Scientific Monitoring Deployment Considerations	
Existing baseline studies for sensitive receptor locations predicted to be affected by a spill	<p>Pre-emptive Baseline Areas (PBAs) of the following two categories:</p> <ul style="list-style-type: none"> • PBAs within the predicted <10-day hydrocarbon contact time prediction: The approach is to conduct a desktop review of available and appropriate baseline data for key receptors for locations (if any) that are potentially impacted within 10 days of a spill and look to conduct baseline data collection to address data gaps and demonstrate spill response preparedness. Planning for baseline data acquisition is typically commenced pre-PAP and execution of studies undertaken with consideration of weather, receptor type, seasonality and temporal assessment requirements. • PBAs >10 days time to predicted hydrocarbon contact in the event of an unplanned hydrocarbon release from the PAP. SMP activation (as per the Ngujima-Yin FPSO Operations First Strike Plan) directs the SMP team to follow the steps outlined in the SMP Operational Plan. The steps include: checking the availability and type of existing baseline data, with particular reference to any Pre-emptive Baseline Areas (PBAs) identified as >10 days to hydrocarbon contact. Such information is used to identify response phase PBAs and plan for the activation of SMPs for pre-emptive (i.e. pre-hydrocarbon contact) baseline assessment.
Pre-emptive Baseline in the event of a spill	Activation of SMPs in order to collect baseline data at sensitive receptor locations with predicted hydrocarbon contact time >10 days (as documented in ANNEX C).
Survey platform suitability and availability	In the event of the SMP activation, suitable survey platforms are available and can support the range of equipment and data collection methodologies to be implemented in nearshore and offshore marine environments.
Trained personnel to implement SMPs suitable and available.	Access to trained personnel and the sampling equipment contracted for scientific monitoring via a dedicated scientific monitoring program standby contract.
Met-ocean conditions	<p>The following met-ocean conditions have been identified to implement SMPs:</p> <ul style="list-style-type: none"> • Waves <1 m for nearshore systems • Waves <1.5 m for offshore systems • Winds <20 knots • Daylight operations only <p>SMP implementation will be planned and managed according to HSE risk reviews and the met-ocean conditions on a day to day basis by SMP operations.</p>

5.11.2 Response planning assumptions

Response Planning Assumptions	
Pre-emptive Baseline Areas (PBAs)	<p>Pre-emptive Baseline Areas (PBAs) identified through the application of defined hydrocarbon impact thresholds during the Quantitative Spill Risk Assessment process and a consideration of the minimum time to contact at receptor locations fall into two categories:</p> <ul style="list-style-type: none"> • PBAs for which baseline data exist or are planned for and data collection may commence pre-PAP (≤ 10 days minimum time to contact).

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	<ul style="list-style-type: none"> • PBAs (> 10 days minimum time to contact) for which baseline data may be collected in the event of an unplanned hydrocarbon release. Response phase PBAs are prioritised for SMP activities due to vulnerability (i.e. time to contact and environmental sensitivity) to potential impacts from hydrocarbon contact and an identified need to acquire baseline data. <p>Time to hydrocarbon contact of >10 days has been identified as a minimum timeframe within which it is feasible to plan and mobilise applicable SMPs and commence collection of baseline (pre-hydrocarbon contact) data, in the event of an unplanned hydrocarbon release from the Ngujima-Yin facility.</p> <p>Pre-emptive Baseline Areas for the Ngujima-Yin facility are identified and listed in ANNEX D, Table D-1. The PBAs together with the situational awareness (from the operational monitoring) are the basis for the response phase SMP planning and implementation.</p>
Pre-Spill	<p>A review of existing baseline data for receptor locations (refer to Annex D) with potential to be contacted by surface, dissolved or entrained hydrocarbons at environmental thresholds within ≤10 days, relating to the credible hydrocarbon release for the Ngujima-Yin facility has identified the following:</p> <ul style="list-style-type: none"> • Commonwealth marine environment – offshore open ocean • Ningaloo Coast⁹ • Muiron Islands¹⁰ • Exmouth Gulf • Barrow, Montebello and Lowendal Island Groups • Rankin Bank • Pilbara Islands – Southern Island Group <p>Refer to Annex D, Table D-2 – baseline data available.</p> <p>Australian Marine Parks (AMPs) potentially affected includes:</p> <ul style="list-style-type: none"> • Gascoyne AMP • Ningaloo AMP • Shark Bay AMP • Montebello AMP <p>All the Australian Marine Parks (AMPs) are located in offshore waters where hydrocarbon exposure is possible from floating hydrocarbons (on surface waters) and in the upper water column (0-20 m depth range, approximately).</p>
In the Event of a Spill	<p>Receptor locations with >10 days to hydrocarbon contact, as well as the wider area, will be investigated and identified by the SMP team (in the Environment Unit of the CIMT) as the spill event unfolds and as the situational awareness provided by the OMPs permits delineation of the spill affected area (for example, updates to the spill trajectory tracking). The full list is presented in Annex D, based on the PAP credible spill scenario(s) (Table 2-1).</p> <p>To address the initial focus in a response phase SMP planning situation, the following receptors have been identified:</p> <ul style="list-style-type: none"> • Middle Pilbara Island Group • Northern Pilbara Island Group • Dampier Archipelago e.g. Rosemary Island • Carnarvon Canyon AMP • Shark Bay barrier islands (including Bernier and Dorre Islands) <p>The full list of receptor locations predicted to be contacted >10 days are included in Appendix D, Table D-2.</p>

⁹ Ningaloo Coast includes the WHA, State Marine Park

¹⁰ Muiron Islands includes the WHA and State Marine Management Area

	<p>The unfolding spill affected area predictions and confirmation of appropriate baseline data will determine the selection of receptor locations and SMPs to be activated in order to gather pre-emptive (pre-hydrocarbon contact) data. Refer to ANNEX C for further details on scientific monitoring plan implementation and delivery). The timing of SMP activation and mobilisation of the individual SMPs to undertake data collection will be decided and documented by the Woodside SMP team following the process outlined in the SMP Operational Plan.</p> <p>In the event key receptors within geographic locations that are potentially impacted after 10 days following a spill event or commencement of the spill, and where adequate and appropriate baseline data are not available, there will be a response phase effort to collect baseline data for the following purposes:</p> <ul style="list-style-type: none"> i. Priority will be given to the collection of baseline data for receptors predicted to be within the spill affected area prior to hydrocarbon contact. The process is initiated with the investigation of available baseline and time to hydrocarbon contact (>10 days which is sufficient time to mobilise SMP teams and acquire data before hydrocarbon contact). ii. Collect baseline data for receptors predicted to be outside the spill affected area so reference datasets for comparative analysis with impacted receptor types can be assessed post-spill.
<p>Baseline Data</p>	<p>A summary of the spill affected area and receptor locations as defined by the EMBA for the PAP credible spill scenario(s) is presented Section 2.3.1</p> <p>The key receptors at risk by location and corresponding SMPs based on the EMBA for the PAP are presented in ANNEX D, as per credible spill event scenario(s). This matrix maps the receptors at risk with their location and the applicable SMPs that may be triggered in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. Receptor locations and applicable SMPs are colour coded to highlight possible time to contact based on receptor types and locations.</p> <p>The status of baseline studies relevant to the PAP are tracked by Woodside through the maintenance of a Corporate Environment Environmental Baseline Database (managed by the Woodside Biodiversity and Science team), as well as accessing external databases such as the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA)[1] (refer to ANNEX C: Oil Spill Scientific Monitoring Program).</p>

5.11.3 Summary – scientific monitoring

The resulting scientific monitoring capability has been assessed against the PAP credible spill scenario(s). The range of techniques provide an ongoing approach to monitoring operations to assess and evaluate the scale and extent of impacts. All known reasonably practicable control measures have been adopted with the cost and organisational complexity of these options determined to be moderate and the overall delivery effectiveness determined to be medium. The SMP’s main objectives can be met, with no additional, alternative or improved control measures providing further benefit.

5.11.4 Response planning: need, capability and gap – scientific monitoring

The receptor locations identified in Annex D provide the basis of the SMPs likely to be selected and activated. Once the Woodside SMP Delivery team and the SMP standby contractor have been stood up and the exact nature and scale of the spill becomes known, the SMPs to be activated will be confirmed as per the process set out in the SMP Operational.

Scope of SMP Operations in the event of a hydrocarbon spill

[1] <https://biocollect.ala.org.au/imsa#max%3D20%26sort%3DdateCreatedSort>

Receptor locations of interest for the SMP during the response phase are:

- Ningaloo Coast¹¹
- Muiron Islands¹²
- Exmouth Gulf
- Barrow, Montebello and Lowendal Island Groups
- Rankin Bank
- Southern Pilbara Island Group

Documented baseline studies for the above locations are included in Annex D, Table D-2. The SMP approach, however, would be to deploy SMP teams to maximise the opportunity to collect pre-emptive data at sensitive receptor locations. The exact locations where hydrocarbon contact occurs may be unpredictable, SM01 would be mobilised as a priority to be able to detect hydrocarbons and track the leading edge of the spill to verify where hydrocarbon contact occurs which will assist with where SMP resources are a priority need to obtain pre-emptive baseline data.

The ALARP assessment for the SMP (Section 6.11) considers alternate, additional, and/or improved control measures on each selected response technique.

¹¹ Ningaloo Coast includes the WHA, State Marine Park

¹² Muiron Islands includes the WHA and State Marine Management Area

5.11.5 Environmental performance based on need

Table 5-21: Scientific monitoring

Environmental Performance Outcome		Woodside can demonstrate preparedness to stand up the SMP to quantitatively assess and report on the extent, severity, persistence and recovery of sensitive receptors impacted from the spill event.		
Control measure		Performance Standard		Measurement Criteria
36	Woodside has an established and dedicated SMP team comprising the Biodiversity and Science Team and additional Environment Advisers within the HSE Function.	36.1	SMP team comprises a pool of competent Environment Advisers (stand up personnel) who receive training regarding the SMP, SMP activation and implementation of the SMP on an annual basis.	<ul style="list-style-type: none"> • Training materials • Training attendance registers • Process that maps minimum qualification and experience with key SMP role competency and a tracker to manage availability of competent people for the SMP team including redundancy and rostering.
37	<ul style="list-style-type: none"> • Woodside has a contracted SMP service provider to supply scientific personnel and equipment to implement the SMPs. The service will resource a base capability of one team per SMP (SM01-SM10), see Table C-2, ANNEX C and as detailed in Woodside's SMP standby contractor Implementation Plan. The availability of relevant personnel is reported to Woodside on a monthly basis via a simple report on the base-loading availability of suitable people for each of the SMPs comprising field work for data collection (SMP resourcing report register). • In the event of a spill and the SMP is activated, the base-loading availability of scientific personnel will be provided by the SMP standby contractor for the individual SMPs and where gaps in resources are identified, the SMP standby contractor and Woodside will seek additional personnel (if needed) from other sources including Woodside's Environmental Services Panel. 	37.1	<p>Woodside maintains the capability to mobilise personnel required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08):</p> <ul style="list-style-type: none"> • Personnel are sourced through the existing standby contract with SMP standby contractor, as detailed within the SMP Implementation Plan. • Scientific Monitoring Program Implementation Plan describes the process for standing up and implementing the scientific monitoring programs. • SMP team stand up personnel receive training regarding the stand up, activation and implementation of the SMP on an annual basis 	<ul style="list-style-type: none"> • Hydrocarbon Spill Preparedness (HSP) Internal Control Environment tracks the quarterly review of the Oil Spill Contracts. • SMP resource report of personnel availability provided by SMP contractor on monthly basis (SMP resourcing report register). • Training materials • Training attendance registers • Competency criteria for SMP roles • SMP annual arrangement testing and reporting.
38	<ul style="list-style-type: none"> • Roles and responsibilities for SMP implementation are captured in Table C-1 (Annex C) and the SMP team (as per the organisational structure of the CIMT) is outlined in SMP Operational Plan. Woodside has a defined Crisis and Incident Management structure including Source Control, Operations, Planning and Logistics functions to manage a response. • SMP Team structure, interface with SMP standby contractor (standby SMP contractor) and linkage to the CIMT is presented in Figure C-1, ANNEX C • Woodside has a defined Command, Control and Coordination structure for Incident and Emergency Management that is based on the AIMS framework utilised in Australia. • Woodside utilises an online Incident Management Information System (IMIS) to coordinate and track key incident management functions. This includes specialist modelling programs, geographic information systems (GIS), as well as communication flows within the Command, Control and Coordination structure. • SMP activated via the First Strike Plan (FSP) • Step by step process to activation of individual SMPs provided in the SMP Operational Plan • All decisions made regarding SMP logged in the online IMIS (SMP team members trained in using Woodside's online Incident Management System) • SMP component input to the CIMT Incident Action Plan (IAP) as per the identified CIMT timed sessions and the SMP IAP logged on the online IMIS • Woodside Biodiversity and Science Team provide awareness training on the activation and stand-up of the Scientific Monitoring Programme (SMP) for the Environment Advisers in Woodside who are listed on the SMP team on an annual basis. • Woodside Biodiversity and Science Team provide awareness training on the activation and stand-up of the Scientific Monitoring Programme (SMP) for the SMP standby contractor. • Woodside Biodiversity and Science Team co-ordinates an annual SMP arrangement testing exercise with the SMP standby contractor. 	38.1	<ul style="list-style-type: none"> • Woodside has established an SMP organisational structure and processes to stand up and deliver the SMP. 	<ul style="list-style-type: none"> • SMP Oil Spill Scientific Monitoring Operational Plan • SMP Implementation Plan • SMP annual arrangement testing and reporting.
39	<ul style="list-style-type: none"> • Chartered and mutual aid vessels. • Suitable vessels would be secured from the Woodside support vessels, regional fleet of vessels operated by Woodside and other operators and the regional charter market. • Vessel suitability will be guided by the need to be equipped to operate grab samplers, drop camera systems and water sampling equipment (the individual vessel requirements are outlined in the relevant SMP methodologies (refer to Table C-2, ANNEX C). • Nearshore mainland waters could use the same approach as for open water. Smaller vessels may be used where available and appropriate. Suitable vehicles and machinery for onshore access to nearshore SMP locations would be provided by Woodside's transport services contract and sourced from the wider market. 	39.1	<p>Woodside maintains standby SMP capability to mobilise equipment required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08):</p> <ul style="list-style-type: none"> • Equipment is sourced through the existing standby contract with SMP standby contractor as detailed within the SMP Implementation Plan. 	<ul style="list-style-type: none"> • HSP Internal Control Environment tracks the quarterly review of the Oil Spill Contracts • SMP standby monthly resource reports of equipment availability provided by SMP contractor (SMP resourcing report register). • SMP annual arrangement testing and reporting

	<ul style="list-style-type: none"> Dedicated survey equipment requirements for scientific monitoring range from remote towed video and drop camera systems to capture seabed images of benthic communities to intertidal/onshore surveying tools such as quadrats, theodolites and spades/trowels, cameras and binoculars (specific survey equipment requirements are outlined in the relevant SMP methodologies (refer to Table C-2, ANNEX C)). Equipment would be sourced through the existing SMP standby contract and if additional surge capacity is required this would be available through the other Woodside Environmental Services Panel Contractors and specialist contractors. SMP standby contractor can also address equipment redundancy through either individual or multiple suppliers. MoUs are in place with one marine sampling equipment company and one analytical laboratory (SMP resourcing report register). Availability of SMP equipment for offshore/onshore scientific monitoring team mobilisation is within one week to ten days of the commencement of a hydrocarbon release. This meets the SMP mobilisation lead time that will support meeting the response objective of 'to acquire, where practicable, the environmental baseline data prior to hydrocarbon contact required to support the post-response SMP'. 			
40	<p>Woodside's SMP approach addresses the pre-PAP acquisition of baseline data for Pre-emptive Baseline Areas (PBAs) with ≤10 days if required following a baseline gap analysis process. Woodside maintains knowledge of Environmental Baseline data through:</p> <ul style="list-style-type: none"> Documentation annual reviews of the Woodside SMP Baseline Environmental Studies Database, and specific activity baseline gap analyses. Accessing external databases such as the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA) (refer to ANNEX C: Oil Spill Scientific Monitoring Program). 	40.1	<ul style="list-style-type: none"> Annual reviews of environmental baseline data PAP specific Pre-emptive Baseline Area baseline gap analysis 	<ul style="list-style-type: none"> Annual review/update of Woodside Baseline Environmental Studies Database Desktop review to assess the environmental baseline study gaps completed prior to EP submission Accessing baseline knowledge via the SMP annual arrangement testing
Environmental Performance Outcome		SMP plan to acquire response phase monitoring targeting pre-emptive data achieved.		
Control measure		Performance Standard		Measurement Criteria
41	<p>Woodside's SMP approach addresses:</p> <ul style="list-style-type: none"> Scientific data acquisition for PBAs >10 days to hydrocarbon contact and activated in the response phase and Transition into post-response SMP monitoring. 	41.1	<p>Pre-emptive Baseline Area (PBA) baseline data acquisition in the response phase</p> <p>If baseline data gaps are identified for PBAs predicted to have hydrocarbon contact in >10 days, there will be a response phase effort to collect baseline data. Priority in implementing SMPs will be given to receptors where pre-emptive baseline data can be acquired or improved. SMP team (within the Environment Unit of the CIMT) contribute SMP component of the CIMT Planning Function in development of the IAP.</p>	<ul style="list-style-type: none"> Response SMP plan Woodside's online Incident Management System records SMP component of the Incident Action Plan.
		41.2	<p>Post Spill contact</p> <p>For the receptors contacted by the spill in where baseline data are available, SMPs programs to assess and monitor receptor condition will be implemented post spill (i.e. after the response phase).</p>	<ul style="list-style-type: none"> SMP planning document SMP Decision Log Incident Action Plans (IAPs)
Environmental Performance Outcome		Implementation of the SMP (response and post-response phases).		
Control measure		Performance Standard		Measurement Criteria
42	<ul style="list-style-type: none"> Scientific monitoring will address quantitative assessment of environmental impacts of a level 2 or 3 spill or any release event with the potential to contact sensitive environmental receptors. The SMP comprises ten targeted environmental monitoring programs. SMP supporting documentation: (1) Oil Spill Scientific Monitoring Operational Plan; (2) SMP Implementation Plan and (3) SMP Process and Methodologies Guideline. The Oil Spill Scientific Monitoring Operational Plan details the process of SMP selection, input to the IAP to trigger operational logistic support services. Methodology documents for each of the ten SMPs are accessible detailing equipment, data collection techniques and the specifications required for the survey platform support. The SMP standby contractor holds a Woodside SMP implementation plan detailing activation processes, linkage with the Woodside SMP team and the general principles for the planning and mobilisation of SMPs to deliver the individual SMPs activated. Monthly resourcing report are issued by the SMP standby contractor (SMP resourcing report register). All SMP documents and their status are tracked via SMP document register. 	42.1	<p>Implementation of SM01</p> <p>SM01 will be implemented to assess the presence, quantity and character of hydrocarbons in marine waters during the spill event in nearshore areas</p>	<p>Evidence SM01 has been triggered:</p> <ul style="list-style-type: none"> Documentation as per requirements of the SMP Operational Plan Woodside's online Incident Management System Records. SMP component of the IAP SMP data records from field
		42.2	<p>Implementation of SM02-SM10</p> <p>SM02-SM10 will be implemented in accordance with the objectives and activation triggers as per Table C-2 of Annex C.</p>	<p>Evidence SMPs have been triggered:</p> <ul style="list-style-type: none"> Documentation as per requirements of the SMP Operational Plan Woodside's online Incident Management System Records. SMP component of the IAP SMP Data records from field

		42.3	<p>Termination of SMP plans The Scientific Monitoring Program will be terminated in accordance with termination triggers for the SMPs detailed in Table C-2 of Annex C, and the Termination Criteria Decision-tree for Oil Spill Environmental Monitoring (Figure C-3 of Annex C):</p>	<p>Evidence of Termination Criteria triggered:</p> <ul style="list-style-type: none"> • Documentation and approval by relevant stakeholders to end SMPs for specific receptor types.
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5.12 Incident Management System

The Incident Management System is both a control measure and a measurement criteria. As a control measure the IMS function is to prompt, facilitate and record the completion of three key response planning processes detailed below. As a measurement criteria the IMS records the evidence of the timeliness of all response actions included in the environmental performance standards and the plans used of the PAP.

As the IMS does not directly remove hydrocarbons spilt into the marine environment there is no direct relationship to the response planning need.

5.12.1 Incident action planning

The CIMT will be required to collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an incident action plan (IAP) and assist the IMT with the execution of that plan. The site-based IC may request the CIMT to complete notifications internally within Woodside, to relevant persons/ organisations and government agencies as required. Depending on the type and scale of the incident either the CIMT DM or IC will be responsible for ensuring the development of the IAP. Incident Action Planning is an ongoing process that involves continual review to confirm techniques to control the incident are appropriate to the situation at the time.

5.12.2 Operational NEBA process

In the event of a response Woodside will confirm that the response techniques adopted at the time of Environment Plan/ Oil Pollution Emergency Plan (EP/ OPEP) acceptance remain appropriate to reduce the consequences of the spill. This process verifies that there is a continuing net environmental benefit associated with continuing the response technique through the operational NEBA process. This process manages the environmental risks and impacts of response techniques during the spill response, an operational NEBA will be undertaken throughout the response, for each operational period.

The operational NEBA will consider the risks and benefits of conducting and response activity. For example, if vessels are required for access to nearshore or onshore areas, anchoring locations will be selected to minimise disturbance to benthic habitats. Vessel cleanliness would be commensurate with the receiving environment. The operational NEBA will consider the risks and benefits of conducting other response techniques.

The operational NEBA process is also used to terminate a response. Using data from operational and scientific monitoring activities the response to a hydrocarbon spill will be terminated in accordance with the termination process outlined in the Oil Pollution Emergency Arrangements (Australia). In effect the operational NEBA will determine whether there is net environmental benefit to continue response operations.

5.12.3 Consultation engagement process

Woodside will ensure persons/ organisations are engaged during the spill response in accordance with internal standards. This process requires that Woodside will:

- Undertake all required notifications (including government notifications) for persons/ organisations in the region (identified in the First Strike Plan). This includes notification to mariners to communicate navigational hazards introduced through response equipment and personnel.
- In the event of a response, identify and engage with relevant persons/ organisations and continually assess and review.

5.12.4 Environmental performance based on need

Table 5-22: Environmental Performance – Incident Management System

Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
Control measure		Performance Standard		Measurement Criteria (Section 5.13)
43	Operational SIMA	43.1	Confirm that the response techniques adopted at the time of acceptance remain appropriate to reduce the consequences of the spill within 24 hours.	1, 3A
		43.2	Record the evidence and justification for any deviation from the planned response activities.	
		43.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
44	Stakeholder engagement	44.1	Prompt and record all notifications (including government notifications) for relevant persons/ organisations in the region are made.	
		44.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
		44.3	Undertake communications in accordance with: <ul style="list-style-type: none"> • Functional Support Team Guideline – Reputation • External Communication and Continuous Disclosure Procedure • External Stakeholder Engagement Procedure. 	
45	Personnel required to support any response	45.1	Action planning is an ongoing process that involves continual review to ensure techniques to control the incident are appropriate to the situation at the time.	1, 3B
		45.2	A duty roster of trained and competent people will be maintained to ensure that minimum manning requirements are met all year round.	3C
		45.3	Immediately activate the CIMT with personnel filling one or more of the following roles: <ul style="list-style-type: none"> • CIMT Incident Commander • CIMT Deputy Incident Commander • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Documentation Unit Leader • Safety Officer • Environment Unit Leader • Human Resources Officer • Public Information Officer • Situation Unit Leader • Finance Section Chief • Source Control Section Chief. 	1, 2, 3B, 3C, 4
		45.4	Collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an Incident Action Plan (IAP) and assist with the execution of that plan.	

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Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.	
Control measure		Performance Standard	
		Measurement Criteria (Section 5.13)	
		45.5	S&EM advisors will be integrated into CIMT to monitor performance of all functional roles.
		45.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.
		45.7	Follow the OPEA, Operational Plans, FSPs, support plans and the IAPs developed.
		45.8	Contribute to Woodside's response in accordance with the aims and objectives set by the Incident Commander.
			1, 2, 3A, 4
			1, 2, 3B, 3C, 4

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5.13 Measurement criteria for all response techniques

Woodside ensures compliance with environmental performance outcomes and standards through four primary mechanisms. The aforementioned performance tables identify which of these four mechanisms monitors the readiness and records the effectiveness and performance of the control measures adopted.

1. The Incident Management System

The Incident Management System (IMS) supports the implementation of the Emergency and Crisis Management Procedure. The IMS provides a near real-time, single source of information for monitoring and recording an incident and measuring the performance of those control measures.

The Emergency and Crisis Management Procedure defines the management framework, including roles and responsibilities, to be applied to any size incident (including hydrocarbon spills). The organisational structure required to manage an incident is developed in a modular fashion and is based on the specific requirements of each incident. The structure can be scaled up or down.

The Incident Action Plan (IAP) process formally documents and communicated the:

- Incident objectives
- Status of assets
- Operational period objectives
- Response techniques (defined during response planning)
- The effectiveness of response techniques.

The information captured in the IMS (including information from personal logs and assigned tasks/close outs) confirms the response techniques implemented remain appropriate to reduce the consequences of the spill. The system also records all information and data that can be used to support the site-based CIMT, development and the execution of the IAP.

2. The S&EM Competency Dashboard

The S&EM competency dashboard records the number of trained and competent responders that are available across Woodside, and some external providers, to participate in a response.

This number varies dependent on expiry of competency certificates, staff attrition, internal rotations, leave and other absences. As such the Dashboard is designed to identify the minimum manning requirements and to identify sufficient redundancy to cater for the variances listed above.

Figure 5-2 shows the minimum manning numbers for the different hydrocarbon spill response roles and the number of qualified persons against those roles.

Woodside's pool of trained responders is composed of but not limited to personnel from the following organisations:

- Woodside internal
- Australian Marine Oil Spill Centre (AMOSC) core group
- AMOSC
- Oil Spill Response Limited (OSRL)
- Marine Spill Response Corporation (MSRC)
- AMSA
- Woodside contracted workforce

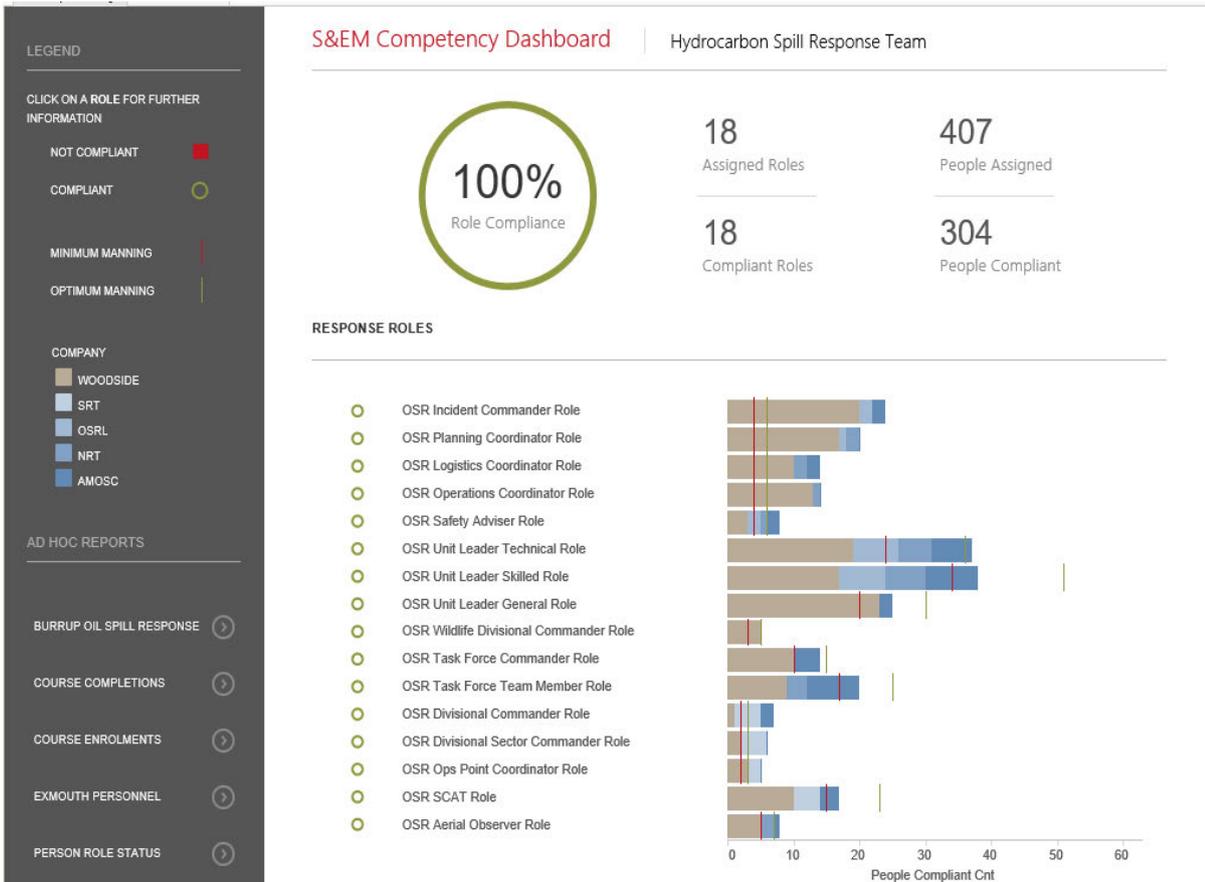


Figure 5-2: Example screen shot of the HSP competency dashboard.

The Dashboard is one of Woodside’s key means of monitoring its readiness to respond. It supports Woodside in meeting the requirements of the environmental performance standard that relate to filling certain response roles.

Figure 5-3 shows deeper dive into the Ops Point Coordinator role and the training modules required to show competence.

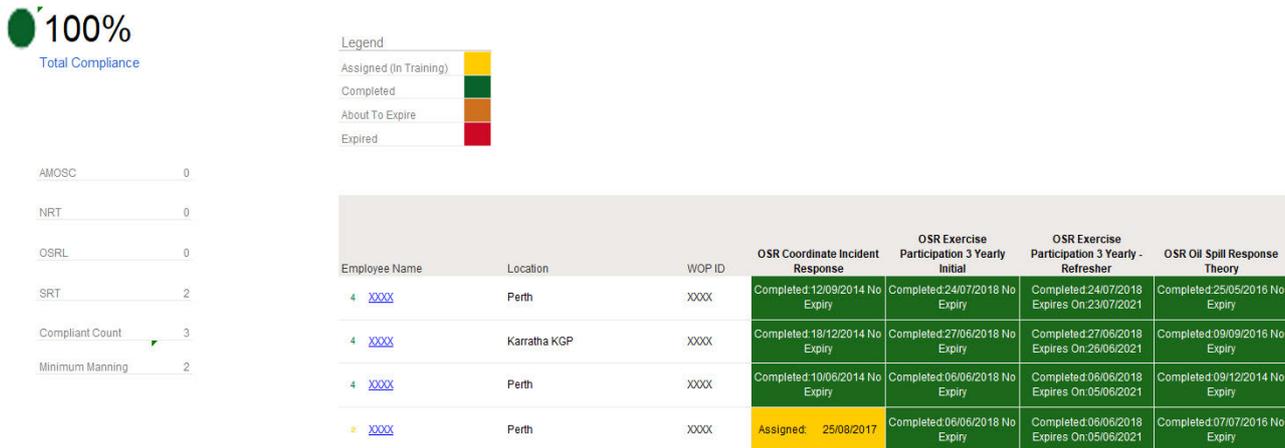


Figure 5-3: Example screen shot for the Ops Point Coordinator role

3. The Hydrocarbon Spill Preparedness ICE Assurance Process

The Hydrocarbon Spill Response Team has developed a Hydrocarbon Spill Preparedness and Response Internal Control Environment (ICE) process to align and feed into the Woodside Management System Assurance process for hydrocarbon spill. The process tracks compliance over four key control areas:

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- a) **Plans** – Ensures all plans (including: Oil Pollution Emergency Arrangements, first strike plans, operational plans, support plans and tactical response plans) are current and in line with regulatory and internal requirements.
- b) **Competency** – Ensures the competency dashboard is up to date and there are the minimum competency numbers across CIMT, CMT and hydrocarbon spill response roles. The hydrocarbon spill training plan and exercise schedule, including testing of arrangements is also tracked. The Testing of Arrangements (TOA) register tracks the testing of all hydrocarbon spill response arrangements, key contracts and agreements in place with internal and external parties to ensure compliance.
- c) **Capability** – Tracks and monitors capability that could be required in a hydrocarbon incident, including but not limited to: integrated fleet¹³ vessel schedule, dispersant availability, rig/vessels monitoring, equipment stockpiles, tracking buoy locations and the CIMT duty roster.
- d) **Compliance and Assurance** – Ensures all regulator inspection outcomes are actioned and closed out, the global legislation register is up to date and that the key assurance components are tracked and managed. Assurance activities (including Audits) conducted on memberships with key Oil Spill Response Organisations (OSROs) including AMOSC and OSRL are also tracked and recorded in the ICE.

The ICE assurance process records how each commitment listed in the performance tables above is managed to ensure ongoing compliance monitoring. The level of compliance can be reviewed in real time and is reported on a monthly basis through the S&EM Function.

The completion of the assurance checks (over and above the ICE process) is also applied via the Woodside Integrated Risk and Compliance System (WiRCs) and subject to the requirements of Woodside's Provide Assurance Procedure.

4. The Hydrocarbon Spill Preparedness and Response Procedure

This procedure sets out how to plan and prepare for a liquid hydrocarbon spill to the marine environment. (Note, this procedure does not apply to scenarios relating to gas releases in the marine environment).

This procedure details the:

- Requirement for an Oil Pollution Emergency Plan (OPEP) to be developed, maintained, reviewed, and approved by appropriate regulators (where applicable) including:
 - Defining how spill scenarios are developed on an activity specific basis
 - Developing and maintaining all hydrocarbon spill related plans
 - Ensuring the ongoing maintenance of training and competency for personnel
 - Developing the testing of spill response arrangements
 - Maintaining access to identified equipment and personnel.
- Planning for hydrocarbon spill response preparedness
- Accountabilities for hydrocarbon spill response preparedness
- Spill training requirements
- Requirements for spill exercising / testing of spill response arrangements
- Spill equipment and services requirements.

The procedure also details the roles and responsibilities of the dedicated Woodside Hydrocarbon Spill Preparedness team. This team is responsible for:

- Assuring that Woodside hydrocarbon spill responders meet competency requirements.

¹³ The Integrated fleet consists of vessels from multiple operators that have been contracted to Woodside to undertake a number of duties including hydrocarbon spill response

- Establishing the competency requirements, annual training schedule and a training register of trained personnel.
- Establishing and maintaining the total numbers of trained personnel required to provide an effective response to any hydrocarbon spill incident.
- Ensuring equipment and services contracts are maintained
- Establishing OPEPs
- Establishing OPEAs
- Priority response receptor determination
- ALARP determination
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements

6 ALARP EVALUATION

This Section should be read in conjunction with Section 5 which is the capability planned for this activity.

6.1 Operational Monitoring – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.1.1 Operational Monitoring – Control Measure Options Analysis

6.1.1.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Aerostat (or similar inflatable observation platform) for localised aerial surveillance.	Lead time to Aerostat surveillance is disproportionate to the environmental benefit. The system also provides a very limited field of visibility around the vessel it is deployed from.	Long lead time to access (>10 days). Each system would require an operator to interpret data and direct vessels accordingly. Requires multiple systems for shoreline use.	Purchase cost per system approximately \$300,000.	This option is not adopted as the minimal environmental benefit gained is disproportionate to the cost and complexity of its implementation.	No
Use of Autonomous Underwater Vehicles (AUVs) for hydrocarbon presence and detection.	Use of AUVs may be feasible and may provide an environmental benefit in assessing inaccessible areas for presence of hydrocarbons in the water however cost of purchase is disproportionate to the environmental benefit when compared to the monitoring types in place.	AUVs may be considered as an additional method of monitoring, should remote systems be required for health and safety reasons.	Cost \$10,000 for mobilisation and \$15,000 a day when deployed.		No

6.1.1.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional personnel trained to use systems.	Current arrangement provides an environmental benefit in the availability of trained personnel facilitating access to monitoring data used to inform all other response techniques. No improvement required.	No improvement can be made, all personnel in technical roles e.g. intelligence unit are trained and competent on the software systems. Personnel are trained and exercised regularly. Use of the software and systems forms part of regular work assignments and projects.	Cost for training in-house staff would be approximately \$25,000.	This option is not adopted as the current capability meets the need.	No
Additional satellite tracking buoys to enable greater area coverage.	Increased capability does not provide an environmental benefit compared to the disproportionate cost in having an additional contract in place.	Tracking buoy on location at manned facility, additional needs are met from WEL owned stocks in King Bay Support Facility (KBSF) and Exmouth or can be provided by service provider.	Cost for an additional satellite tracking buoy would be \$200 per day or \$6,000 to purchase.	This option is not adopted as the current capability meets the need, but additional units are available if required.	No
Additional trained aerial observers.	Current capability meets need. WEL has access to a pool of trained, competent observers at strategic locations to ensure timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL.	Current capability meets need. WEL has a pool of trained, competent observers at strategic locations to ensure timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL Aviation standards & guidelines ensure all aircraft crews are competent for their roles. WEL maintains a pool of trained and competent aerial observers with various home base locations to be called	Cost for additional trained aerial observers would be \$2,000 per person per day.	This option is not adopted as the current capability meets the need, but additional observers are available via	No

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		upon at the time of an incident. Regular audits of oil spill response organisations ensure training and competency is maintained.		response contractors if required.	
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6.1.1.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster turnaround time from modelling contractor.	Improved control measure does not provide an environmental benefit compared to the disproportionate cost in having an additional contract in place.	External contractor on CIMT roster to be called as soon as required. However initial information needs to be gathered by CIMT team to request an accurate model. External contractor has person on call to respond from their own location.	Modelling service with a faster activation time would be achieved via membership of an alternative modelling service at an annual cost of \$50,000 for 24hr access plus an initial \$5,000 per modelling run.	This option is not adopted as the minimal environmental benefit gained is disproportionate to the cost and complexity of its implementation.	No
Night time aerial surveillance.	The risk of undertaking the aerial observations at night is disproportionate to the limited environmental benefit. The images would be of low quality and as such the variable is not adopted.	Flights will only occur when deemed safe by the pilot. The risk of night operations is disproportionate to the benefit gained, as images from sensors (IR, UV, etc). will be low quality. Flight time limitations will be adhered to.	No improvement can be made without risk to personnel health and safety and breaching Woodside's golden rules.	This option is not adopted as the safety considerations outweigh any environmental benefit gained.	No
Faster mobilisation time (for water quality monitoring).	Due to the restriction on accessing the spill location on Day one there is no environmental benefit in having vessels available from day one. The cost of having dedicated equipment and personnel is disproportionate to the environmental benefit. The availability of vessels and personnel meets the response need. Shortening the timeframes for vessel availability would require dedicated response vessels on standby in KBSF. The cost and organisational complexity of employing two dedicated response vessels (approximately \$15M/year per vessel) is considered disproportionate to the potential environmental benefit to be realised by adopting this delivery options.	Operations are not feasible on day 1 as the hydrocarbon will take time to surface, and Volatility has potential to cause health concerns within the first 24 hours of the response.	Cost for purchase of equipment approximately \$200,000. Ongoing costs per annum for cost of hire and pre-positioning for life of asset/activity would be larger than the purchase cost. Dedicated equipment and personnel, living locally and on short notice to mobilise. The cost would be approximately \$1M per annum, which is disproportionate to the incremental benefit this would provide, assets are already available on day 1. 2 integrated fleet vessels are available from day 1, however these could be tasked with other operations.	This option is not adopted as the area could not be accessed earlier due to safety considerations. Additionally, the cost and complexity of implementation outweighs the benefits.	No

6.1.2 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.2 Source Control – ALARP Assessment

Woodside has based its response planning on the worst-case credible scenarios (as described in Section 2.2). This includes the following selection of primary source control and well intervention techniques which would be initiated concurrently:

- direct ROV intervention or Xmas tree
- debris clearance and/or removal
- capping stack
- relief well drilling.

6.2.1 ROV Intervention

Following confirmation of an emergency event, Woodside would mobilise inspection class ROVs to assess the status of the wellhead. Work class ROVs for well intervention are available through the existing frame agreements and are available for deployment within seven days (Table 6-1). It is not expected any additional regulatory approvals would be required as inspection, maintenance and repair is within the scope of activities of the facility safety case as well as the scope of activities for contracted Frame Agreement vessels.

As Woodside holds Frame Agreements for vessels along with contracts for ROV providers and pilots, inspection activities using ROVs are expected to commence within seven days.

Table 6-1: ROV timings

	Estimate ROV inspection duration for Ngujima-Yin FPSO Operations (days)
Source and mobilise vessel with work class ROV	2 days
Liaise with Regulator regarding risks and impacts*	4 days
Undertake ROV Inspection	1 day
TOTAL	7 days*

* Based on timings from the Report into the Montara Commission of Enquiry, submission and discussion of revised documentation for limited activities inside the Petroleum Safety Zone (water deluge operations) to manage personnel risks and impacts was up to 20 days.

6.2.1.1 Safety Case considerations

Woodside has assessed against the NOPSEMA safety case guidance (NOPSEMA N-09000-GN1661), confirming that vessels conducting subsea intervention operations are not classified as an “associated offshore place” but as a facility and therefore require the appropriate Safety Case arrangements to be in place. In the event of an emergency, Woodside has access to suitable vessels for well intervention through existing frame agreements. The frame agreements for vessels require the vessels to maintain in-force safety case approval covering a range of subsea activities. This would cover the requirement for intervention operations such as subsea manifold installation, maintenance and repair, commissioning, cargo transfer (including bulk liquids) and ROV operations. With frame agreements in place, the credible Safety Case Scenario from those presented in Figure 6-3 for implementing this response would be “no safety case revision required”. Timeframes for well intervention are detailed in Figure 6-2 and would be implemented concurrently to the actions required by the “no Safety Case” revision scenario detailed in Figure 6-3, therefore, the Safety Case scenario will have no impact on the delivery of the strategy.

6.2.2 Debris clearance and/or removal

The Woodside Source Control Response Procedure details the mobilisation and resource requirements for implementing this strategy. Debris clearance may be required as a prerequisite to deployment of the capping stack. The AMOSC SFRT would be mobilised from Fremantle. The mobilisation of the SFRT would take place in parallel with mobilisation of the capping stack to ensure initial ROV surveys and debris clearance have commenced before the arrival of the capping stack. The SFRT comprises ROV-deployed cutters and tools that are used to remove damaged or redundant items from the wellhead and allow improved access to the well. The SFRT can be mobilised and deployed with well intervention attempted within 11 days.

6.2.2.1 Safety Case considerations

Woodside has assessed against the NOPSEMA safety case guidance (NOPSEMA N-09000-GN1661) and can confirm that vessels conducting debris clearance and removal operations are not classified as an “associated offshore place” but as a facility and therefore require the appropriate Safety Case arrangements in place. In the event of an emergency, Woodside has access to suitable vessels for these operations through existing frame agreements. The frame agreements require suitable vessels to maintain in-force safety case approval covering a range of subsea activities. This would cover the requirement for debris clearance and removal operations such as subsea manifold installation, commissioning, cargo transfer (including bulk liquids) and ROV operations. With frame agreements in place, the credible Safety Case Scenario, from those presented in Figure 6-3 for implementing this response would be “no safety case revision required”. Timeframes for debris clearance and removal equipment deployment are detailed in Figure 6-2 and would be implemented concurrently to the actions required by the “No Safety Case” revision scenario detailed in Figure 6-3, therefore, the Safety Case scenario will have no impact on the delivery of the strategy.

6.2.3 Capping stack

A capping stack is designed to be installed on a subsea well and provides a temporary means of sealing the well, until a permanent well kill can be performed through either a relief well or well re-entry.

In the event of a loss of well containment, the use of a subsea deployment method such as a heavy lift vessel, which is more commonly used in industry, is considered a more reliable and, in turn, ALARP approach. If environmental conditions permit (wind speed, wave height, current and plume radius), deployment of a capping stack with a heavy lift vessel with a 150 T crane capacity in shallower waters or 250 T crane in deeper waters could be feasible.

Woodside monitors the availability and location of vessels suitable for capping stack deployment. Woodside maintains several frame agreements with various vessel service providers and maintains the ability to call off services with a capping stack and debris clearance agreement. The supply arrangements and reliability to achieve the required mobilisation time will be revalidated prior to spud. Consideration to mobilise the capping stack from the supplier on a suitable vessel but then hand over to another vessel to conduct the capping activity will also be made to meet response time frames.

A capping stack will be mobilised to site within 16 days. Woodside will monitor the conditions around the wellsite and deployment for well intervention attempt will be undertaken once plume size is acceptable and safety and metocean conditions are suitable.

6.2.3.1 Safety Case considerations

Woodside has assessed against the NOPSEMA safety case guidance (NOPSEMA N-09000-GN1661) and can confirm that vessels conducting capping stack are not classified as an “associated offshore place” but as a facility and therefore require the appropriate Safety Case arrangements in place.

The 16-day timeframe to mobilise the vessel is based on the following assumptions:

- existing frame agreement vessel, located outside the region with approved Australian Safety Case
- a safety case revision and scope of validation is required
- vessel meets the technical requirements for deploying capping stack as per the Source Control Emergency Response Planning Guideline
- vessel has an active heave compensated crane, rated to at least 150 T for shallow waters or 250 T in deeper waters and at least 90 m in length and a deck capacity to hold at least 110 T of capping stack.

Timeframes for capping stack deployment detailed in Figure 6-2 would be implemented concurrently with the actions required for the Safety Case revision development scenarios detailed in Figure 6-3 and Table 6-3. Woodside will execute the capping stack response in the fastest possible timeframe, provided the required safety and metocean conditions allow. Woodside has considered a broad range of alternate, additional, and improved options as outlined later in Section 1.1.1.

6.2.4 Relief Well drilling

The options analysis detailed in this section considers options to source, contract and mobilise a MODU and ensure necessary regulatory approvals are in place to meet timelines for relief well drilling. The screening for relief well drilling MODUs is based on the following and the process used for Ngujima-Yin FPSO Operations is illustrated in Figure 6-1:

- Primary – review internal Woodside drilling programs and MODU availability to source an appropriate MODU operating within Australia with an approved Safety Case.
- Alternate – source and contract a MODU through Australian Energy Producers (AEP – formerly APPEA) MOU that is operating within Australia with an approved Safety Case.
- Contingency – Source and contract a MODU outside Australia with an approved Australian Safety Case.

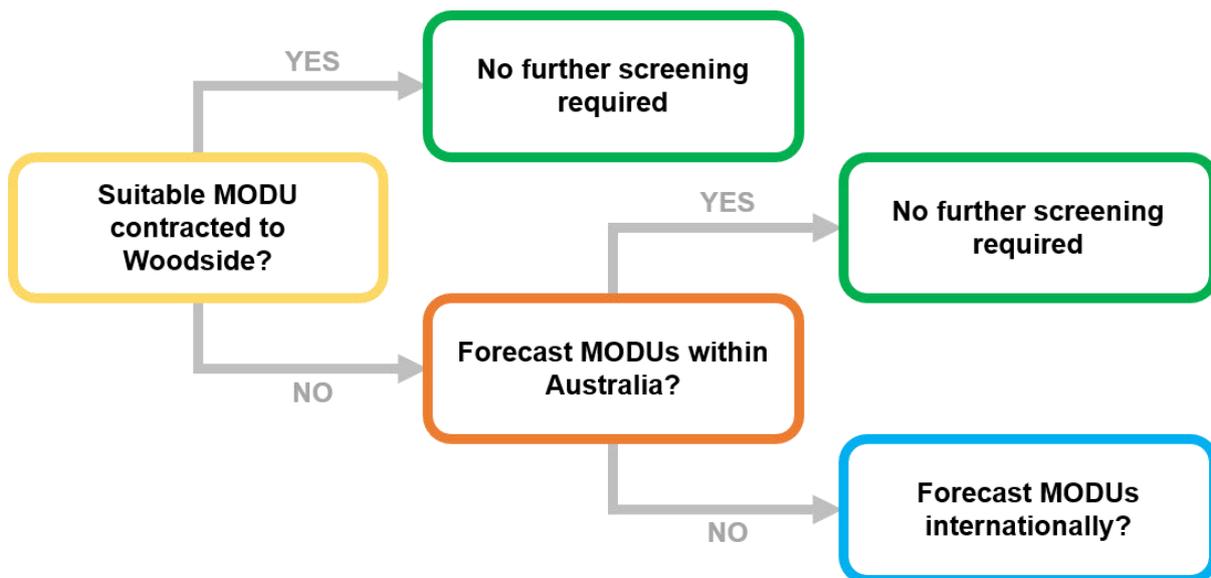


Figure 6-1: Ngujima-Yin FPSO Operations process for sourcing relief well MODU

Woodside has not assessed the timeframe for obtaining a relief well MODU through international supply for this project as the certainty of local supply has been confirmed.

Screening of a relief well MODU from international waters is undertaken only if required, i.e. there is low confidence in local (Australian) availability. The capability, location and Australian Safety Case status is assessed for each Woodside contracted MODU. In the event the Woodside contracted MODUs are unsuitable, screening is extended to all MODUs operating in Australian Waters. The suitability and location of pre-identified relief well MODUs is tested again prior to the operation. Though the AEP MoU will serve as the instrument to facilitate the transfer of drilling units and well site services between operators in the event of an emergency, Woodside will engage each of the identified titleholders in advance to maintain confidence in MODU suitability and availability.

Based on the detail provided, the Primary and Alternate approaches are expected to be achieved within the 21-day period.

The internal and external availability of moored MODUs, plus MODU activities of registered operators and MODUs with approved safety cases, are tracked by Woodside on a monthly basis to ensure that the best available option can be sourced and utilised in the event of the worst-case credible scenario.

If the above forecast indicates a gap in availability of a suitable MODU for relief well drilling within Australia, screening would be extended to MODUs with a valid safety case outside Australia. If an international MODU with an Australian safety case is not identified, an internal review will be undertaken, NOPSEMA notified and the issue tabled at the AEP Drilling Industry Safety Committee. A review of the significance of the change in risk will be undertaken in accordance with Woodside’s environment management of change requirements and relevant regulatory triggers. The aforementioned lookahead timeframe would allow two years’ warning of any potential gap. Woodside will execute relief well drilling in the fastest possible timeframe.

The detail of these arrangements demonstrates that the risks have been reduced to ALARP and Acceptable levels through the control measures and performance standards outlined in Section 5.2.

6.2.4.1 Relief Well drilling timings

The duration of a blowout (from initiation to a successful kill) is assessed as 77 days for Ngujima-Yin FPSO Operations PAP. Relief wells for other wells within the field are expected to be similar duration.

Details on the steps and time required to drill a relief well is shown in Table 6-2. DP and moored MODUs are suitable for the Ngujima-Yin FPSO Operations PAP. A moored MODU has been used as the basis for the time estimate below.

To validate the effectiveness of the relief MODU supply arrangements through the AEP MoU, an exercise to test the 21-day mobilisation period forms part of Woodside’s three-yearly Hydrocarbon Spill Arrangements Testing Schedule. Testing of these arrangements are facilitated by an external party and includes suspension of the assisting operator’s activities, contracting the MODU, vessel safety case revision and transit to location.

Table 6-2: Relief well drilling timings

Estimated Relief Well Duration	Moored Days	
Rig Mobilisation		
Secure and suspend well. Complete Relief well design. Secure relief well materials.	8.0	21 days
Transit to location based on mobilisation from within the region	2.0	
Backload and loadout bulks and equipment, complete internal assurance of relief well design.	2.0	

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Contingency for unforeseen event	9.0	
Mooring activities and relief well construction operations	42	
Intersection & well kill comprising the following stages:		
Drill out shoe, conduct formation integrity test and drill towards intersection point	1.5	14 days
Execute well-specific ranging plan to accurately intersect wellbore in minimum timeframe	9.5	
Pump kill weight drilling fluid per the relief well plan. Confirm well is static with no further flow	0.5	
Contingency for unforeseen technical issues	2.5	
Total Discharge Duration	77	

The above timings assume a dynamically positioned MODU is not available.

Woodside has considered a broad range of alternate, additional, and improved options as outlined in Section 6.2.5.

Intersect and kill duration is estimated at 14 days. This is a moderately conservative estimate. During the intersect process, the relief well will be incrementally drilled and logged to accurately approach and locate the existing well bore. This will result in the highest probability of intersecting the well on the first attempt and thus will reduce the overall time to kill the well. During the Montara incident, it took five attempts to achieve a successful intersect.

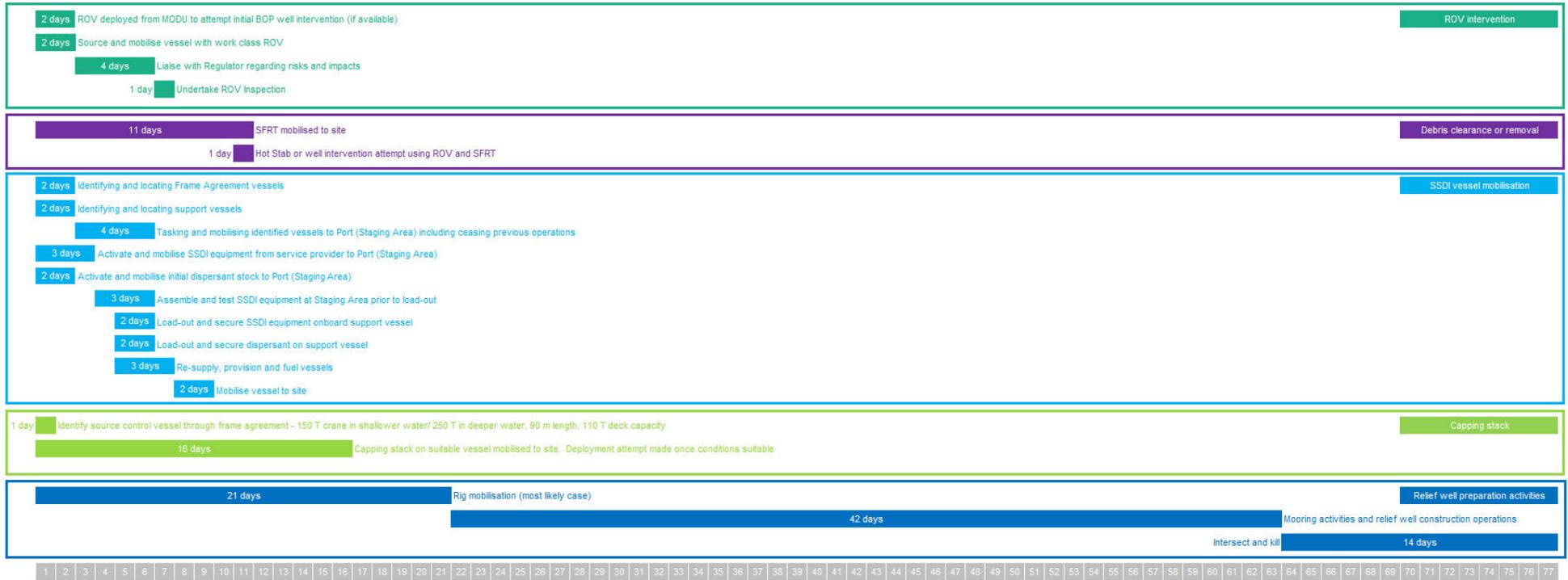


Figure 6-2: Source control and well intervention response strategy deployment timeframes for Ngujima-Yin

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6.2.4.2 Safety Case considerations

Woodside recognises that it will not be the Operator or holder of the Safety Case for the MODU and/or vessels involved in relief well activities. In the event that a revision to the Operator's Safety Case is required for relief well drilling, Woodside has identified measures to allow timely response and optimise preparedness as far as practicable that can be undertaken to expedite a straightforward Safety Case revision for a MODU/ vessel to commence drilling a relief well. Performance standards associated with these measures have been included in Section 5.2.

These include;

- Access to Safety and Risk discipline personnel with specialist knowledge.
- Monitoring internal and external MODUs and vessel availability in the region and extended area through contracted arrangements on a monthly basis, with a two-year lookahead.
- Prioritisation of MODUs/vessels with current or historical contracting arrangements. Woodside maintains records of previous contracting arrangements and companies. All current contracts for vessels and MODUs are required to support Woodside in the event of an emergency.
- Leverage mutual aid arrangements such as the AEP MOU for vessel and MODU support.
- Woodside Planning and Logistics, and Safety Officers (on-Roster/Call 24/7) which can articulate need for, and deliver Woodside support, in key delivery tasks including sitting with potential outside operators.
- Ongoing strategic industry engagement and collaboration with NOPSEMA to work toward time reductions in regulatory approvals for emergency events.

Woodside has identified three safety case revision development and submission scenarios for a MODU and plotted these alongside the relief well preparation activities in Figure 6-3. The assumptions for each of the cases are detailed in subsequent Table 6-3.

The MODUs screened for contingency relief well drilling all operate under an Accepted base Safety Case. A relief well Safety Case Revision would leverage the previously accepted Safety Case Revision for the Ngujima-Yin FPSO Operations, including the associated site-specific well hazards. As such, there is less new detail for the regulator to review and should present a short review timeframe with no impact expected to the commencement of relief well drilling activities.

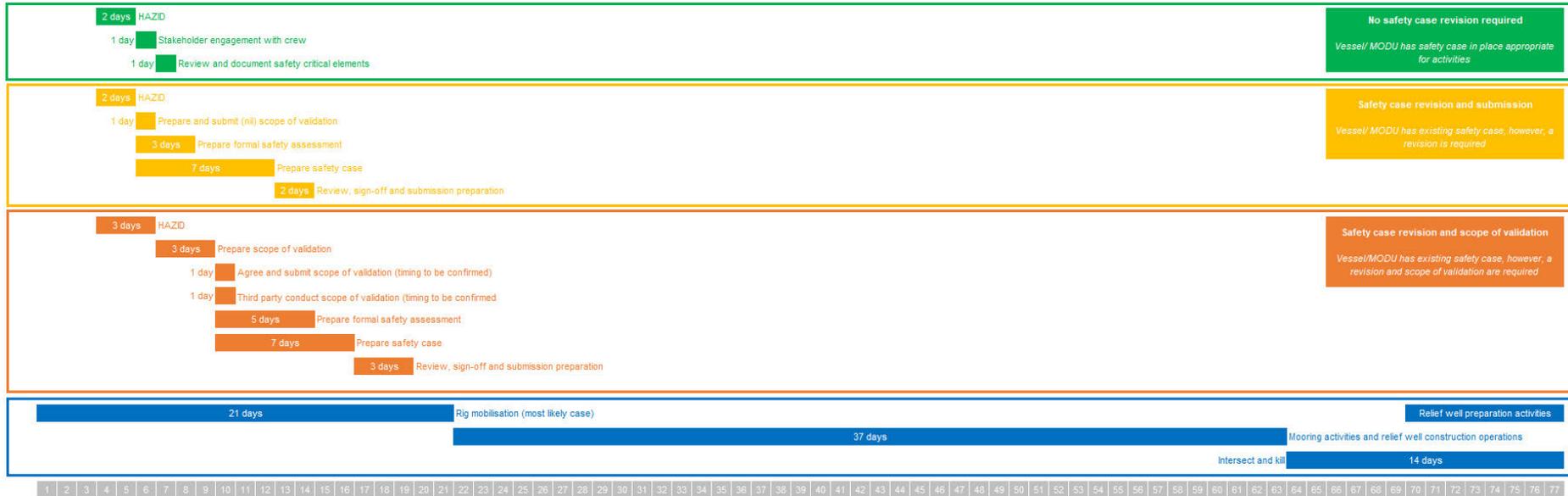


Figure 6-3: Timeline showing safety case revision timings alongside other relief well preparation activity timings for Ngujima-Yin

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Table 6-3: Safety case revision conditions and assumptions

Case	No safety case revision required	Safety case revision and submission	Safety case revision and scope of validation
Description	Vessel/MODU has a safety case in place appropriate for activities.	Vessel/MODU has an existing safety case, however, a revision is required.	Vessel/MODU has an existing safety case, however, a revision is required plus scope of validation.
Conditions/ assumptions	Assumes that existing vessel/MODU safety case covers working under the same conditions or the loss of containment is not severe enough to result in any risk on the sea surface.	Safety case timing assumes vessel/MODU selected and crew and available for workshops and safety case studies.	Safety case timing assumes vessel/ MODU selected and crew and available for workshops and safety case studies.
		Assumes nil scope of validation. This assumes that the vessel for source control allows for working in a hydrocarbon environment and control measures are already in place in the existing safety case. For MODU, it assumes that the relief well equipment is already part of the MODU facility and MODU safety case.	Validation will be required for new facilities only. The time needed for the validator to complete the review (from the last document received) and prepare validation statement is undetermined. This is not accounted for here as the safety case submission is not dependent on the validation statement, however the safety case acceptance is.
		Assumes safety case preparation is undertaken 24/7.	Assumes safety case preparation is undertaken 24/7.

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6.2.5 Source Control – Control Measure Options Analysis

The assessment described in Section 6.2.1, 6.2.2, 6.2.3 and 6.2.4 outline the primary and alternate approach respectively that Woodside would implement for relief well drilling.

Woodside has outlined the options considered against the activation, mobilisation (improved options), deployment (alternate and additional options) process described in Section 2.1.1 that provides an evaluation of:

- predicted cost associated with adopting the option
- predicted change/environmental benefit
- predicted effectiveness/feasibility of the option

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical.

- Alternative options, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control.
- Additional control measures are evaluated in terms of their ability to reduce an impact or risk when added to the existing suite of control measures.
- Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility

Options where there is not a clear justification for their inclusion or exclusion may be subject to a detailed assessment.

6.2.5.1 Activation/Mobilisation Options considered

Alternative

- Standby MODU shared for all Woodside activities
- Standby MODU shared across AEP MOU Titleholders

Additional

- Implement and maintain minimum standards for Safety Case development

Improved

- Monitor internal drilling programs for rig availability
- Monitor external activity for rig availability
- Monitor status of Registered Operators/ Approved Safety cases for rigs

6.2.5.2 Deployment Options considered

Additional

- Offset capping alternative to conventional capping stack deployment
- Dual vessel capping stack deployment
- Subsea Containment System alternative to capping stack deployment
- Pre-drilling top-holes
- Purchase and maintain mooring system
- Contract in place with Wild Well Control and Oceaneering

Improved

- Maintaining relief well drilling supplies (mud, casing, etc).

6.2.6 Activation/Mobilisation – Control Measure Options Analysis

This section details the assessment of alternative, additional or improved control measures that were considered to ensure the selected level of performance in Section 5.2 reduces the risk to ALARP. The Alternative, Additional and Improved control measures that have been assessed and selected are highlighted in green and the relevant performance of the selected control is cross referenced. Items highlighted in red have been considered and rejected on the basis that they are not feasible or the costs are clearly grossly disproportionate compared to the environmental benefit.

6.2.6.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Standby MODU shared for all Woodside activities	A standby MODU shared across all Woodside activities is likely to provide a moderate environmental benefit as it may reduce the 21-day sourcing, contracting and mobilisation time by up to 10 days (to 11 days). This would reduce the volume and duration of release and may reduce impacts on receptors and sensitivities. This may allow the well to be killed up to 10 days sooner (total of 67 days for well kill) and may result in a reduction of up to 33,580 m ³ of Vincent Crude for the worst-case credible scenario.	This option is not considered feasible for all Woodside activities as there are a large range of well depths, complexities, geologies and geophysical properties across all Woodside's operations. The large geographic area of Woodside activities also means that the MODU is unlikely to be in the correct location at the right time when required.	Even with costs shared across Woodside operations, the costs (approximately \$219M per annum, \$1,095B over the five years) of maintaining a shared MODU are considered disproportionate to the environmental benefit potentially achieved by reducing mobilisation times by up to 10 days.	The costs and complexity of having a MODU and maintaining this arrangement for the duration of the Petroleum Activities Program are disproportionate to the environmental benefit gained above finding a MODU through the MOU agreement for all spill scenarios.	No
Standby MODU shared across AEP MOU Titleholders	A standby MODU shared across all titleholders who are signatories to the AEP MOU is likely to provide a minor environmental benefit as it may reduce the 21-day sourcing, contracting and mobilisation time by up to seven days (to 14 days). This would reduce the volume and duration of release and may reduce impacts on receptors and sensitivities. This may result in a reduction of up to 23,506 m ³ of Vincent Crude for the worst-case credible scenario.	This option is not considered feasible for a number of Titleholders due to the remote distances in Australia as well as a substantial range of well depths, types, complexities, geologies and geophysical properties across a range of Titleholders	As the environmental benefit is only considered minor and the reduction in timing would only be for the mobilisation period (reduction from 21 days to 14 days) the costs are considered disproportionate to the minor benefit gained.	The costs and complexity of having a MODU and maintaining a shared arrangement for the duration of the Petroleum Activities Program are disproportionate to the environmental benefit gained above finding a MODU through the MOU agreement for all spill scenarios.	No

6.2.6.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Implement and maintain minimum standards for Safety Case development	Woodside's contingency planning consideration would be to source a rig from outside Australia with an existing Safety Case. This would require development and approval of a safety case revision for the rig and activities prior to commencing well kill operations.	This option is considered feasible and would require Woodside to develop minimum standards for safe operations for relevant Safety Case input along with maintaining key resources to support review of Safety Cases. Woodside would not be the operator for relief well drilling and would therefore not develop or submit the Safety Case revision. Woodside's role as Titleholder would be to provide minimum standard for safe operations that MODU operators would be required to meet and/or exceed.	Woodside has outlined control measures and performance standards regarding template Safety Case documentation and maintenance of resources and capability for expedited Safety Case review.	This option has been selected based on its feasibility, low cost and the potential environmental benefits it would provide.	Yes

6.2.6.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Monitor internal drilling programs for rig availability	Woodside may be conducting other campaigns that overlap with the Petroleum Activities Program, potentially providing availability of a relief well drilling rig within Woodside. The environmental benefit of monitoring other drilling programs internally is for Woodside to understand what other rigs may be rapidly available for relief well operations if required, potentially reducing the time to drill the relief well, resulting in less hydrocarbon to the environment.	Woodside monitors vessel and MODU availability through market intelligence services for location. Woodside will continually monitor other drilling and exploration activities within Australia and as available throughout the region to track rigs and explore rig availability during well intervention operations.	Associated cost of implementation is minimal to the environmental benefit gained. Woodside has outlined control measures and performance standards.	This option is a low-cost control measure with potential to reduce the volume of hydrocarbon released to the environment.	Yes
Monitor external activity for rig availability	The environmental benefit achieved by monitoring drilling programs and rig movements across industry provides the potential for increased availability of suitable rigs for relief well drilling. Additional discussions with other Petroleum Titleholders may be undertaken to potentially gain faster access to a rig and reduce the time taken to kill the well and therefore volume of hydrocarbons released.	Woodside will source a relief well drilling rig in accordance with the AEP MOU on rig sharing in the unlikely event this is required. Commercial and operational provisions do not allow WEL to discuss current and potential drilling programs in detail with other Petroleum Titleholders.	Associated cost of implementation is moderate to the environmental benefit gained. Woodside will continually engage with other Titleholders and Operators regarding activities within Australia and as available throughout the region to track rigs and explore rig availability during well intervention operations.	This option is a low-cost control measure with potential to reduce the volume of hydrocarbon released to the environment.	Yes
Monitor status of Registered Operators/ Approved Safety cases for rigs	Woodside can monitor the status of Registered Operators for rigs operating within Australia (and therefore safety case status) on a monthly basis. This allows for a prioritised selection of rigs in the event of a response with priority given to those with an existing safety case.	The environmental benefit of monitoring rigs is for Woodside to understand what other rigs may be rapidly available for relief well operations if required, potentially reducing the time to drill the relief well, resulting in less hydrocarbon to the environment.	The cost is minimal.	This option is a low-cost control measure with potential to reduce the volume of hydrocarbon released to the environment.	Yes

6.2.7 Deployment Options Analysis

6.2.7.1 Alternative Control Measures

Alternative Control Measures considered					
Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.2.7.2 Additional Control Measures

Additional Control Measures considered					
Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Offset capping alternative to conventional capping stack deployment	While the use of an offset capping system could reduce the quantity of hydrocarbon entering the marine environment, the feasibility issues surrounding SIMOPS complexities for an offset capping deployment together with mobilisation lead times for both a cap and required vessels/ support equipment, would minimise any environmental benefit gained.	<p>Technical feasibility:</p> <ul style="list-style-type: none"> The base case considerations for OIE requires a coordinated response by 4 to 7 vessels working simultaneously outside of the 500m exclusion zone. In the event of a worst-case shallow water gas discharge, the 10% LEL modelled radius extends beyond the area of activity required for the OIE deployment thereby introducing health and safety risk to any vessels required for the initial deployment of the carrier and subsequent operations with ROV during capping operations. Though manageable for single vessels, it is prohibitive for operations requiring SIMOPs with numerous vessels working at 180 degrees from one another. <p>Other factors:</p> <ul style="list-style-type: none"> Due to the OIE's size and scale, fabrication of equipment, e.g. mooring anchors, outside of the contractor's scope of supply is likely to require engagement of international suppliers, further increasing complexity and uncertainty in associated time frames. Screening indicates that mobilising some components of the OIE, based in Italy, can only be done so by sea and is likely to erode any time savings realised through killing the well via a relief well. <p>The March 2019 OSRL exercise in Europe tested deployment of the OIE and highlighted that it will require a 600+MT crane vessel for deployment to ensure there is useable hook height for the crane to conduct the lift of the carrier. Vessels with such capability and a</p>	Due to risks, uncertainty and complexity of this option, and the inability to realise any environmental gains, any cost would be disproportionate to the benefits gained.	<p>Woodside has confidence in availability of suitable relief well MODUs across the required drilling time frame thus the OIE would provide no advantage.</p> <p>Implementation of OIE has been assessed as a complex and unfeasible SIMOPs operation, precluded by a combination of the site-specific metocean and worst-case discharge conditions at the Ngujima-Yin location.</p> <p>Implementation of a novel technology such as OIE culminates in low certainty of success while at the same time increasing associated health and safety risks.</p> <p>As such the primary source control response and ALARP position remains drilling a relief well.</p>	No

		current Australian vessel safety case are not locally or readily available.			
Dual vessel capping stack deployment	While the use of dual vessel to deploy the capping system could reduce the quantity of hydrocarbon entering the marine environment, this is an unproven technology. Additionally, the feasibility issues surrounding SIMOPS complexities for multiple vessels, together with mobilisation lead times for both a cap and required vessels and support equipment, would minimise any environmental benefit.	A dual vessel deployment is somewhat feasible provided a large enough deck barge can be located. Deck barges of 120 m are not, however, very common and will present a logistical challenge to identify and relocate to the region. Further, the longer length barges may need mooring assist to remain centred over the well. The capping stack would be handed off from a crane vessel to the anchor handler vessel (AHV) work wire outside of the exclusion zone. The AHV would then manoeuvre the barge into the plume to get the capping stack over the well. In this method, the barge would be in the plume, but the AHV and all personnel would be able to maintain a safe position outside of the gas zone. The capping stack would actually be lowered on the AHV work wire so a crane would not be required on the barge.	Due to there being minimal environmental benefits gained by the prolonged lead times needed to execute this technique, plus a potential increase in safety issues, any cost would be disproportionate to the benefits gained.	Given there is minimal environmental benefit and an increase in safety issues surrounding SIMOPS and deployment in shallow waters, this option would not provide an environmental or safety benefit.	No
Subsea Containment System alternative to capping stack deployment	While the use of a subsea containment system could reduce the quantity of hydrocarbon entering the marine environment, this is an unproven technology. Additionally, the system is unlikely to be feasibly deployed and activated for at least 90 days following a blowout due to equipment requirements and logistics. No environmental benefit is therefore predicted given the release duration is 77 days before drilling of a relief well under the adopted control measure.	The timing for mobilisation, deployment and activation of the subsea containment system is likely to be longer (>90 days), than the expected 77 day relief well drilling operations based on the location, size and scale of the equipment required, including seabed piles that can only be transported by vessel.	Woodside has investigated the logistics of reducing this timeframe by pre-positioning equipment but the costs of purchasing dedicated equipment by Woodside for this PAP is not considered reasonably practical and are considered disproportionate to the environmental benefit gained.	This option would not provide an environmental benefit.	No
Pre-drilling top-holes	This option represents additional environmental impacts associated with discharge of additional drill cuttings and fluids along with benthic habitat disturbance. It is also not expected to result in a significant decrease in relief well timings	This option is not considered feasible due to the uncertainties related to the location and trajectory of the intervention well, which may vary according to the actual conditions at the time the loss of containment event occurs. Additionally, there is only expected to be a minor reduction in timing for this option of 1-2 days based on the drilling schedule. Duration to drill and kill may be reduced by 1-2 days, but top-hole may have to be relocated, due to location being unsafe or unsuitable and further works will be required each year to maintain the top holes.	Utilising an existing MODU and pre-drilling top-hole for relief well commencement would significantly increase costs associated with the activity. Estimated cost would be approximately A\$1.6 M per day over the PAP based on 2-4 days of top-hole drilling (plus standby time) for each top-hole drilled	This option would not provide an environmental benefit due to the additional environmental impacts coupled with a lack of improved relief well timings.	No
Purchase and maintain mooring system	Purchasing and maintaining a mooring system could provide a moderate environmental benefit as it may reduce equipment sourcing time. However, due to the continued need for specialists to install the equipment plus sourcing a suitable vessel, the timeframe reduction would be minimal.	Woodside is not a specialist in installing and maintaining moorings so would require specialists to come in to install the moorings and would also require specialist vessels to be sourced to undertake the work.	The cost of purchasing, storing and maintaining pre-lay mooring systems with anchors, chains, buoys and ancillary equipment is considered grossly disproportionate to the environmental benefit gained.	This option would not provide an environmental benefit as timeframe reductions would be minimal.	No
Contract in place with Wild Well Control and Oceaneering	Woodside has an agreement in place with Wild Well Control Inc and Oceaneering to provide trained personnel in the event of an incident. This will ensure that competent personnel are available in the shortest possible timeframe.	Having contracts in place to access trained, competent personnel in the event of an incident would reduce mobilization times. This option is considered reasonably practicable.	Minimal cost implications – Woodside has standing contract in place to provide assistance across all activities.	This control measure is adopted as the costs and complexity are not considered disproportionate to any environmental benefit that might be realised.	Yes

6.2.7.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Maintaining relief well drilling supplies	There is not predicted to be any reduction in relief well timing or spill duration from Woodside maintaining stocks of drilling supplies (mud, casing, cement, etc.)	It would be feasible to source some relief well drilling supplies such as casing but the actual composition of the cement and mud required will need to be specific to the well. This option is also not deemed necessary as the lead time for sourcing and mobilising these supplies is included in the 21 days for sourcing and mobilising a rig.	The capital cost of Woodside purchasing relevant drilling supplies is expected to be approximately \$600K with additional costs for storage and ongoing costs for replenishment. These costs are considered disproportionate to the environmental benefit gained.	This option would not provide an environmental benefit.	No

6.2.8 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - Implement and maintain minimum standards for Safety Case development
 - Contract in place with Wild Well Control and Oceaneering to supply trained, competent personnel
- Improved
 - Monitor internal drilling programs for MODU availability
 - Monitor external activity for MODU availability
 - Monitor status of Registered Operators / Approved Safety cases for MODUs

6.3 Source Control via Vessel SOPEP – ALARP Assessment

Alternative, Additional and Improved options have been assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.3.1 Source Control via Vessel SOPEP – Control Measure Options Analysis

6.3.1.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.3.1.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical additional control measures identified					

6.3.1.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical improved control measures identified					

6.3.2 Selected control measures

Following review of alternative, additional and improved control measures, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.4 Subsea Dispersant Injection – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5.4 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.4.1 Subsea Dispersant Injection timing

The scope of existing safety cases for Frame Agreement vessels includes all relevant activities for SSDI operations. Depending on the location and availability of vessels, Woodside expects the SSDI capability can be mobilised to site for deployment within 12 days. This may be able to be achieved faster if vessels are closer to appropriate staging areas and not already involved in other operations. The following steps are included within the indicative timeframe and many of these are expected to be concurrent activities, as shown in Figure 6-2.

1. Identifying and locating frame agreement vessels (1-2 days)
2. Identifying and locating support vessels (1-2 days)
3. Tasking and mobilising identified vessels to port (staging area) including ceasing previous operations (2-4 days)
4. Activate and mobilise SSDI equipment from service provider to port (Staging Area) (2-3 days)
5. Activate and mobilise initial dispersant stock to port (Staging Area) (1-2 days)
6. Assemble and test SSDI equipment at staging area prior to load-out (2-3 days)
7. Re-supply, provision and fuel vessels (1-2 days)
8. Load-out and secure SSDI equipment onboard vessel(1-2 days)
9. Load-out and secure dispersant on support vessel (1-2 days)
10. Contingency for unforeseen events (1 day)

6.4.2 Response Planning: Loss of well containment (MEE-01)

Following a loss of well control it may take 2-5 days to complete a risk assessment, discuss and agree appropriate control measures with NOPSEMA (Safety, Environment and Well Integrity divisions), and monitor the operating environment within the Petroleum Safety Zone around a well or facilities. Subsea dispersant injection is unlikely to be deployed until approximately day 12, subject to subsea ROV survey of the site and agreement of risk assessment and recommended control measures to ensure personnel safety.

Dispersant efficacy testing confirms that the Vincent Crude will be amendable to dispersant use with an approximately range of effectiveness from 74.4-82.4%. These results were determined in ideal laboratory conditions and represent the expected treatment of hydrocarbons that are contacted. Based on response planning assumptions outlined in Section 5.3, the subsea dispersant injection system (as part of the SFRT package) is able to deliver approximately 60-75m³ per day on a continuous 24 hour / 7 day basis.

For the purpose of capability demonstration below, Woodside has shown that once the SSDI system arrives and is able to be deployed safely, a capability exists to commence and continue SSDI until the well is killed (approximately day 77).

Table 6-4: Response Planning – Subsea Dispersant Injection

Subsea Dispersant Injection (SSDI)		Day	Week	Week	Week	Month	Month						
		1	2	3	4	5	6	7	2	3	4	2	3
Oil Release													
R1	Oil Release Rate - m ³	3,358	3,358	3,358	3,358	3,358	3,358	3,358	23,506	23,506	23,506	94,024	94,024
A Capability available - m³													
A1	Predicted oil volume treated by SSDI (lower)	0	0	0	0	0	0	0	3,600	12,600	12,600	50,400	50,400
A2	Predicted oil volume treated by SSDI (upper)	0	0	0	0	0	0	0	31,500	31,500	31,500	126,000	126,000
A3	Dispersant application volume (lower)	0	0	0	0	0	0	0	120	420	420	1,680	1,680
A4	Dispersant application volume (upper)	0	0	0	0	0	0	0	525	525	525	2,100	2,100
B Subsea release oil remaining - m³													
B1	Predicted oil volume not treated (lower)	3,358	3,358	3,358	3,358	3,358	3,358	3,358	19,906	10,906	10,906	43,624	43,624
B2	Predicted oil volume not treated (upper)	3,358	3,358	3,358	3,358	3,358	3,358	3,358	-7,994	-7,994	-7,994	-31,976	-31,976

A1 and A2 – the upper and lower volumes in m³ that subsea dispersant injection may be able to treat (based on response planning assumptions in Section 5.3 and volumes in A3 and A4). These are based on a 1:50 ratio for A1 and a 1:100 ratio for A2

A3 and A4 – the upper and lower volumes in m³ of the associated dispersant injection volumes for A1 and A2,

B1 and B2 – the upper and lower volumes in m³ of the subsea oil that is not treated on each day, following predicted treatment outlined in A1 and A2 (oil released - predicted oil volume treated (R1-A1))

Woodside acknowledges that the current SSDI capability may not treat the entirety of the oil released alone as no single response strategy or even combination of offshore response strategies will treat or remove 100% of hydrocarbons. Woodside would require the inclusion of other response techniques to be initiated concurrently. Woodside is committed to a realistic, scalable response capability that is commensurate to the level of risk and able to be practically implemented and sustained within the logistical constraints of remote areas.

6.4.3 Subsea Dispersant Injection – Control Measure Options Analysis

6.4.3.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Dedicated, contracted vessel for SSDI mobilisation and deployment (based in Australia)	<p>Reducing the mobilisation and deployment time of the SSDI through vessel standby/pre-positioning is unlikely to result in a significant change in environmental benefit. Under current arrangements the SSDI system can be on location from approximately day 12 depending on vessel availability where a dedicated, contracted vessel may enable the SSDI system on location from day 10.</p> <p>Once deployed the SSDI will be utilised to increase entrainment of released oil and to ensure safe operations for surface deployment of SFRT and other surface response techniques.</p>	<p>A modified Construction vessel or vessels with suitable remote operated underwater vehicles (ROVs) is required to load, transport and deploy the SSDI system.</p> <p>The critical element in deployment of the SSDI is the availability of an appropriate vessel. Achieving a shorter mobilisation would require the vessel's work schedule to be permanently restricted so as to permit a quicker return to Exmouth, reducing the utilisation of the vessel, or the permanent retention of a dedicated vessel. Neither option is considered reasonably practicable.</p> <p>Acceleration is limited by availability of the SSDI system mobilisation and this control measure is not expected to reduce the estimated extent and magnitude of impact from a well release on receptor locations compared with the proposed mobilisation plan using pre-identified or vessels available through frame agreements.</p>	A dedicated vessel on standby in Exmouth, ready to load is estimated to cost A\$20 m per annum. This is considered cost-prohibitive for the PAP.	This response strategy is not considered as a primary response and this control measure is not adopted as the cost, complexity and feasibility is considered disproportionate to the minor environmental benefit that might be gained	No
Shared, contracted vessel for SSDI mobilisation and deployment (shared between Titleholders)	<p>Reducing the mobilisation and deployment time of the SSDI through vessel standby/pre-positioning is unlikely to result in a significant change in environmental benefit. Under current arrangements the SSDI system can be on location from approximately day 12 depending on vessel availability where a dedicated, contracted vessel may enable the SSDI system on location from day 10.</p> <p>Once deployed the SSDI will be utilised to increase entrainment of released oil and to ensure safe operations for surface deployment of SFRT and other surface response techniques.</p>	<p>A modified Construction vessel or vessels with suitable remote operated underwater vehicles (ROVs) is required to load, transport and deploy the SSDI system.</p> <p>The critical element in deployment of the SSDI is the availability of an appropriate vessel. Achieving a shorter mobilisation would require the vessel's work schedule to be permanently restricted so as to permit a quicker return to Exmouth, reducing the utilisation of the vessel, or the permanent retention of a dedicated vessel. Neither option is considered reasonably practicable.</p> <p>This option is not considered feasible for a number of Titleholders due to the remote distances in Australia as well as a substantial range of well depths, types, complexities, geologies and geophysical properties across a range of Titleholders.</p> <p>Additionally, acceleration is limited by availability of the SSDI system mobilisation and this control measure is not expected to reduce the estimated extent and magnitude of impact from a well release on receptor locations compared with the proposed mobilisation plan using pre-identified or vessels available through frame agreements.</p>	A dedicated vessel on standby in Exmouth, ready to load is estimated to cost A\$20 m per annum. As a shared cost across a range of titleholders, this may be approximately A\$2 m each. This is considered cost-prohibitive for the PAP.	This response strategy is not considered as a primary response and this control measure is not adopted as the cost, complexity and feasibility is considered disproportionate to the minor environmental benefit that might be gained by 1-2 days of additional subsea dispersant injection.	No

6.4.3.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Pre-identifying/contracting vessels through Frame Agreements for SSDI loading and operations	Ensuring the mobilisation and deployment time of the SSDI through vessel availability/contracting strategy is likely to result in a moderate environmental benefit as using these arrangements, the SSDI will be on location from approximately Day 12.	Achieving a shorter mobilisation would require the vessel being on standby with limited duties to permit a faster return to Exmouth and this is not considered reasonably practical. Woodside has established frame agreements with vessel providers and will track availability of similar vessels. These options are both considered reasonably practicable.	Associated cost of implementation is minimal to the environmental benefit gained.	This control measure is adopted as the costs and complexity are not considered disproportionate to any environmental benefit that might be realised.	Yes

6.4.3.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical improved control measures identified					

6.4.4 Selected Control Measures

Following review of alternative, additional and improved control measures, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - Pre-identifying/ contracting vessels through Frame Agreements for SSDI loading and operations
- Improved
 - None selected

6.5 Surface Dispersant Application – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.5.1 Existing capability – Surface Dispersant Application

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges from lower to upper to incorporate operational factors such as weather, daylight, crew/vessel/aircraft location and duties prior to deployment, survey or classification society inspection requirements for vessels, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisioning, and other similar logistics and operational limitations that are beyond Woodside’s direct control.

Table 6-5: Existing Capability – Surface Dispersant Application

E Existing Capability													
E1 Existing level of surface dispersant application capability available – Aerial Dispersant Application (m ³)													
Existing capability – Surface Dispersant Application		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
By Volume – m ³													
E1.1	Predicted oil contacted by surface dispersant application (lower) – m ³	2	4	15.5	15.5	15.5	15.5	15.5	108.5	108.5	108.5	434	434
E1.2	Predicted oil dispersed by surface dispersant application (lower) – m ³	1.49	2.98	11.53	11.53	11.53	11.53	11.53	80.72	80.72	80.72	322.90	322.90
E1.3	Predicted oil contacted by surface dispersant application (upper) – m ³	6	75.75	75.75	75.75	75.75	75.75	75.75	650.25	702	753.75	2457	2457
E1.4	Predicted oil dispersed by surface dispersant application (upper) – m ³	4.94	62.42	62.42	62.42	62.42	62.42	62.42	535.81	578.45	621.09	2024.57	2024.57
E1.5	Dispersant delivery available (lower) – m ³	4	8	31	31	31	31	31	217	217	217	868	868
E1.6	Dispersant delivery available (upper) – m ³	8	101	101	101	101	101	101	867	936	1,005	3,276	3,276
By Surface Area– km ²													
E1.7	Predicted surface area treated by surface dispersant application (lower) – km ²	3	6	9	9	9	9	9	63	63	63	252	252
E1.8	Predicted surface area treated by surface dispersant application (upper) – km ²	8	20	20	20	20	20	20	220	224	228	784	784
E2 Existing level of surface dispersant application capability available – Vessel Dispersant Application (m ³)													
By Volume – m ³													
E2.1	Predicted oil contacted by surface dispersant application (lower) – m ³	0	2.5	5	5	10	10	10	75	105	105	420	420
E2.2	Predicted oil dispersed by surface dispersant application (lower) – m ³	0.00	1.86	3.72	3.72	7.44	7.44	7.44	55.80	78.12	78.12	312.48	312.48
E2.3	Predicted oil contacted by surface dispersant application (upper) – m ³	0	15	30	30	30	45	45	315	315	315	1260	1260
E2.4	Predicted oil dispersed by surface dispersant application (upper) – m ³	0.00	12.36	24.72	24.72	24.72	37.08	37.08	259.56	259.56	259.56	1038.24	1038.24
E2.5	Dispersant delivery available (lower) – m ³	0	5	10	10	20	20	20	150	210	210	840	840
E2.6	Dispersant delivery available (upper) – m ³	0	20	40	40	40	60	60	420	420	420	1,680	1,680
By Surface Area – km ²													
E2.7	Predicted surface area treated by surface dispersant application (lower) – km ²	0	1	2	2	4	4	4	30	42	42	168	168
E2.8	Predicted surface area treated by surface dispersant application (upper) – km ²	1	2	4	4	4	6	6	42	42	42	168	168

The figures above for E1 - Aerial Dispersant Application and E2 – Vessel Dispersant Application show the predicted surface oil contacted by dispersant spraying (E1.1 (lower), E1.3 (upper) and E2.1 (lower) and E2.3 (upper)) which are intended to show the volume of dispersant sprayed from available platforms contacting the floating oil. Woodside has assumed a 50-75% encounter rate of sprayed dispersant to oil.

The figures also show the predicted oil dispersed (E1.2 (lower), E1.4 (upper) and E2.2 (lower) and E2.4 (upper)) which is intended to show the effectiveness of dispersant (based on laboratory results where available) on contacted oil, along with the predicted encounter rate of dispersant sprayed to oil contacted.

Predicted surface area contacted (E1.7, E1.8, E2.7 and E2.8) is based upon a coverage for available aircraft of 3 km² per day (lower) to 4 km² per day (upper) and, for vessels, 1 km² per vessel per day.

6.5.2 Response Planning: Loss of well containment (MEE-01) (WCSS)

Deterministic modelling scenarios indicate that first shoreline impact at Muiron Islands (including the MMA) occurs within 3.5 days in the event of a loss of well containment scenario, based on the deterministic run for the minimum time to commencement of oil accumulation at any shoreline receptor (at threshold of 100 g/m²). However, the deterministic model run for the maximum cumulative oil volume accumulated (at threshold of 100 g/m²) does not contact the shoreline until approximately Day 30 at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH. This model run was selected to demonstrate how a larger scale offshore response operation would be developed and implemented.

Modelling results at defined response thresholds (>50 g/m²) where surface dispersants are likely to be effective indicate that the surface release from the Ngujima-Yin LOWC scenario is expected to be available for surface dispersant operations for up to 3 months (based on predicted dispersant effectiveness) although the model shows the spill rapidly migrating toward islands and coastlines and outside the defined dispersant Zone of Application.

Throughout the release duration, modelling also shows the surface slick moving toward WA State Waters and the mainland coast where surface dispersant application is unlikely to be an available response technique due to water depth and potential impacts of the dispersed oil plume on receptors in the water column and on the seabed.

Table 6-6: Loss of Well Containment (MEE-01) – Release volumes

Loss of Well Containment (MEE-01)		Day	Week	Week	Week	Month	Month						
		1	2	3	4	5	6	7	2	3	4	2	3
Oil on sea surface													
A	Total volume of oil released (surface) – m³	3,358	23,506	23,506	23,506	94,024	94,024						
B	Total volume of surface oil remaining after weathering (per day) – m³	1,565	10,954	10,954	10,954	43,815	43,815						

A – This volume represents the total volume of hydrocarbons released from the identified Worst-Case Credible discharge (LOWC). The total volume for this spill is released over approximately 77 days at a rate of 140 m³ / hr.

B – The Ngujima-Yin Vincent Crude contains a relatively high proportion (~58.5% by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. These compounds will persist in the marine environment. The unweathered mixture has a dynamic viscosity of 132.07 cP (at 40°C). The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 6% of the oil mass should evaporate within the first 24 hours (180 < 265 °C); a further 35.2% should evaporate over several days (265 °C < BP < 380 °C). Selective evaporation of the lower boiling-point components will lead to a shift in the physical properties of the remaining mixture, including an increase in the viscosity and pour point. Soluble aromatic hydrocarbons contribute approximately 8.7% by mass of the whole oil, with a large proportion (8.2%) in the C16-C20 range of hydrocarbons. These compounds will evaporate slowly, leaving the potential for dissolution of a proportion of them into the water.

Table 6-7: Loss of Well Containment (MEE-01) – Treatable hydrocarbons

Loss of Well Containment (MEE-01)		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
Treatable hydrocarbons following weathering													
C1	Total volume of surface oil >50 g/m² – m³	49	897	2,126	2,086	2,283	3,905	5,387	18,110	20,788	5,044	52	0
C2	Total surface area >50 g/m²– km²	1	11	20	24	24	34	50	209	232	56	1	0
Dispersible hydrocarbons													
C3	Surface oil volume >50 g/m² and viscosity <15,000 cSt – m³	49	897	2,126	2,086	2,283	3,905	5,387	18,110	20,788	5,044	52	0
C4	Surface area >50 g/m² and viscosity <15,000 cSt – km²	1	11	20	24	24	34	50	209	232	56	1	0

C1 – indicates the total remaining volume of hydrocarbons in cubic metres (m³) on the sea surface above 50 g/m². Based on the information outlined in Section 2.3.3 regarding surface concentration thresholds, this is the total volume of oil that can be treated by containment and recovery and surface dispersant spraying operations.

C2 – indicates the total surface area in square kilometres (km²) of hydrocarbons above 50 g/m². This is the total surface area of BAOAC 4 and above that can be treated by containment and recovery and surface dispersant spraying operations.

C3 – indicates the total remaining volume of hydrocarbons in cubic metres (m³) on the sea surface above 50 g/m² and below 10,000 cSt. This is the total volume of oil that can potentially be treated by surface dispersant spraying operations.

C4 – indicates the total surface area in square kilometres (km²) of hydrocarbons above 50 g/m² and below 10,000 cSt. This is the total surface area of BAOAC 4 and above that can potentially be treated by surface dispersant spraying operations.

6.5.2.1 Response Planning Need: Loss of Well Containment (MEE-01) – Summary

Offshore response operations will always be guided by Operational Monitoring to target the thickest part of the slick, typically BAOAC 5 – continuous true oil colour with a surface oil concentration >200 g/m² and BAOAC 4 – discontinuous true oil colour with a surface oil concentration between 50 and 200 g/m².

For a surface release, the thickest oil is typically in the leading edge of the slick, driven by wind and currents. As the spill continues to weather and spread over a number of days and weeks, the surface concentration and surface area of continuous oil colour spreads and reduces to discontinuous true oil colour and finally sheen as shown below.

The response need is calculated from the surface area and volume of treatable hydrocarbons following weathering as outlined in Table 6-7 above. In order to target response operations, Woodside would deploy surface dispersant spraying at the leading edge. This approach would result in the greatest volume and surface area treated by surface dispersant operations but may also limit the geographic area and effectiveness of containment and recovery as these operations cannot be conducted under or near the surface dispersant spraying operations due to personnel safety reasons. In evaluating the response need for offshore operations, surface dispersant application is prioritised for BAOAC 5.

Table 6-8: Loss of Well Containment (MEE-01) – Response Planning Need

Loss of Well Containment (MEE-01)		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
D	Response Planning Need												
D1	Bonn Agreement Oil Appearance Code (BAOAC) 5 – Continuous True oil colour												
	Surface area of BAOAC 5 (>200 g/m ²) – km ²	0	0	1	1	1	6	7	5	17	2	0	0
	Surface area of BAOAC 5 (>200 g/m ²) and <15,000 cSt – km ²	0	0	1	1	1	6	7	5	17	2	0	0
	Volume of surface oil BAOAC 5 (>200 g/m ²) – m ³	0	0	313	300	193	1948	1972	1084	4305	595	0	0
	Volume of surface oil BAOAC 5 (>200 g/m ²) and <15,000 cSt - m ³	0	0	313	300	193	1948	1972	1084	4305	595	0	0
D2	Bonn Agreement Oil Appearance Code (BAOAC) 4 – Discontinuous True oil colour												
	Surface area of BAOAC 4 (50-200 g/m ²) – km ²	1	11	20	24	24	34	50	209	232	35	1	0
	Surface area of BAOAC 4 (50-200 g/m ²) and <15,000 cSt – km ²	1	11	20	24	24	34	50	209	232	35	1	0
	Volume of surface oil BAOAC 4 (50-200 g/m ²) – m ³	49	897	1813	1786	2090	1958	3415	17,026	16,298	4449	52	0
	Volume of surface oil BAOAC 4 (50-200 g/m ²) and <15,000 cSt - m ³	49	897	1813	1786	2090	1958	3415	17,026	16,298	4449	52	0
D3	Bonn Agreement Oil Appearance Code (BAOAC) 3, 2 and 1 – Sheen												
	Volume of surface oil BAOAC 3, 2 and 1 (<50 g/m ²) – m ³	4	2	2	47	2	8778	9562	120,969	153,595	196,312	679,847	222,847

6.5.2.2 Surface Dispersant Operations: Loss of Well Containment (MEE-01): Surface area and surface volume

Surface Dispersant operations using vessels and aircraft would target the identified heavy (BAOAC 4 and 5) patches of oil as this technique is able to treat larger volumes and surface areas than containment and recovery and is subject to a window of opportunity (prior to spreading below 50 g/m² and/or viscosity increasing above 15,000 cSt). A map illustrating the distribution of the thickest oil for MEE-01 is shown in Figure 2-6.

The surface area of thickest oil (BAOAC 5 and <15,000 cSt) available for surface dispersant application peaks at approximately 9 km² on Day 16 where surface concentration and viscosity thresholds are met. By this time, Woodside would expect 14-48 Fixed Wing Aerial Dispersant Contract (FWADC) aircraft units over Week 3, along with 7 larger aircraft units over that week from OSRL, to be operating from airfields in Exmouth and Dampier. These aircraft could cover approximately 63-224 km² for Week 3 and contacting from 108.5-702 m³ plus 42 vessels conducting dispersant spraying covering approximately 42 km² and treating 105-315 m³ of surface oil.

Woodside acknowledges that the current surface dispersant application capability may not treat the entirety of the oil released alone as no single response strategy or even combination of offshore response strategies will treat or remove 100% of the surface hydrocarbons in either surface area or volume. Woodside would require the inclusion of other response techniques to be initiated concurrently and recognises that multiple passes from aircraft and vessels may be required to meet the required dispersant to oil ratio. Woodside is committed to a realistic, scalable response capability that is commensurate to the level of risk and able to be practically implemented and sustained within the logistical constraints of remote areas.

6.5.3 Surface Dispersant Application – Control measure options analysis

6.5.3.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Dedicated Response Vessel in region (exclusive to Woodside)	The environmental benefits associated with surface dispersant application are described above. The additional environmental benefit obtained from immediate access to this equipment, permitting deployment as soon as conditions became favourable, would result in a negligible environmental benefit ([25-40 m ³ of oil contacted resulting in approximately 12-26 m ³ of oil treated) based on one operation.	Chartering and equipping additional vessels on standby has been considered. The option is reasonably practicable but the sacrifice (charter costs and organisational complexity) is significant, particularly when compared with the anticipated availability of vessel and FWADC resources which have a similar dispersant delivery capacity and are available from Day 2 to treat the spill. The effectiveness of this control (weather dependency, availability and survivability) is rated as very low.	The cost A(\$15 m per annum for the PAP) and organisational complexity of employing a dedicated response vessel is considered disproportionate to the minor environmental benefit to be realised by implementing this control.	This option is not adopted as it has low effectiveness and cost is disproportionate to the minimal potential environmental benefit.	No
Dedicated Response Vessel in region (shared resource)	The environmental benefit would be similar to that described above for Woodside integrated fleet vessels.	Additional resources and capability can be contracted should the need arise, and dispersant build-up is capable of satisfying additional demand.	The cost and complexity of implementing and maintain this alternative control measure is considered high given the predicted effectiveness. Even with consideration of shared costs, the minor benefit of this control measure does not justify the cost.	This option is not adopted as the complexity and cost are disproportionate to the minimal potential environmental benefit.	No

6.5.3.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Lease/purchase additional spray systems and/or dispersant stocks (based at Exmouth/Dampier)	Purchase of additional system(s) and/or dispersant stocks would not provide a significant environmental benefit compared to the current capability in place.	Time to set up and mobilise a marine charter vessel is ~10 days, at which point existing surface dispersant application systems are available for loading onto vessels. Adding additional spray systems would allow for extra surface dispersant application capacity but is unlikely to reduce deployment times for this strategy.	For the WCCS, additional surface dispersant (vessel) spray systems and large quantities of dispersant are already available through AMOSC, AMSA and OSRL therefore the cost is considered disproportionate to the minor benefit gained.	This option is not adopted as the current capability meets the need.	No
Train additional Woodside personnel in Exmouth to coordinate vessel dispersant application	Limited environmental benefit to be gained by training additional personnel.	Current capability meets need. Woodside has a pool of trained, competent offshore responders / team leaders at strategic locations to ensure timely and sustainable response. Additional personnel are available through current contracts with AMOSC and OSRL and agreements with AMSA. Marine standards & guidelines ensure vessel masters are competent for their roles. Regular audits of oil spill response organisations ensure training and competency is maintained.	Minor additional cost regarding training and maintenance of competency.	This option is not adopted as the current capability meets the need.	No

6.5.3.3 Improved Control Measures

Improved Control Measures considered					
Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Locate vessel spraying equipment on additional in-field support vessel(s)	This option may achieve minor incremental improvements in surface oil and residual oil volumes similar to those described for integrated fleet vessels. However, given the likely vessel re-supply times involved to/from the offshore spill location, this option is unlikely to realise material environmental benefits additional the capability selected.	Woodside currently has dispersant spray systems pre-located on vessels used in-field during cargo transfer activities. Consideration of equipping additional vessels with similar equipment was made but is not being carried through to implementation.	The option is reasonably practicable and the cost (charter and operational/maintenance costs) is expected to be moderate, particularly when compared with the ability to rapidly commence spraying operations, subject to safety considerations but Woodside considers the existing control measures to be sufficient for the need.	This option is not adopted as the current capability meets the need.	No

6.5.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.6 Containment and Recovery – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.6.1 Existing Capability – Containment and Recovery

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours/7 days. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

Table 6-9: Existing Capability – Containment and Recovery

E	Existing Capability												
E3	Existing level of containment and recovery capability available (m ³ recovered per day)	Day	Week	Week	Week	Month	Month						
Existing capability – Containment and Recovery		1	2	3	4	5	6	7	2	3	4	2	3
	By Volume – m ³												
E3.1	Predicted oil recovered by containment and recovery (lower) – m ³	0	45	45	68	90	113	135	945	1,260	1,260	5,040	5,040
E3.2	Predicted oil recovered by containment and recovery (upper) – m ³	68	135	203	270	405	405	405	3,915	4,725	4,725	18,900	18,900
	By Surface Area– km ²												
E3.3	Predicted surface area treated by containment and recovery (lower) – km ²	0	2	2	3	4	5	6	42	56	56	224	224
E3.4	Predicted surface area treated by containment and recovery (upper) – km ²	1	2	3	4	6	6	6	58	70	70	280	280

For E3 – Containment and Recovery, the range of figures shows the predicted recovery rates of surface oil at 50 g/m² for the lower figures and 200 g/m² for the upper figures using conventional booming systems in a J or U configuration with an encounter rate of 25-50% surface oil meaning 75%-50% of the area within the booming system has surface oil that is not within threshold concentrations <50 g/m².

6.6.2 Response Planning: Loss of well containment (MEE-01) (WCSS)

Deterministic modelling indicates that first shoreline impact at response threshold (>100 g/m²) Muiron Islands (including MMA) occurs within 3.5 days for the MEE-01.

Modelling results at defined response thresholds (>50 g/m²) where containment and recovery is likely to be effective indicate that the surface release from MEE-01 is expected to be available for containment and recovery operations for up to 36 days. From approximately Day 36, modelling predicts there are no longer sufficient surface hydrocarbons to recover due to spreading and weathering. Viscosity alone is unlikely to prevent containment and recovery operations, but very high viscosity combined with low surface concentrations (<50 gm²) are unlikely to continue to provide a net environmental benefit.

To remove the majority of the surface hydrocarbons before shoreline contact would require the removal of the majority of the initial surface slick (3072 m³ available surface oil >50 g/m² on Day 2-3). Based on volume, this capability would be approximately 2-9 containment and recovery operations recovering 22.5-67.5 m³ per day each. Based on surface area, this capability would need to cover a peak of 74 km² on Day 17 requiring approximately 74 containment and recovery operations to recover all the available hydrocarbons on that day. This level of capability does not exist in Australia and the logistics to support it could not be managed by small ports and harbours in Exmouth/ Dampier regions. Woodside would expect to have 224-280 operational unit undertaking containment and recovery activities across month 2, covering 8km² per day and recovering 180-540 m³ per day.

Woodside has considered pre-positioning additional resources and including additional capability on vessels and shore locations, to allow for the treatment of some additional surface hydrocarbons on Days 1-3, thereby potentially limiting the migration of surface hydrocarbons above threshold concentration in Exmouth and associated coastlines. These options are considered below with selected control measures implemented to improve the capability. As this spreading and weathering occur, there will be limitations on available surface area that can be treated as shown in Section 5.6

Implementing further capability is not expected to provide a significant environmental benefit as only a minor portion of the available surface hydrocarbons would be treated using this technique.

Table 6-10: Loss of well containment – Release volumes

Containment and Recovery		Day	Week	Week	Week	Month	Month						
		1	2	3	4	5	6	7	2	3	4	2	3
	Oil on sea surface												
A	Total volume of oil released (surface) – m ³	3,358	3,358	3,358	3,358	3,358	3,358	3,358	23,506	23,506	23,506	94,024	94,024
B	Total volume of surface oil remaining after weathering (per day) – m ³	1,565	1,565	1,565	1,565	1,565	1,565	1,565	10,954	10,954	10,954	43,815	43,815

A – This volume represents the total volume of hydrocarbons released from the identified Worst-Case Credible discharge (LOWC). The total volume for this spill is released over approximately 77 days at a rate of 140 m³ / hr.

B – The Ngujima-Yin Vincent Crude contains a relatively high proportion (~58.5% by mass) of hydrocarbon compounds that will not evaporate at atmospheric temperatures. These compounds will persist in the marine environment. The unweathered mixture has a dynamic viscosity of 132.07 cP (at 40°C). The mixture is composed of hydrocarbons that have a wide range of boiling points and volatilities at atmospheric temperatures, and which will begin to evaporate at different rates on exposure to the atmosphere. Evaporation rates will increase with temperature, but in general about 6% of the oil mass should evaporate within the first 24 hours (180 < 265 °C); a further 35.2% should evaporate over several days (265 °C < BP < 380 °C. Selective evaporation of the lower boiling-point components will lead to a shift in the physical properties of the remaining mixture, including an increase in the viscosity and pour point. Soluble aromatic hydrocarbons contribute approximately 8.7% by mass of the whole oil, with a large proportion (8.2%) in the C16-C20 range of hydrocarbons. These compounds will evaporate slowly, leaving the potential for dissolution of a proportion of them into the water.

Table 6-11: Loss of well containment – Treatable hydrocarbons

Containment and Recovery		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
C	Treatable hydrocarbons following weathering												
C1	Total volume of surface oil >50 g/m² – m³	49	897	2,126	2,086	2,283	3,905	5,387	18,110	20,788	5,044	52	43,815
C2	Total surface area >50 g/m²– km²	1	11	20	24	24	34	50	209	232	56	1	0

C1 – indicates the total remaining volume of hydrocarbons in cubic metres (m³) on the sea surface above 50 g/m². Based on the information outlined in Section 2.3.3 regarding surface concentration thresholds, this is the total volume of oil that can be treated by containment and recovery and surface dispersant spraying operations.

C2 – indicates the total surface area in square kilometres (km²) of hydrocarbons above 50 g/m². This is the total surface area of BAOAC 4 and above that can be treated by containment and recovery and surface dispersant spraying operations.

6.6.2.1 Response Planning Need: Loss of well containment (MEE-01) (WCSS) Summary

Offshore response operations will always be guided by Operational Monitoring to target the thickest part of the slick, typically BAOAC 5 – continuous true oil colour with a surface oil concentration >200 g/m² and BAOAC 4 – discontinuous true oil colour with a surface oil concentration between 50 and 200 g/m². For a surface release, the thickest oil is typically in the leading edge of the slick, driven by wind and currents. As the spill continues to weather and spread over a number of days and weeks, the surface concentration and surface area of continuous oil colour spreads and reduces to discontinuous true oil colour and finally sheen as shown above.

The response need is calculated from the surface area and volume of treatable hydrocarbons following weathering as outlined in Table 6-11 above. While surface dispersant operations target the leading edge of the slick where surface concentration and viscosity thresholds are met, containment and recovery operations would be deployed behind the surface dispersant application area to target discrete patches of thick oil at BAOAC 4 and 5 and remaining oil that is not dispersed.

Table 6-12: Loss of well containment – Response Planning Need

Loss of Well Containment (MEE-01)		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
D	Response Planning Need												
D1	Bonn Agreement Oil Appearance Code (BAOAC) 5 – Continuous True oil colour												
	Surface area of BAOAC 5 (>200 g/m ²) – km ²	0	0	1	1	1	6	7	5	17	2	0	0
	Surface area of BAOAC 5 (>200 g/m ²) and <15,000 cSt – km ²	0	0	1	1	1	6	7	5	17	2	0	0
	Volume of surface oil BAOAC 5 (>200 g/m ²) – m ³	0	0	313	300	193	1948	1972	1084	4305	595	0	0
	Volume of surface oil BAOAC 5 (>200 g/m ²) and <15,000 cSt - m ³	0	0	313	300	193	1948	1972	1084	4305	595	0	0
D2	Bonn Agreement Oil Appearance Code (BAOAC) 4 – Discontinuous True oil colour												
	Surface area of BAOAC 4 (50-200 g/m ²) – km ²	1	11	20	24	24	34	50	209	232	35	1	0
	Surface area of BAOAC 4 (50-200 g/m ²) and <15,000 cSt – km ²	1	11	20	24	24	34	50	209	232	35	1	0
	Volume of surface oil BAOAC 4 (50-200 g/m ²) – m ³	49	897	1813	1786	2090	1958	3415	17,026	16,298	4449	52	0
	Volume of surface oil BAOAC 4 (50-200 g/m ²) and <15,000 cSt - m ³	49	897	1813	1786	2090	1958	3415	17,026	16,298	4449	52	0
D3	Bonn Agreement Oil Appearance Code (BAOAC) 3, 2 and 1 – Sheen												
	Volume of surface oil BAOAC 3, 2 and 1 (<50 g/m ²) – m ³	4	2	2	47	2	8778	9562	120,969	153,595	196,312	679,847	222,847

Woodside acknowledges that the current containment and recovery capability may not treat the entirety of the oil released alone as no single response strategy or even combination of offshore response strategies will treat or remove 100% of the surface hydrocarbons in either surface area or volume. Woodside would require the inclusion of other response techniques to be initiated concurrently with the containment and recovery operation. Woodside is committed to a realistic, scalable response capability that is commensurate to the level of risk and able to be practically implemented and sustained within the logistical constraints of remote areas.

6.6.3 Containment and Recovery – Control Measure Options Analysis

6.6.3.1 Alternative Control Measures

Alternative Control Measures considered					
<i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Dedicated Response Vessel in region (exclusive to Woodside)	The environmental benefits associated with containment and recovery are described above. The additional environmental benefit obtained from immediate access to this equipment, permitting deployment as soon as conditions became favourable, would result in a negligible environmental benefit – 22.5-67.5 m ³ of oil recovered per operating unit per day.	Chartering and equipping additional vessels on standby has been considered. The option is reasonably practicable but the sacrifice (charter costs and organisational complexity) is significant, particularly when compared with the anticipated effectiveness of dispersant operations to treat the spill which are available from Day 2. The effectiveness of this control (encounter rate, weather dependency, availability) is rated as very low.	The cost (A\$15 m per annum for the PAP) and organisational complexity of employing a dedicated response vessel is considered disproportionate to the insignificant environmental benefit to be realised by implementing this control.	This option is not adopted as it has low effectiveness and cost is disproportionate to the minimal potential environmental benefit.	No
Dedicated Response Vessel in region (shared resource)	The environmental benefit would be similar to that described above for Woodside integrated fleet vessels.	Additional containment and recovery resources and capability can be contracted should the need arise.	The cost and complexity of implementing and maintain this alternative control measure is considered high given the predicted effectiveness. Even with consideration of shared costs, the minor benefit of this control measure does not justify the cost.	This option is not adopted as it has low effectiveness and cost is disproportionate to the minimal potential environmental benefit.	No
Regional oil spill response contractor	This option may achieve minor incremental improvements in surface oil and residual oil volumes similar to those described for integrated fleet vessels. However, given the likely vessel transit times involved to/from the offshore spill location, this option is unlikely to realise material environmental benefits additional the capability selected.	No current private response contracting capability exists that would significantly improve response timing or effectiveness in the Dampier or Exmouth regions.	N/A – not currently feasible	This option is not adopted as it is not currently feasible.	No

6.6.3.2 Additional Control Measures

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Train additional Woodside personnel in Exmouth to coordinate containment and recovery operations	Limited environmental benefit to be gained by training additional personnel as the number of operations will be governed by the availability of response vessels.	Current capability meets need. Woodside has a pool of trained, competent offshore responders / team leaders at strategic locations to ensure timely and sustainable response. Additional personnel are available through current contracts with AMOSC and OSRL and agreements with AMSA. Marine standards & guidelines ensure vessel masters are competent for their roles. Regular audits of oil spill response organisations ensure training and competency is maintained.	Minor additional cost regarding training and maintenance of competency.	This option is not adopted as the current capability meets the need.	No

6.6.3.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Prioritise rapid sweep systems (NOFI Buster series, Desmi Speed Sweep, etc.) for mobilisation from service providers	Although each rapid sweep containment and recovery operation could remove an additional 10-45 m ³ per operation per day, the environmental benefit of containment and recovery as a response technique is minor. This response technique is not considered to be as effective as surface dispersant application to prevent hydrocarbons reaching the shore.	Rapid sweep systems allow containment and recovery operations to be undertaken at speeds of up to 3 knots. This allows for greater encounter rates and surface coverage. AMOSC has recently purchased a Speed Sweep system and a number of NOFI systems are available through Mutual Aid arrangements.	Additional costs for prioritising rapid sweep systems are negligible	Although containment and recovery remains a low-efficiency response technique, this control measure is adopted as the costs and complexity are not considered disproportionate to any environmental benefit that might be realised.	Yes
Prioritise active booming systems (Ro-skim, etc.) for mobilisation from service providers	Although each active booming system could remove an additional 10-45 m ³ per operation per day, the environmental benefit of containment and recovery as a response technique is minor. This response technique is not considered to be as effective as surface dispersant application to prevent hydrocarbons reaching the shore.	Active booming systems allow containment and recovery operations without the need for an additional skimming system. This allows for greater effectiveness and continued skimming operations. Active booming systems are available through OSRL and Mutual Aid arrangements and would be prioritised for mobilisation.	Additional costs for prioritising active booming systems are negligible	Although containment and recovery remains a low-efficiency response technique, this control measure is adopted as the costs and complexity are not considered disproportionate to any environmental benefit that might be realised.	Yes
Pre-position additional containment and recovery equipment (Exmouth)	It is unlikely that faster mobilisation and deployment from Exmouth would significantly increase response effectiveness or removal of oil to create an increased environmental benefit	Facilities at Exmouth are currently limited by tides and draft for the loading and unloading of vessels with heavy plant and equipment. Access to the Navy Pier to provide an additional loading location is subject to Defence Force approval and cannot be relied upon for rapid approval in the event of an oil spill.	Limited additional cost considerations.	This option is not adopted as the complexity is disproportionate to the minimal potential environmental benefit due to the low efficiency of containment and recovery as a response technique.	No
Re-locate containment and recovery equipment on in-field vessels	The additional environmental benefit obtained from faster mobilisation and deployment would be limited by safety considerations during the initial period following the release. Once operations were considered safe, the vessels would increase recovery capacity by 22.5-67.5 m ³ /day per operation. The limited oil treatment of containment and recovery and expected effectiveness of dispersant application from vessels indicates the preference would be for greater surface dispersant application capability.	Operations close to the release location are unlikely to be feasible during the initial period due to the uncertainty of the situation and potential safety impacts on personnel. Vessels may require time to return to port and load equipment, fuel etc. to allow response duration to be the maximum possible once deployed. Shortening the timeframes for vessel availability would require equipment to be pre-positioned on-board vessels.	The cost and organisational complexity of employing two dedicated response vessels (approximately A\$15 m per year per vessel) is considered disproportionate to the limited environmental benefit to be realised by adopting this control	This option is not adopted as the cost is disproportionate to the minimal potential environmental benefit due to the low efficiency of containment and recovery as a response technique.	No
Purchase or pre-position larger skimmers	The environmental benefit of containment and recovery for the loss of well control scenario is minor. This response strategy is not considered to be as effective as surface dispersant application to prevent hydrocarbons reaching the shore.	Larger systems such as the Desmi Octopus or Transrec with >200 m ³ per hour capacity, could improve recovery rates, however are not readily available in Australia and not easily compatible with booming, waste and hydraulic power systems. If required and deemed to be of benefit, these systems are available through Service Providers such as OSRL.	Cost of purchasing Octopus system is A\$600,000 plus additional transport, training and commissioning costs and ongoing maintenance costs. Cost for pre-positioning in Australia for the life of the asset/activity is greater than the purchase costs.	This option is not adopted as the cost is disproportionate to the minimal potential environmental benefit due to the low efficiency of containment and recovery as a response technique.	No

6.6.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected

- Additional
 - Prioritise rapid sweep systems (NOFI Buster series, Desmi Speed Sweep, etc.) for mobilisation from service providers
 - Prioritise active booming systems (Ro-skim, etc.) for mobilisation from service providers
- Improved
 - None selected

6.7 Shoreline Protection and Deflection - ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.7.1 Existing Capability – Shoreline Protection and Deflection

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.7.2 Response Planning: Ngujima-Yin Operations – Shoreline Protection and Deflection

Planning for shoreline protection is based upon identification of Response Protection Areas (RPAs) from deterministic modelling and the logistics associated with deploying protection at these locations. The response planning scenarios indicate that this would require effective mobilisation to priority shorelines and maintenance of protection until operational monitoring confirms that the locations were no longer at risk. Woodside has identified the RPAs from deterministic modelling results provided from specific scenarios.

The deterministic modelling indicates that first shoreline impact at Muiron Islands (including the MMA) occurs within 3.5 days in for the Loss of Well Containment scenario (MEE-01), and at Exmouth, Ningaloo MP (State), and Ningaloo Coast (WH) within 2.5 days for the Cargo Tank LOC (MEE-05), based on the deterministic run for the minimum time to commencement of oil accumulation at any shoreline receptor (at threshold of 100 g/m²). However, the deterministic model run for the maximum cumulative oil volume accumulated (at threshold of 100 g/m²) does not contact the shoreline until approximately Day 30 at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH for the LOWC (MEE-01). This model run was selected to demonstrate how a larger scale offshore response operation would be developed and implemented.

Tactical response plans exist for many of the RPAs identified. The plans identify values and sensitivities that would be protected at location. Modelling does not predict that all priority protection shorelines will be at risk of contact at the same time. Therefore, to allow for the best use of available shoreline protection and deflection resources, operational monitoring (OM01 and OM02) will inform the response, targeting RPAs where contact is predicted above response threshold levels.

Table 6-13 below outlines the capability required (number of RPAs predicted to be impacted) against the capability available (number of shoreline protection and deflection operations that can be mobilised and deployed). As can be seen from the table below. Woodside’s capability exceeds the response planning need identified for shoreline protection and deflection operations at identified RPAs.

Table 6-13: Response Planning – Shoreline Protection and Deflection

Ngujima-Yin Loss of Well Containment (MEE-01) and Cargo Tank LOC (MEE-05)		Day	Week	Week	Week	Month	Month	Month						
		1	2	3	4	5	6	7	2	3	4	2	3	4
A	Capability Required													
A1	Number of RPAs contacted (> 100 g/m²) – LOWC (MEE-01)	0	0	0	2	0	0	0	0	0	0	5	11	4
A3	Number of RPAs contacted (> 100 g/m²) – Cargo Tank LOC (MEE-05)	0	0	1	0	1	0	0	1	0	0	0	0	0
B	Capability Available (operations per day)													
B1	SPD operations available – per day (lower)	0	15	15	20	20	20	20	70	70	70	330	330	330
B2	SPD operations available – per day (upper)	1	15	15	20	20	20	20	84	84	84	336	336	336
C	Capability Gap (operations per day)													
C1	SPD operations gap – per day (lower)	0	-15	-15	-18	-20	-20	-20	-70	-70	-70	-325	-319	-326
C2	SPD operations gap – per day (upper)	-1	-15	-15	-16	-20	-20	-20	-84	-84	-84	-326	-314	-328

A1, A2 and A3 – the number of Response Protection Areas contacted by surface hydrocarbons above 100 g/m²

B1 and B2 – the upper and lower number of shoreline protection and deflection operations available (based on response planning assumptions in Section 5.7),

C1 and C2 – the gap between the upper and lower number of shoreline protection and deflection operations required in A1, A2 and A3 compared to the operations available in B1 and B2

The full list of shoreline RPAs is included in Table 3-1 and the full suite of Tactical Response Plans (TRPs) available for the identified RPAs is listed in ANNEX E: Tactical Response Plans. These TRPs detail response aims and methods specific to each location. Pre-emptive mobilisation of equipment and personnel would commence as soon as practicable prior to oil contact. Additional resources would be mobilised depending on the scale of the event to increase the length or number of shorelines being protected.

A shoreline protection and deflection response would be launched only when monitoring and modelling indicated that contact could occur within 3-5 days and operational monitoring operations identify spill heading towards RPA(s).

6.7.3 Shoreline Protection and Deflection – Control Measure Options Analysis

6.7.3.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Pre-position equipment at Response Protection Areas (RPAs)	Additional environmental benefit of having equipment prepositioned is considered minor. Equipment is currently available to protect RPAs and additional shorelines, within estimated minimum times until shoreline contact at RPAs, enabling mobilisation of the selected delivery options.	<p>The incremental environmental benefit associated with these delivery options is considered minor and unlikely to reduce the environmental consequence of a significant hydrocarbon release beyond the adopted delivery options. Considering the highly unlikely nature of a significant hydrocarbon release and the costs and organisational complexity associated with prepositioning and maintenance of equipment, the sacrifice is considered disproportionate to the limited environmental benefit that might be realised.</p> <p>Furthermore, these options would conflict with the mutual aid philosophy being adopted under the selected delivery options.</p> <p>The selected delivery options for shoreline protection and deflection meet the relevant objectives of this control measure and do not require prepositioned or additional equipment in Exmouth.</p>	Total cost to preposition protection/ deflection packages at each site of potential impact would be approximately A\$6,100 per package per day.	This option is not adopted as the existing capability meets the need.	No

6.7.3.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Supplemented stockpiles of equipment in Exmouth to protect additional shorelines	<p>Additional equipment would increase the number of receptor areas that could be protected from hydrocarbon contact. However, current availability of personnel and equipment is capable of protecting up to 30 km of shoreline, commensurate with the scale and progressive nature of shoreline impact. Additional stocks would be made available from international sources if long term up scaling were necessary.</p> <p>A reduction in environmental consequence from a 'B' rating (serious long-term impacts) is unlikely to be realised as a result of having more equipment available locally.</p>	<p>The incremental environmental benefit associated with these delivery options is considered minor and unlikely to reduce the environmental consequence of a significant hydrocarbon release beyond the adopted delivery options. Considering the highly unlikely nature of a significant hydrocarbon release and the costs and organisational complexity associated with prepositioning and maintenance of equipment, the sacrifice is considered disproportionate to the limited environmental benefit that might be realised.</p> <p>Furthermore, these options would conflict with the mutual aid philosophy being adopted under the selected delivery options.</p> <p>The selected delivery options for shoreline protection and deflection meet the relevant objectives of this control measure and do not require prepositioned or additional equipment in Exmouth.</p>	Total cost for purchase supplemental protection and deflection equipment would be approximately A\$455,000 per package.	This option is not adopted as the existing capability meets the need.	No

Additional trained personnel	The level of training and competency of the response personnel ensures the shoreline protection and deflection operation is delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside <i>People & Global Capability Surge Labour Requirement Plan</i> . Additional personnel sourced from contracted OSRO's (OSRL/AMOSC) to manage other responders. Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No
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6.7.3.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/mobilisation time	Hydrocarbons are predicted to strand after a period of approximately 3 days (MEE-05) therefore allowing enough time to re-locate existing equipment, personnel and other resources to the most appropriate areas.	Response teams, trained personnel, contracted oil spill response service providers, government agencies and the associated mitigation equipment required to enact an initial protection and deflection response will be available for mobilisation within 24-48hrs of activation. Additional equipment from existing stockpiles and oil spill response service providers can be on scene within days. Given modelling does not predict shoreline accumulation until approximately 3 days (MEE-05), Woodside considers that there is sufficient time for deployment of protection and deflection operations prior to impact.	The cost of establishing a local stockpile of new mitigation equipment (including protection and deflection boom) closer to the expected hydrocarbon stranding areas is not commensurate with the need.	This option is not adopted as the existing capability meets the need.	No

6.7.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.8 Shoreline Clean-up – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.8.1 Existing Capability – Shoreline Clean-up

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.8.2 Response planning: Ngujima-Yin Operations – Shoreline Clean-up

Woodside has assessed existing capability against the WCCS and has identified that the range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside’s capability can cover all required shoreline clean-up operations for the PAP.

The deterministic modelling indicates that first shoreline impact at Muiron Islands (including the MMA) occurs within 3.5 days in for the Loss of Well Containment scenario (MEE-01), and at Exmouth, Ningaloo MP (State), and Ningaloo Coast (WH) within 2.5 days for the Vessel Collision (MEE-05), based on the deterministic run for the minimum time to commencement of oil accumulation at any shoreline receptor (at threshold of 100 g/m²). However, the deterministic model run for the maximum cumulative oil volume accumulated (at threshold of 100 g/m²) indicates 13,442 m³ to contact the shoreline at approximately Day 30 at Exmouth, Ningaloo MP (State), and Ningaloo Coast WH for the LOWC (MEE-01). Whilst this is a larger volume than that predicted for the Cargo Tank LOC (MEE-05) to the latter has a faster time to shoreline contact at feasible response thresholds (>100 g/m²) therefore the results from both scenarios are included in Table 6-14 and Table 6-15 below.

Due to the time of contact predicted shoreline clean-up and deterministic modelling predicting ongoing stranding after this peak, this response may not be as time critical compared to other response techniques and the scale will depend on the success of other techniques preventing oiling occurring. Further, the potential scale and remoteness of a response coupled with the uncertainty of which locations will be affected precludes the stockpiling or repositioning of equipment specific to shorelines. The most significant constraint is accommodation and transport of personnel in Exmouth to undertake clean-up operations and to manage wastes generated during the response effort. From previous assessment of facilities in Exmouth, Woodside estimates that current accommodation can cater for a range of 500-700 personnel per day.

Woodside has identified several options which could be mobilised to achieve defined response objectives. Evaluation considers the benefit in terms of the time to respond and the scale of response made possible by each option. The evaluation of possible control measures is summarised in Section 6.8.3. The full list of shoreline RPAs is included in Table 3-1.

Table 6-14: Response Planning – Shoreline Clean-up – MEE-01

Shoreline Clean-up (Phase 2)	Day	Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month	Month
	1	2	3	4	5	6	7	2	3	4	2	3	4	
Oil on shoreline (from deterministic modelling) m ³														
Shoreline accumulation (above 100 g/m ²) - m ³	0	0	0	1,001	0	0	0	0	0	0	0	20,958	10,731	4,164
Oil remaining following response operations - m ³	0	0	0	0	501	250	125	0	0	0	0	0	10,479	126
A Capability Required (number of operations)														
A1 SCU operations required (lower)	0	0	0	100	50	25	13	0	0	0	0	2,096	2,121	429
A2 SCU operations required (upper)	0	0	0	143	72	36	18	0	0	0	0	10,479	10,605	2,145
B Capability Available (number of operations)														
B1 SCU operations available - Stage 2 - Manual (lower)	0	15	15	20	20	20	20	105	105	105	560	560	560	560
B2 SCU operations available - Stage 2 - Manual (upper)	0	15	15	20	20	20	20	140	140	140	560	560	560	560
C Capability Gap														
C1 SCU operations gap (lower)	0	-15	-15	80	30	5	-7	-105	-105	-105	1,536	1,561	-131	
C2 SCU operations gap (upper)	0	-15	-15	123	52	16	-2	-140	-140	-140	9,919	10,045	1,585	

A1 and A2 – the number of Shoreline Clean-up operations required based on the hydrocarbon volumes ashore above 100 g/m²

B1 and B2 – the upper and lower number of shoreline clean-up operations available (based on response planning assumptions in Section 5.8),

C1 and C2 – the gap between the upper and lower number of shoreline clean-up operations required in A1 and A2 compared to the operations available in B1 and B2

Table 6-15: Response Planning – Shoreline Clean-up – MEE-05

Shoreline Clean-up (Phase 2)	Day	Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month	Month
	1	2	3	4	5	6	7	2	3	4	2	3	4	
Oil on shoreline (from deterministic modelling) m ³														
Shoreline accumulation (above 100 g/m ²) - m ³	0	0	3,036	0	38	0	0	2,319	0	0	0	0	0	0
Oil remaining following response operations - m ³	0	0	0	1,518	759	399	199	0	1,160	580	290	145	72	
A Capability Required (number of operations)														
A1 SCU operations required (lower)	0	0	304	152	80	40	20	232	116	58	29	14	7	
A2 SCU operations required (upper)	0	0	434	217	114	57	28	331	166	83	145	72	36	
B Capability Available (number of operations)														
B1 SCU operations available - Stage 2 - Manual (lower)	0	15	15	20	20	20	20	105	105	105	560	560	560	
B2 SCU operations available - Stage 2 - Manual (upper)	0	15	15	20	20	20	20	140	140	140	560	560	560	
C Capability Gap														
C1 SCU operations gap (lower)	0	-15	289	132	60	20	0	127	11	-47	-531	-546	-553	
C2 SCU operations gap (upper)	0	-15	419	197	94	37	8	191	26	-57	-415	-488	-524	

A1 and A2 – the number of Shoreline Clean-up operations required based on the hydrocarbon volumes ashore above 100 g/m²

B1 and B2 – the upper and lower number of shoreline clean-up operations available (based on response planning assumptions in Section 5.8),

C1 and C2 – the gap between the upper and lower number of shoreline clean-up operations required in A1 and A2 compared to the operations available in B1 and B2

6.8.3 Shoreline Clean-up - Control measure options analysis

6.8.3.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.8.3.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional trained personnel available	The level of training and competency of the response personnel ensures the shoreline clean-up operation is delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside <i>People & Global Capability Surge Labour Requirement Plan</i> . Additional personnel sourced from contracted OSROs (OSRL/AMOSC) to manage other responders. Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained personnel deployed	Maintaining a span of control of 200 competent personnel is deemed manageable and appropriate for this activity. Additional personnel conducting clean-up activities may be able to complete the clean-up in a shorter timeframe, but modelling predicts ongoing stranding of hydrocarbons over a period of weeks. Managing a smaller, targeted response is expected to achieve an environmental benefit through ensuring the shoreline clean-up response is suitable and scalable for the shoreline substrate and sensitivity type. This will ensure there is no increased impact from the shoreline clean-up through the presence of unnecessary personnel and equipment.	The figure of 200 personnel is broken down to include on 1-2 x Trained Supervisors managing 8-10 personnel/labour hire responders. This allows for multiple operational teams to operate along the extended shoreline at different locations. Typically, an additional 30-50% of the tactical workforce is required to support ongoing operations including On-Scene control, logistics, safety/medical/welfare and transport. Personnel on site will include members with the appropriate specialties to ensure an efficient shoreline clean-up. Additional personnel are available through existing contracts with oil spill response organisations, labour hire organisations and environmental panel contractors	Additional Specialist Personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No

6.8.3.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/mobilisation time	Given modelling does not predict the maximum volume of the floating or shoreline impacts at threshold to reach until day 30 (Loss of Well	Response teams, trained personnel, contracted oil spill response service providers, government agencies and the associated	The cost of establishing a local stockpile of new shoreline clean-up equipment closer to	This option is not adopted as the existing capability meets the need.	No

	<p>Containment (MEE-01)), Woodside considers that there is sufficient time for deployment of clean-up operations prior to impact.</p>	<p>mitigation equipment required to enact an initial protection and deflection response will be available for mobilisation within 24-48 hrs of activation.</p> <p>Additional equipment from existing stockpiles and oil spill response service providers can be on scene within days.</p> <p>The maximum volume of hydrocarbons are not predicted to accumulate at threshold until day 30 at Ningaloo (Exmouth, Coast, Australian and State MP) (loss of Well Containment (MEE-01)) therefore allowing enough time to re-locate existing equipment, personnel and other resources to the most appropriate areas.</p>	<p>the expected hydrocarbon stranding areas is not commensurate with the need.</p>		
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6.8.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.9 Wildlife Response – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.9.1 Existing Capability – Wildlife Response

Woodside's existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside's direct control.

6.9.2 Wildlife Response - Control Measure Options Analysis

6.9.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Direct contracts with service providers	This option duplicates the capability accessed through AMOSC and OSRL and would compete for the same resources. Does not provide a significant increase in environmental benefit.	These delivery options provide increased effectiveness through more direct communication and control of specialists. However, no significant net benefit is anticipated.	Duplication of capability – already subscribed to through contracts with AMOSC and OSRL	This option is not adopted as the existing capability meets the need.	No

6.9.2.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional wildlife treatment systems	<p>The selected delivery options provide access to call-off contracts with selected specialist providers. The agreements ensure that these resources can be mobilised to meet the required response objectives, commensurate with the progressive nature of environmental impact and the time available to monitor hydrocarbon plume trajectories.</p> <p>Provides response equipment and personnel by Day 3. The additional cost in having a dedicated oiled wildlife response (equipment and personnel) in place is disproportionate to environmental benefit.</p> <p>These selected delivery options provide capacity to carry out an oiled wildlife response if contact is predicted; and to scale up the response if required to treat widespread contamination.</p> <p>Current capability meets the needs required and there is no additional environmental benefit in adopting the improvements.</p>	<p>Although hydrocarbon contact above wildlife response threshold concentrations (>10 g/m²) with offshore waters is expected from day one (MEE-01), given the low likelihood of such an event occurring and that the current capability meets the need, the cost of implementing measures to reduce the mobilisation time is considered disproportionate to the benefit. Additionally, the remote offshore location of the release site, with an earliest impact on day 12, provides sufficient opportunity for the ongoing monitoring and surveillance operations to inform the scale of the response.</p> <p>Numbers of oiled wildlife are expected to be low in the remote offshore setting of the oiled wildlife response, given the distance from known aggregation areas.</p> <p>Oiled wildlife response capacity would be addressed for open Commonwealth waters through the AMOSC arrangements, as informed by operational monitoring.</p> <p>The cost and organisational complexity of this approach is moderate, and the overall delivery effectiveness is high.</p>	Additional wildlife response resources could total A\$1,700 per operational site per day.	This option is not adopted as the existing capability meets the need.	No

Additional trained wildlife responders	Numbers of oiled wildlife are expected to be low in the remote offshore setting of the oiled wildlife response, given the distance from known aggregation areas. The potential environmental benefit of training additional personnel is expected to be low.	Current numbers meet the needs required and additional personnel are available through existing contracts with oil spill response organisations and environmental panel contractors. Additional equipment and facilities would be required to support ongoing response, depending on the scale of the event and the impact to wildlife and maybe sourced via existing contracts with OSROs. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.	Additional wildlife response personnel cost A\$2,000 per person per day	This option is not adopted as the existing capability meets the need.	No
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6.9.2.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster mobilisation time for wildlife response	Response time is limited by specialist personnel mobilisation time. Current timing is sufficient for expected first shoreline contact. This control measure provides increased effectiveness through faster mobilisation of specialists. However, no significant net environmental benefit is expected due to shoreline stranding times.	Pre-positioning vessels or equipment would reduce mobilisation time for oiled wildlife response activities. However, given the effectiveness of an oiled wildlife response is expected to be low, an earlier response would provide a marginal increase in environmental benefit.	Wildlife response packages to preposition at vulnerable sites identified through the deterministic modelling cost A\$700 per package per day. The cost of having dedicated equipment and personnel available to respond faster is considered disproportionate to the environmental benefit.	This option is not adopted as the existing capability meets the need.	No

6.9.3 Selected control measures

Following review of alternative, additional and improved control measures, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.10 Waste Management – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.10.1 Existing Capability – Waste Management

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.10.2 Waste Management - Control Measure Options Analysis

6.10.2.1 Alternative Control Measures

Alternative Control Measures considered					
<i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.10.2.2 Additional Control Measures

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Increased waste storage capability	The procurement of waste storage equipment options on the day of the event will allow immediate response and storage of collected waste. The environmental benefit of immediate waste storage is to reduce ecological consequence by safely securing waste, allowing continuous response operations to occur.	Access to Veolia’s storage options provides the resources required to store and transport sufficient waste to meet the need. Access to waste contractors existing facilities enables waste to be stockpiled and gradually processed within the regional waste handling facilities. Additional temporary storage equipment is available through existing contract and arrangements with OSRL. Existing arrangements meet identified need for the PAP.	Cost for increased waste disposal capability would be approximately A\$1,300 per m ³ . Cost for increased onshore temporary waste storage capability would be approximately A\$40 per unit per day.	This option is not adopted as the existing capability meets the need.	No

6.10.2.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response time	The access to Veolia waste storage options provides the resources to store and transport waste, permitting the wastes to be stockpiled and gradually processed within the regional waste handling facilities. Bulk transport to Veolia’s licensed waste management facilities would be undertaken via controlled-waste-licensed vehicles and in accordance with Environmental Protection (Controlled Waste) Regulations 2004.	Woodside already maintains an equipment stockpile in Exmouth to enable shorter response times to incidents. This stockpile includes temporary waste storage equipment. Woodside has access to stockpiles of waste storage and equipment in Dampier and Exmouth through existing contracts and arrangements.	The incremental benefit of having a dedicated local Woodside owned stockpile of waste equipment and transport is considered minor and cost is considered disproportionate to the benefit gained given predicted shoreline contact times.	This option is not adopted as the existing capability meets the need.	No

	<p>The environmental benefit from successful waste storage will reduce pressure on the treatment and disposal facilities reducing ecological consequences by safely securing waste. In addition, waste storage and transport will allow continuous response operations to occur.</p> <p>This delivery option would increase known available storage, eliminating the risk of additional resources not being available at the time of the event. However, the environmental benefit of Woodside procuring additional waste storage is considered minor as the risk of additional storage not being available at the time of the event is considered low and existing arrangements provide adequate storage to support the response.</p>				
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6.10.3 Selected control measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.11 Scientific Monitoring – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5 with those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are clearly disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.11.1 Existing Capability – Scientific Monitoring

Woodside's existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/ vessel/ aircraft/ vehicle location and duties, survey or classification society inspection requirements, overflight/ port/ quarantine permits and inspections, crew/ pilot duty and fatigue hours, refuelling/ re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside's direct control.

6.11.2 Scientific Monitoring – Control Measure Options Analysis

6.11.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Analytical laboratory facilities closer to the likely spill affected area	The environmental consideration of having access to suitable laboratory facilities in Exmouth/Karratha to carry out the hydrocarbon analysis would provide faster turnaround in reporting of results only by a matter days (as per the time to transport samples to laboratories).	SM01 water quality monitoring requires water samples to be transported to NATA-rated laboratories in Perth or over to the East coast. Consider the benefit of laboratory access and transportation times to deliver water samples and complete lab analysis. There is a time lag from collection of water samples to being in receipt of results and confirming hydrocarbon contact to sensitive receptors).	Laboratory facilities and staff available at locations closer to the spill affected area can reduce reporting times only to a moderate degree (days) with associated high costs of maintaining capability do not improve the environmental benefit.	This control measure is not adopted as the costs and complexity are considered disproportionate to any environmental benefit that might be realised.	No
Dedicated contracted SMP vessel (exclusive to Woodside)	Would provide faster mobilisation time of scientific monitoring resources, however, the environmental benefit associated with faster mobilisation time would be minor compared to selected options.	Chartering and equipping additional vessels on standby for scientific monitoring has been considered. The option is reasonably practicable but the sacrifice (charter costs and organisational complexity) is significant, particularly when compared with the anticipated availability of vessels and resources within in the required timeframes. The selected delivery provides capability to meet the scientific monitoring objectives, including collection of pre-emptive data where baseline knowledge gaps are identified for receptor locations where spill predictions of time to contact are >10 days. The effectiveness of this alternative control (weather dependency, availability and survivability) is rated as very low	The cost and organisational complexity of employing a dedicated response vessel is considered disproportionate to the potential environmental benefit by adopting these delivery options.	This control measure is not adopted as the costs and complexity are considered disproportionate to any environmental benefit that might be realised.	No

6.11.2.2 Additional control measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Determine baseline data needs and provide implementation plan in the event of an unplanned	Address resourcing needs to collect post spill (pre-contact) baseline data as spill expands in the event of a loss of well control from the PAP activities.	As part of Woodside's Scientific Monitoring Program the following are considered and incorporated into the spill response approach and the SMP Standby Service contract. <ul style="list-style-type: none"> Woodside rely on existing environmental baseline for receptors which have predicted hydrocarbon contact (above 	No cost associated with baseline for SM01.	This control measure is adopted as the costs and complexity are not disproportionate to any environmental benefit that might be realised.	Yes

hydrocarbon release		<p>environment threshold) <10 days and acquiring pre-emptive data in the event of a loss of well control from the PAP activities based on receptors predicted to have hydrocarbon contact >10 days.</p> <ul style="list-style-type: none"> • Ensure there is appropriate baseline for key receptors for all geographic locations that are potentially impacted <10 days of spill event. • Address resourcing needs to collect pre-emptive baseline as spill expands in the event of a LOWC/ cargo tank LOC from the PAP activities. • For SM01 pre-emptive baseline is not required as marine water quality is assumed to be pristine. 			
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6.11.2.3 Improved Control Measures considered

Improved Control Measures considered					
<i>Improved, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical improved control measures identified					

6.11.3 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - Determine baseline data needs and provide implementation plan in the event of an unplanned hydrocarbon release
- Improved
 - None selected

6.11.4 Operational Plan

Key actions from the Scientific Monitoring Program Operational Plan for implementing the response are outlined in **Table 6-16**.

Table 6-16: Scientific monitoring program operational plan actions

Responsibility	Action
Activation	
CIMT Planning (CIMT Planning – Environment Unit)	Mobilises SMP Lead/Manager and SMP Coordinator to the CIMT Planning Section.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager and SMP Coordinator)	Constantly assesses all outputs from OM01, OM02 and OM03 (Annex B) to determine receptor locations and receptors at risk. Confirm sensitive receptors likely to be exposed to hydrocarbons, timeframes to specific receptor locations and which SMPs are triggered. Review baseline data for receptors at risk.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager and SMP Coordinator)	SMP co-ordinator stands up SMP Standby contractor. Stands up subject matter experts, if required.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Establish if, and where, pre-contact baseline data acquisition is required. Determines practicable baseline acquisition program based on predicted timescales to contact and anticipated SMP mobilisation times. Determines scope for preliminary post-contact surveys during the Response Phase. Determines which SMP activities are required at each location based on the identified receptor sensitivities.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	If response phase data acquisition is required, stand up the contractor SMP teams for data acquisition and instruct them to standby awaiting further details for mobilisation from the IMT.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	SMP standby contractor, to prepare the Field Implementation Plan. Prepare and obtain sign-off of the Response Phase SMP work plan and Field Implementation Plan. Update the IAP.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Liaise with CIMT Logistics, and determine the status and availability of aircraft, vessels and road transportation available to transport survey personnel and equipment to point of departure. Engage with SMP standby contractor, SMP Manager and CIMT Logistics to establish mobilisation plan, secure logistics resources and establish ongoing logistical support operations, including:

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Responsibility	Action
	<ul style="list-style-type: none"> • Vessels, vehicles and other logistics resources • Vessel fit-out specifications (as • Detailed in the Scientific Monitoring Program Operational Plan • Equipment storage and pick-up locations • Personnel pick-up/airport departure locations • Ports of departure • Land based operational centres and forward operations bases, Accommodation and food requirements.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Confirm communications procedures between Woodside SMP team, SMP standby contractor, SMP Team Leads and Operations Point Coordinator.
Mobilisation	
CIMT Logistics	Engage vessels and vehicles and arrange fitting out as specified by the mobilisation Plan Confirm vessel departure windows and communicate with the Jacob's SMP Manager. Agree SMP mobilisation timeline and induction procedures with the Division and Sector Command Point(s).
CIMT Logistics	Coordinate with SMP standby contractor to mobilise teams and equipment according to the logistics plan and Sector induction procedures.
SMP Survey Team Leads	SMP Survey Team Leader(s) coordinate on-ground/on-vessel mobilisations and support services with the Sector Command point(s).

6.11.5 ALARP and Acceptability Summary

ALARP and Acceptability Summary		
Scientific Monitoring		
ALARP Summary	x	All known reasonably practicable control measures have been adopted
	x	No additional, alternative and improved control measures would provide further benefit
		No reasonably practical additional, alternative, and/or improved control measure exists
	<p>The resulting scientific monitoring capability has been assessed against the credible spill scenarios. The range of techniques provide an ongoing approach to monitoring operations to assess and evaluate the scale and extent of impacts.</p> <p>All known reasonably practicable control measures have been adopted with the cost and organisational complexity of these options determined to be Moderate and the overall delivery effectiveness considered Medium. The SMP's main objectives can be met, with the addition of one alternative control measures to provide further benefit.</p>	
Acceptability Summary	<ul style="list-style-type: none"> • The control measures selected for implementation manage the potential impacts and risks to ALARP. • In the event of a hydrocarbon spill for the PAP, the control measures selected, meet or exceed the requirements of Woodside Management System and industry best-practice. • Scientific Monitoring control and activities are compliant with relevant environmental legislation and regulations, including the EPBC Act. • Throughout the PAP, relevant Australian standards and codes of practice will be followed to evaluate the impacts from a loss of well control. • Stakeholder consultation undertaken for the PAP did not receive feedback regarding concerns for Scientific Monitoring activities in response to a hydrocarbon spill. • The level of impact and risk to the environment has been considered with regards to the principles of ESD; and risks and impacts from a range of identified scenarios were assessed in detail. The control measures described consider the conservation of biological and ecological diversity, through both the selection of control measures and the management of their performance. The control measures have been developed to account for credible case scenarios, and uncertainty has not been used as a reason for postponing control measures. 	
<p>On the basis from the impact assessment above and in Section 6.8 of the EP Woodside considers the adopted controls discussed manage the impacts and risks associated with implementing scientific monitoring activities to a level that is ALARP and acceptable.</p>		

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7 ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES

The implementation of response techniques may modify the impacts and risks identified in the EP and response activities can introduce additional impacts and risks from response operations themselves. Therefore, it is necessary to complete an assessment to ensure these impacts and risks have been considered and specific measures are put in place to continually review and manage these further impacts and risks to ALARP and Acceptable levels. A simplified assessment process has been used to complete this task which covers the identification, analysis, evaluation and treatment of impacts and risks introduced by responding to the event.

7.1 Identification of impacts and risks from implementing response techniques

Each of the control measures can modify the impacts and risks identified in the EP. These impacts and risks have been previously assessed within the scope of the EP. Refer to the EP for details regarding how these risks are being managed. They are not discussed further in this document.

- Atmospheric emissions
- Routine and non-routine discharges
- Physical presence, proximity to other vessels (shipping and fisheries)
- Routine acoustic emissions vessels
- Lighting for night work/navigational safety
- Invasive marine species
- Collision with marine fauna
- Disturbance to Seabed

Additional impacts and risks associated with the control measures not included within the scope of the EP include:

- Drill cuttings and drilling fluids environmental impact assessment for relief well drilling
- Vessel operations and anchoring
- Presence of personnel on the shoreline
- Increase in entrained hydrocarbons
- Toxicity of dispersant
- Human presence (manual cleaning)
- Vegetation cutting
- Additional stress or injury caused to wildlife
- Secondary contamination from the management of waste

7.2 Analysis of impacts and risks from implementing response techniques

The table below compares the adopted control measures for this activity against the environmental values that can be affected when they are implemented.

Table 7-1: Analysis of risks and impacts

	Environmental Value						
	Soil and Groundwater	Marine Sediment Quality	Water Quality	Air Quality	Ecosystems/Habitat	Species	Socio-Economic
Operational monitoring	✓		✓	✓		✓	
Source control		✓	✓	✓	✓		
Subsea dispersant injection		✓	✓	✓	✓	✓	✓
Surface dispersant application		✓	✓	✓	✓	✓	✓
Containment and recovery			✓	✓		✓	✓
Shoreline protection and deflection	✓	✓			✓	✓	✓
Shoreline clean-up	✓	✓			✓	✓	✓
Oiled wildlife				✓	✓	✓	
Scientific monitoring	✓	✓	✓	✓			
Waste management	✓	✓	✓				✓

7.3 Evaluation of impacts and risks from implementing response techniques

Drill cuttings and drilling fluids environmental impact assessment for relief well drilling

The identified potential impacts associated with the discharge of drill cuttings and fluids during a relief well drilling activity include a localised reduction in water and seabed sediment quality, and potential localised changes to benthic biota (habitats and communities).

A number of direct and indirect ecological impact pathways are identified for drill cuttings and drilling fluids as follows:

- Temporary increase in total suspended solids (TSS) in the water column;
- Attenuation of light penetration as an indirect consequence of the elevation of TSS and the rate of sedimentation;
- Sediment deposition to the seabed leading to the alteration of the physio-chemical composition of sediments, and burial and potential smothering effects to sessile benthic biota; and
- Potential contamination and toxicity effects to benthic and in-water biota from drilling fluids.

Potential impacts from the discharge of cuttings range from the complete burial of benthic biota in the immediate vicinity of the well site due to sediment deposition, smothering effects from raised sedimentation concentrations as a result of elevated Total Suspended Solids (TSS), changes to the physico-chemical properties of the seabed sediments (particle size distribution and potential for reduction in oxygen levels within the surface sediments due to organic matter degradation by aerobic bacteria) and subsequent changes to the composition of infauna communities to minor sediment loading above background and no associated ecological effects. Predicted impacts are generally confined to within a few hundred metres of

the discharge point (International Association of Oil and Gas Producers 2016) (ie within the EMBA for a hydrocarbon spill event).

The discharge of drill cuttings and unrecoverable fluids from relief well drilling is expected to increase turbidity and TSS levels in the water column, leading to an increased sedimentation rate above ambient levels associated with the settlement of suspended sediment particles in close proximity to the seabed or below sea surface, depending on location of discharge. Cuttings with retained (unrecoverable) drilling fluids are discharged below the water line at the MODU location, resulting in drill cuttings and drilling fluids rapidly diluting, as they disperse and settle through the water column. The dispersion and fate of the cuttings is determined by particle size and density of the retained (unrecoverable) drilling fluids, therefore, the sediment particles will primarily settle in proximity to the well locations with potential for localised spread downstream (depending on the speed of currents throughout the water column and seabed) (IOGP 2016). The finer particles will remain in suspension and will be transported further before settling on the seabed.

These conclusions were supported by discharge modelling which was undertaken by Woodside in support of the Greater Enfield Development Environment Plan. Modelling results indicating that the TSS plume of suspended cuttings will typically disperse to the south-west while oscillating with the tide and diminish rapidly with increasing distance from the well locations. Maximum TSS concentrations predicted for 100 m; 250 m and 1 km distances from the wellsite were 7, 5 and 1 mg/l, respectively. Furthermore, water column concentrations below 10 mg/l remain within 235 m of the discharge location for each modelled well. For all well discharge locations (outside of direct discharge sites), TSS concentration did not exceed 10 mg/l. Nelson et al. (2016) identified <10 mg/L as a no effect or sub-lethal minimal effect concentration.

The low sensitivity of the deep-water benthic communities/habitats within and in the vicinity of relief well locations, combined with the relatively low toxicity of WBM and NWBMs, no bulk discharges of NWBM and the highly localised nature and scale of predicted physical impacts to seabed biota indicate that any localised impact would likely be of a slight magnitude (especially when considering the broader consequence of the LOC event a relief well drilling activity would be responding too).

Vessel operations and anchoring

Typical booms used in containment and recovery operations are designed to float, meaning that fauna capable of diving, such as cetaceans, marine turtles and seasnakes can readily avoid contact with the boom. Impacts to species that inhabit the water column such as sharks, rays and fish are not expected. Additionally, some fauna, such as cetaceans, are likely to detect and avoid the spill area, and are not expected to be present in the proximity of containment and recovery operations.

During the implementation of response techniques, where water depths allow, it is possible that response vessels will be required to anchor (e.g. during shoreline surveys). The use of vessel anchoring will be minimal and likely to occur when the impacted shoreline is inaccessible via road. Anchoring in the nearshore environment of sensitive receptor locations will have the potential to impact coral reef, seagrass beds and other benthic communities in these areas. Recovery of benthic communities from anchor damage depends on the size of anchor and frequency of anchoring. Impacts would be highly localised (restricted to the footprint of the vessel anchor and chain) and temporary, with full recovery expected.

Distribution of entrained hydrocarbons

Surface dispersant application is intended to treat floating hydrocarbons, thereby reducing the risk of air breathing marine fauna (e.g. cetaceans, dugongs, marine turtles, seabirds and shorebirds) from becoming oiled. It also has the potential to reduce/eliminate contamination of sensitive intertidal habitats such as mangroves, coral reefs, salt marshes and sandy shores (recreational and tourist areas) through the reduction in shoreline loadings.

Chemical dispersants act to break up hydrocarbons by reducing surface tension between the oil and the surrounding water. Dispersants, whether applied on the surface or subsea, result in the breakup of hydrocarbons into micron-sized droplets, which are easier to disperse throughout the water column. These small, dispersed hydrocarbons droplets are degraded by bacteria due to the increased surface area presented by the small droplets. The application of dispersants can enhance biodegradation and dissolution, reducing the volume of hydrocarbons that have the potential to impact shorelines.

Surface application of dispersants results in the micron-sized droplets being mixed into the upper layer of the water column, usually the first 10 to 20 m, through wave and wind energy. These elevated concentrations of dispersed hydrocarbons within the upper layer of the water column are rapidly diluted through vertical and horizontal mixing. The application of surface dispersants may result in a greater risk that water column and subtidal habitats could be exposed to elevated concentrations of dispersed hydrocarbons.

Toxicity of dispersants

The evaluation of the potential impacts to the receiving environment needs to consider not only the redistribution of hydrocarbons into the water column, but also the potential toxic nature of the dispersant applied and the toxicity effects of dispersed hydrocarbons.

The potential toxicity to the marine environment can be from the chemical/dispersant itself but also chemical dispersion of hydrocarbon can increase the concentration of toxic hydrocarbon compounds in the water column (Anderson et al 2014). Subtidal habitats and communities such as coral reefs, seagrass meadows, plankton, fish, known spawning grounds and periods of increased reproductive outputs (early life stages of fish and invertebrates i.e. meroplankton) are susceptible to toxic effects of chemically dispersed hydrocarbons.

Presence of personnel on the shoreline

Presence of personnel on the shoreline during shoreline operations could potentially result in disturbance to wildlife and habitats. During the implementation of response techniques, it is possible that personnel may have minimal, localised impacts on habitats, wildlife and coastlines. The impacts associated with human presence on shorelines during shoreline surveys may include:

- Damage to vegetation/habitat to gain access to areas of shoreline oiling;
- Damage or disturbance to wildlife during shoreline surveys;
- Removal of surface layers of intertidal sediments (potential habitat depletion); and
- Excessive removal of substrate causing erosion and instability of localised areas of the shoreline.

Human presence

Human presence for manual clean-up operations may lead to the compaction of sediments and damage to the existing environment especially in sensitive locations such as mangroves and turtle nesting beaches. However, any impacts are expected to be localised with full recovery expected.

Waste generation

Implementing the selected response techniques will result in the generation of the following waste streams that will require management and disposal:

- Liquids (recovered oil/water mixture), recovered from containment and recovery and shoreline clean-up operations
- Semi-solids/solids (oily solids), collected during containment and recovery and shoreline clean-up operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during containment and recovery and shoreline clean-up operations and oiled wildlife response.

If not managed and disposed of correctly, wastes generated during the response have the potential for secondary contamination similar to that described above, impacts to wildlife through contact with or ingestion of waste materials and contamination risks if not disposed of correctly onshore.

Cutting back vegetation could allow additional oil to penetrate the substrate and may also lead to localised habitat loss. However, any loss is expected to be localised in nature and lead to an overall net environmental benefit associated with the response by reducing exposure of wildlife to oiling.

Additional stress or injury caused to wildlife

Additional stress or injury to wildlife could be caused through the following phases of a response:

- Capturing wildlife
- Transporting wildlife
- Stabilisation of wildlife
- Cleaning and rinsing of oiled wildlife
- Rehabilitation (e.g. diet, cage size, housing density)
- Release of treated wildlife

Inefficient capture techniques have the potential to cause undue stress, exhaustion or injury to wildlife, additionally pre-emptive capture could cause undue stress and impacts to wildlife when there are uncertainties in the forecast trajectory of the spill. During the transportation and stabilisation phases there is the potential for additional thermoregulation stress on captured wildlife. Additionally, during the cleaning process, it is important personnel undertaking the tasks are familiar with the relevant techniques to ensure that further injury and the removal of water proofing feathers are managed and mitigated. Finally, during the release phase it's important that wildlife is not released back into a contaminated environment.

7.4 Treatment of impacts and risks from implementing response techniques

In respect of the impacts and risks assessed the following treatment measures have been adopted. It must be recognised that this environmental assessment is seeking to identify how to maintain the level of impact and risks at levels that are ALARP and of an acceptable level rather than exploring further impact and risk reduction. It is for this reason that the treatment measures identified in this assessment will be captured in Operational Plans, Tactical Response Plans, and/or First Strike Plans.

Vessel operations and access in the nearshore environment

- The boom will be monitored and maintained to ensure trapped fauna are released as early as possible, with Containment and Recovery activities occurring in daylight hours only (Performance Standard (PS) 23.1)
- If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore

benthic environments with a preference for areas of sandy seabed where they can be identified (PS 23.1, PS 26.1, PS 29.1).

- Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (PS2 6.2, PS 29.2)

Distribution of entrained hydrocarbons

- Only apply surface dispersants within the Zone of Application and on BAOAC 4 and 5 (PS 19.1)

Toxicity of dispersants

- OSCA approved dispersants prioritised for surface and subsea use (PS 15.1, PS 19.2)

Presence of personnel on the shoreline

- Oversight by trained personnel who are aware of the risks (PS 29.5)
- Trained unit leader's brief personnel of the risks prior to operations (PS 29.6)

Human Presence

- Shoreline access route (foot, car, vessel and helicopter) with the least environmental impact identified will be selected by a specialist in SCAT operations (PS 7.)
- Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves. (PS 29.3)

Waste generation

- All shoreline clean-up sites will be zoned and marked before clean-up operations commence (PS 27.4)
- Removal of vegetation will be limited to moderately or heavily oiled vegetation (PS 29.4)
- Teams will segregate liquid and solid wastes at the earliest opportunity (PS 35.1).

Additional stress or injury caused to wildlife

- The boom will be monitored and maintained to ensure trapped fauna are released as early as possible, with Containment and Recovery activities occurring in daylight hours only (PS 23.1)
- Oiled wildlife operations (including hazing) would be implemented with advice and assistance from the Oiled Wildlife Advisor from the DBCA, and in accordance with the processes and methodologies described in the WA OWRP and the relevant regional plan (PS 33.1).

8 ALARP CONCLUSION

An analysis of alternative, additional and improved control measures has been undertaken to determine their reasonableness and practicability. The tables in Section 6 document the considerations made in this evaluation. Where the costs of an alternative, additional, or improved control measure have been determined to be clearly disproportionate to the environmental benefit gained from its adoption it has been rejected. Where this is not considered to be the case the control measure has been adopted.

The risks from a hydrocarbon spill have been reduced to ALARP because:

- Woodside has a significant hydrocarbon spill response capability to respond to the WCCS through the control measures identified.
- New and modified impacts and risks associated with implementing response techniques have been considered and will not increase the risks associated with the activity.
- A consideration of alternative, additional, and improved control measures identified any other control measures that delivered proportionate environmental benefit compared to the cost of adoption for this activity ensuring that:
 - All known, reasonably practicable control measures have been adopted.
 - No additional, reasonably practicable alternative and/or improved control measures would provide further environmental benefit.
 - No reasonably practical additional, alternative, and/or improved control measure exists.
- A structured process for considering alternative, additional, and improved control measures was completed for each control measure.
- The evaluation was undertaken based on the outputs of the WCCS so that the capability in place is sufficient for all other scenario from this activity.
- The likelihood of the WCCS spill has been ignored in evaluating what was reasonably practicable.

9 ACCEPTABILITY CONCLUSION

Following the ALARP evaluation process, Woodside deems the hydrocarbon spill risks and impacts have been reduced to an acceptable level by meeting all of the following criteria:

- Techniques are consistent with Woodside's processes and relevant internal requirements including policies, culture, processes, standards, structures and systems.
- Relevant persons/ organisations are consulted and any claims or objections are considered. Levels of risk/ impact are aligned with the uniqueness of, and/or the level of protection assigned to the environment, its sensitivity to pressures introduced by the activity, and the proximity of activities to sensitive receptors, and have been aligned with Part 3 of the EPBC Act.
- Selected control measures meet requirements of legislation and conventions to which Australia is a signatory (e.g. MARPOL, the World Heritage Convention, the Ramsar Convention, and the Biodiversity Convention etc.). In addition to these, other non-legislative requirements met include:
 - Australian IUCN reserve management principles for Commonwealth marine protected areas and bioregional marine plans.
 - National Water Quality Management Strategy and supporting guidelines for marine water quality).
 - Conditions of approval set under other legislation.
 - National and international requirements for managing pollution from ships.
 - National biosecurity requirements.
- Industry standards, best practices and widely adopted standards and other published materials have been used and referenced when defining acceptable levels. Where these are inconsistent with mandatory/ legislative regulations, explanation has been provided for the proposed deviation. Any deviation produces the same or a better level of environmental performance (or outcome).

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11 GLOSSARY AND ABBREVIATIONS

11.1 Glossary

Term	Description / Definition
ALARP	Demonstration through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further.
Availability	The availability of a control measure is the percentage of time that it is capable of performing its function (operating time plus standby time) divided by the total period (whether in service or not). In other words, it is the probability that the control has not failed or is undergoing a maintenance or repair function when it needs to be used.
Control	The means by which risk from events is eliminated or minimised.
Control effectiveness	A measure of how well the control measures perform their required function.
Control measure (risk control measure)	The features that eliminate, prevent, reduce or mitigate the risk to environment associated with PAP.
Credible spill scenario	A spill considered by Woodside as representative of maximum volume and characteristics of a spill that could occur as part of the PAP.
Dependency	The degree of reliance on other systems in order for the control measure to be able to perform its intended function.
Environment that may be affected	The summary of quantitative modelling where the marine environment could be exposed to hydrocarbons levels exceeding hydrocarbon threshold concentrations.
Incident	An event where a release of energy resulted in or had (with) the potential to cause injury, ill health, damage to the environment, damage to equipment or assets or company reputation.
Major Environment Event	The events with potential environment, reputation, social or cultural consequences of category C or higher (as per Woodside's operational risk matrix) which are evaluated against credible worst-case scenarios which may occur when all controls are absent or have failed.
Performance outcome	A statement of the overall goal or outcome to be achieved by a control measure
Performance standard	The parameters against which [risk] controls are assessed to ensure they reduce risk to ALARP. A statement of the key requirements (indicators) that the control measure has to achieve in order to perform as intended in relation to its functionality, availability, reliability, survivability and dependencies.
Preparedness	Measures taken before an incident in order to improve the effectiveness of a response
Reasonably practicable	... a computation ... made by the owner, in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) [showing whether or not] that there is a gross disproportion between them ... made by the owner at a point of time anterior to the accident. (Judgement: Edwards v National Coal Board [1949])

Term	Description / Definition
Receptors at risk	Physical, biological and social resources identified as at risk from hydrocarbon contact using oil spill modelling predictions.
Receptor areas	Geographically referenced areas such as bays, islands, coastlines and/or protected area (WHA, Commonwealth or State marine reserve or park) containing one or more receptor type
Receptor Sensitivities	This is a classification scheme to categorise receptor sensitivity to an oil spill. The Environmental Sensitivity Index (ESI) is a numerical classification of the relative sensitivity of a particular environment (particularly different shoreline types) to an oil spill. Refer to the Woodside Oil Pollution Emergency Arrangements (Australia) for more details.
Regulator	NOPSEMA are the Environment Regulator under the Environment Regulations.
Reliability	The probability that at any point in time a control measure will operate correctly for a further specified length of time.
Response technique	The key priorities and objectives to be achieved by the response plan Measures taken in response to an event to reduce or prevent adverse consequences.
Survivability	Whether or not a control measure is able to survive a potentially damaging event is relevant for all control measures that are required to function after an incident has occurred.
Threshold	Hydrocarbon threshold concentrations applied to the risk assessment to evaluate hydrocarbon spills. These are defined as: surface hydrocarbon concentration – $\geq 10 \text{ g/m}^2$, dissolved – $\geq 100 \text{ ppb}$ and entrained hydrocarbon concentrations – $\geq 500 \text{ ppb}$.
Zone of Application	The zone in which Woodside may elect to apply dispersant. The zone is determined based on a range of considerations, such as hydrocarbon characteristics, weathering and metocean conditions. The zone is a key consideration in the Net Environmental Benefit Analysis for dispersant use.

11.2 Abbreviations

Abbreviation	Meaning
ADIOS	Automated Data Inquiry for Oil Spills
AEP	Australian Energy Producers (formerly APPEA)
AIIMS	Australasian Inter-Service Incident Management System
ALARP	As low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
AUV	Autonomous Underwater Vehicle
BAOAC	Bonn Agreement Oil Appearance Code
BOP	Blowout Preventer
cST	Centistokes
CIMT	Corporate Incident Management Team
DM	Duty Manager
DoT	Western Australia Department of Transport
DBCA	Western Australia Department of Biodiversity, Conservation and Attractions
EMBA	Environment that May Be Affected
EMSA	European Maritime Safety Agency
EP	Environment Plan
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009
ESI	Environmental Sensitivity Index
ESD	Emergency Shut Down
ESP	Environmental Services Panel
FPSO	Floating Production Storage Offloading
FSP	First Strike Plan
GIS	Geographic Information System
GPS	Global Positioning System
HSP	Hydrocarbon Spill Preparedness
IAP	Incident Action Plan
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environment Conservation Association
ITOPF	International Tanker Owners Pollution Federation
IUCN	International Union for Conservation of Nature
KBSF	King Bay Supply Facility
KIMC	Karratha Incident Management Centre
KSAT	Kongsberg Satellite

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Abbreviation	Meaning
LOC	Loss of Containment
LOWC	Loss of Well Containment
MMA	Marine Management Area
MODU	Mobile Offshore Drilling Unit
MoU	Memorandum of Understanding
NEBA	Net Environmental Benefit Analysis
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
OILMAP	Oil Spill Model and Response System
OPEA	Oil Pollution Emergency Arrangements
OPEP	Oil Pollution Emergency Plan
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act
OSRL	Oil Spill Response Limited
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
OWRP	Oiled Wildlife Response Plan
PAP	Petroleum Activities Program
PEARLS	People, Environment, Asset, Reputation, Livelihood and Services
PBA	Pre-emptive Baseline Areas
PPA	Priority Protection Area
PPB	Parts per billion
ROV	Remotely Operated Vehicle(s)
RPA	Response Protection Area
SCAT	Shoreline Contamination Assessment Techniques
SIMAP	Integrated Oil Spill Impact Model System
SIMOPs	Simultaneous Operations
SSDI	Subsea Dispersant Injection
SFRT	Subsea First Response Toolkit
SMP	Scientific monitoring program
SOP	Standard Operating Procedure
TRP	Tactical Response Plan
UAS	Unmanned Aerial Systems
UAV	Unmanned Aerial Vehicles
WCC	Woodside Communication Centre
WCCS	Worst Case Credible Scenario
WHA	World Heritage Area
Woodside	Woodside Energy Limited

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Abbreviation	Meaning
WWCI	Wild Well Control Inc
ZoA	Zone of Application

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ANNEX A: NET ENVIRONMENTAL BENEFIT ANALYSIS DETAILED OUTCOMES

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A NEBA has been conducted to assess the net environmental benefit of different response techniques to selected receptors in the event of an oil spill from the PAP for Ngujima-Yin operations resulting in a subsea loss of well containment (WCSS). The complete list of potential receptor locations within the EMBA within the PAP is included in Section 6.8 of the EP.

The locations utilised for the NEBA were limited to the identified RPAs of the PAP identified from modelling (see Section 0 for outline of selection). These include receptors which have potential for the following:

- Surface contact (>50 g/m²)
- Shoreline accumulation (>100 g/m²) at any time
- Entrained contact (>100 ppb) within 14 days

The detailed NEBA assessment outcomes are shown below. The Ngujima-Yin preoperational NEBAs contains the full assessments.

Table A-1: NEBA assessment technique recommendations for loss of well containment of Vincent Crude (MEE-01) and cargo tank loss of containment of Ngujima-Yin Toppides Blend (MEE-05)

Receptor	Operational Monitoring	Containment and recovery	Dispersant application: sub-sea	Dispersant application: > 20 m water depth and > 10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source Control
Ashmore Reef MP*	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Barrow/Middle/Boodie Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Barrow/Middle/Boodie Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Dampier Archipelago Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Derby - West Kimberley	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
East Pilbara - shoreline	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
East Pilbara Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Eighty Mile Beach - Broome/Islands/Reserves/Reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Exmouth Gulf/Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Kimberley Islands/Reserves/Reefs/IPAs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Lalang-Garram Marine Park (North, Camden Sound and Horizontal Falls)	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Lowendal, Hermite, Montebello Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Middle Pilbara Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Ningaloo/Muiron Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
North Pilbara Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Northern Pilbara - Shoreline	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Shark Bay - Coast/ Islands/ Reefs/ Reserves	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
South Pilbara Islands/reserves/reefs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes
Southern Pilbara - Shoreline	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes
Wyndham - East Kimberley	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes

Overall assessment

Sensitive receptor (sites identified in EP)	Operational Monitoring	Containment and recovery	Dispersant application: sub-sea	Dispersant application: > 20 m water depth and > 10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source Control
Is this response Practicable?	Yes	Yes	Yes	Yes	Potentially	Potentially	Potentially	Potentially	Yes	No	No	Yes
NEBA identifies response potentially of net environmental benefit?	Yes	Yes	Yes	Yes	Yes	Yes	Potentially	No	Yes	No	No	Yes

NEBA Impact Ranking Classification Guidance

To reduce variability between assessments, the following ranking descriptions have been devised to guide the workshop process:

		Degree of impact ¹⁴		Potential duration of impact	Equivalent Woodside Corporate Risk Matrix Consequence Level
Positive	3P	Major	Likely to prevent: <ul style="list-style-type: none"> behavioural impact to biological receptors behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches) or regulatory designations. 	Decrease in duration of impact by > 5 years	N/A
	2P	Moderate	Likely to prevent: <ul style="list-style-type: none"> significant impact to a single phase of reproductive cycle of biological receptors detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. 	Decrease in duration of impact by 1–5 years	N/A
	1P	Minor	Likely to prevent impacts on: <ul style="list-style-type: none"> significant proportion of population or breeding stages of biological receptors socio-economic receptors such as: <ul style="list-style-type: none"> significant impact to the sensitivity of protective designation; or significant and long-term impact to business/industry. 	Decrease in duration of impact by several seasons (< 1 year)	N/A
	0	Non-mitigated spill impact	No detectable difference to unmitigated spill scenario.		
Negative	1N	Minor	Likely to result in: <ul style="list-style-type: none"> behavioural impact to biological receptors behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches), or regulatory designations. 	Increase in duration of impact by several seasons (< 1 year)	Increase in risk by one sub-category, without changing category (e.g. Minor (E) to Minor (D))
	2N	Moderate	Likely to result in: <ul style="list-style-type: none"> significant impact to a single phase of reproductive cycle for biological receptors; or detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region. 	Increase in duration of impact by 1–5 years	Increase in risk by one category (e.g. Minor (D) to Moderate (C or B))
	3N	Major	Likely to result in impacts on: <ul style="list-style-type: none"> significant proportion of population or breeding stages of biological receptors socio-economic receptors resulting in either: <ul style="list-style-type: none"> significant impact to the sensitivity of protective designation; or significant and long-term impact to business/industry. 	Increase in duration of impact by > 5 years or unrecoverable	Increase in risk by two categories (e.g. Minor (E) to Major (A))

¹⁴ NOTE: the maximum likely impact should be considered; for example, if a spill were to directly impact the behaviour that results in an impact to reproduction and/or the breeding population (such as fish failing to aggregate to spawn), then the score should be a 2 or 3 rather than a 1. Similarly, if a change in behaviour resulted in an increased risk of mortality of a population, then it should be scored as a 2 or 3

ANNEX B: OPERATIONAL MONITORING ACTIVATION AND TERMINATION CRITERIA

Table B-1: Operational monitoring objectives, triggers and termination criteria

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 01 (OM01)</p> <p>Predictive Modelling of Hydrocarbons to Assess Resources at Risk</p>	<p>OM01 focuses on the conditions that have prevailed since a spill commenced, as well as those that are forecasted in the short term (1–3 days ahead) and longer term. OM01 utilises computer-based forecasting methods to predict hydrocarbon spill movement and guide the management and execution of spill response operations to maximise the protection of environmental resources at risk.</p> <p>The objectives of OM01 are to:</p> <ul style="list-style-type: none"> • Provide forecasting of the movement and weathering of spilled hydrocarbons • Identify resources that are potentially at risk of contamination • Provide simulations showing the outcome of alternative response options (booming patterns etc.) to inform on-going Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP, 	<p>OM01 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM01 are:</p> <ul style="list-style-type: none"> • The hydrocarbon discharge has ceased and no further surface oil is visible • Response activities have ceased • Hydrocarbon spill modelling (as verified by OM02 surveillance observations) predicts no additional natural resources will be impacted

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 02 (OM02)</p> <p>Surveillance and reconnaissance to detect hydrocarbons and resources at risk</p>	<p>OM02 aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill.</p> <p>The objectives of OM02 are:</p> <ul style="list-style-type: none"> • Verify spill modelling results and recalibrate spill trajectory models (OM01). • Understand the behaviour, weathering and fate of surface hydrocarbons. • Identify environmental receptors and locations at risk or contaminated by hydrocarbons. • Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP. • To aid in the subsequent assessment of the short- to long-term impacts and/or recovery of natural resources (assessed in SMPs) by ensuring that the visible cause and effect relationships between the hydrocarbon spill and its impacts to natural resources have been observed and recorded during the operational phase. 	<p>OM02 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The termination triggers for the OM02 are:</p> <ul style="list-style-type: none"> • 72 hours has elapsed since the last confirmed observation of surface hydrocarbons. • Latest hydrocarbon spill modelling results (OM01) do not predict surface exposures at visible levels.
<p>Operational Monitoring Operational Plan – 03 (OM03)</p> <p>Monitoring of hydrocarbon presence, properties, behaviour and weathering in water</p>	<p>OM03 will measure surface, entrained and dissolved hydrocarbons in the water column to inform decision-making for spill response activities.</p> <p>The specific objectives of OM03 are as follows:</p> <ul style="list-style-type: none"> • Detect and monitor for the presence, quantity, properties, behaviour and weathering of surface, entrained and dissolved hydrocarbons. • Verify predictions made by OM01 and observations made by OM02 about the presence and extent of hydrocarbon contamination. <p>Data collected in OM03 will also be used for the purpose of longer-term water quality monitoring during SM01.</p>	<p>OM03 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM03 are as follows:</p> <ul style="list-style-type: none"> • The hydrocarbon release has ceased. • Response activities have ceased. • Concentrations of hydrocarbons in the water are below available ANZECC/ ARMCANZ (2018) trigger values for 99% species protection.

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Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 04 (OM04)</p> <p>Pre-emptive assessment of sensitive receptors at risk</p>	<p>OM04 aims to undertake a rapid assessment of the presence, extent and current status of shoreline sensitive receptors prior to contact from the hydrocarbon spill, by providing categorical or semi-quantitative information on the characteristics of resources at risk.</p> <p>The primary objective of OM04 is to confirm understanding of the status and characteristics of environmental resources predicted by OM01 and OM02 to be at risk, to further assist in making decisions on the selection of appropriate response actions and prioritisation of resources.</p> <p>Indirectly, qualitative/semi-quantitative pre-contact information collected by OM04 on the status of environmental resources may also aid in the verification of environmental baseline data and provide context for the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM04 would be undertaken in liaison with WA DoT as the control agency once the oil is in State Waters (if a Level 2/3 incident).</p>	<p>Triggers for commencing OM04 include:</p> <ul style="list-style-type: none"> • Contact of a sensitive habitat or shoreline is predicted by OM01, OM02 and/or OM03. • The pre-emptive assessment methods can be implemented before contact from hydrocarbons (once a receptor has been contacted by hydrocarbons it will be assessed under OM05). 	<p>The criteria for the termination of OM04 at any given location are:</p> <ul style="list-style-type: none"> • Locations predicted to be contacted by hydrocarbons have been contacted. • The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational monitoring operational plan – 05 (OM05)</p> <p>Monitoring of contaminated resources</p>	<p>OM05 aims to implement surveys to assess the condition of wildlife and habitats contacted by hydrocarbons at sensitive habitat and shoreline locations.</p> <p>The primary objectives of OM05 are:</p> <ul style="list-style-type: none"> Record evidence of oiled wildlife (mortalities, sub-lethal impacts, number, extent, location) and habitats (mortalities, sub-lethal impacts, type, extent of cover, area, hydrocarbon character, thickness, mass and content) throughout the response and clean-up at locations contacted by hydrocarbons to inform and prioritise clean-up efforts and resources, while minimising the potential impacts of these activities. <p>Indirectly, the information collected by OM05 may also support the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM05 would be undertaken in liaison with WA DoT as the control agency once the oil is in State Waters (if a Level 2/3 incident).</p>	<p>OM05 will be triggered when a sensitive habitat or shoreline is predicted to be contacted by hydrocarbons by OM01, OM02 and/or OM03.</p>	<p>The criteria for the termination of OM05 at any given location are:</p> <ul style="list-style-type: none"> No additional response or clean-up of wildlife or habitats is predicted. Spill response and clean-up activities have ceased. <p>OM05 survey sites established at sensitive habitat and shoreline locations will continue to be monitored during SM02.</p> <p>The formal transition from OM05 to SM02 will begin on cessation of spill response and clean-up activities.</p>

ANNEX C: OIL SPILL SCIENTIFIC MONITORING PROGRAM

Oil Spill Environmental Monitoring

The following provides some further detail on Woodside's oil spill scientific monitoring Program and includes the following:

- The organisation, roles and responsibilities of the Woodside oil spill scientific monitoring team and external resourcing.
- A summary table of the ten scientific monitoring programs as per the specific focus receptor, objectives, activation triggers and termination criteria.
- Details on the oil spill environmental monitoring activation and termination decision-making processes.
- Baseline knowledge and environmental studies knowledge access via geo-spatial metadata databases.
- An outline of the reporting requirements for oil spill scientific monitoring programs.

Oil Spill Scientific Monitoring – Delivery Team Roles and Responsibilities

Woodside Oil Spill Scientific Monitoring Delivery Team

The Woodside science team are responsible for the delivery of the oil spill scientific monitoring. The roles and responsibilities of the Woodside scientific monitoring delivery team are presented in Table C-1 and the organisational structure and Corporate Incident Management Team (CIMT) linkage provided in Figure C-1.

Woodside Oil Spill Scientific monitoring program – External Resourcing

In the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors, scientific monitoring personnel and scientific equipment to implement the appropriate SMPs will be provided by SMP Standby contractor who hold a standby contract for SMP via the Woodside Environmental Services Panel (ESP). In the event that additional resources are required other consultancy capacity within the Woodside ESP will be utilised (as needed and may extend to specialist contractors such as research agencies engaged in long-term marine monitoring programs). In consultation with the SMP Standby Contractor and/or specialist contractors, the selection, field sampling and approach of the SMPs will be determined by the nature and scale of the spill.

Table C-1: Woodside and Environmental Service Provider – Oil Spill Scientific Monitoring Program Delivery Team Key Roles and Responsibilities

Role	Location	Responsibility
Woodside Roles		
SMP Lead/Manager	Onshore	<ul style="list-style-type: none"> • Approves activated the SMPs based on operational monitoring data provided by the Planning Section • Provides advice to the CIMT in relation to scientific monitoring • Provides technical advice regarding the implementation of scientific monitoring • Approves detailed sampling plans prepared for SMPs • Directs liaison between statutory authorities, advisors and government agencies in relation to SMPs.
SMP Co-Ordinator	Onshore	<ul style="list-style-type: none"> • Activates the SMPs based on operational monitoring data provided by the Planning Section • Sits in the Planning Section of the CIMT. • Liaises with other CIMT Sections to deliver required logistics, resources and operational support from Woodside to support the Environmental Service Provider in delivering on the SMPs. Acts as the conduit for advice from the SMP Lead/Manager to the Environmental Service Provider • Manages the Environmental Service Provider’s implementation of the SMPs • Liaises with the Environmental Service Provider on delivery of the SMPs • Arranges all contractual matters, on behalf of Woodside, associated with the Environmental Service Provider’s delivery of the SMPs.
Environmental Service Provider Roles		
SMP Standby Contractor – SMP Duty Manager/Project Manager (SMP Liaison Officer)	Onshore	<ul style="list-style-type: none"> • Coordinates the delivery of the SMPs • Provides costings, schedule and progress updates for delivery of SMPs • Determines the structure of the Environmental Service Provider’s team to necessitate delivery of the SMPs • Verifies that HSE Plans, detailed sampling plans and other relevant deliverables are developed and implemented for delivery of the SMPs • Directs field teams to deliver SMPs • Arranges all contractual matters, on behalf of Environmental Service Provider, associated with the delivery of the SMPs to Woodside • Manages sub-consultant delivery to Woodside • Provides required personnel and equipment to deliver the SMPs.
SMP Field Teams	Offshore – Monitoring Locations	<ul style="list-style-type: none"> • Delivers the SMPs in the field consistent with the detailed sampling plans and HSE requirements, within time and budget. • Early communication of time, budget, HSE risks associated with delivery of the SMPs to the Environmental Service Provider – Project Manager • Provides start up, progress and termination updates to the Environmental Service Provider – Project Manager (will be led in-field by a party chief).

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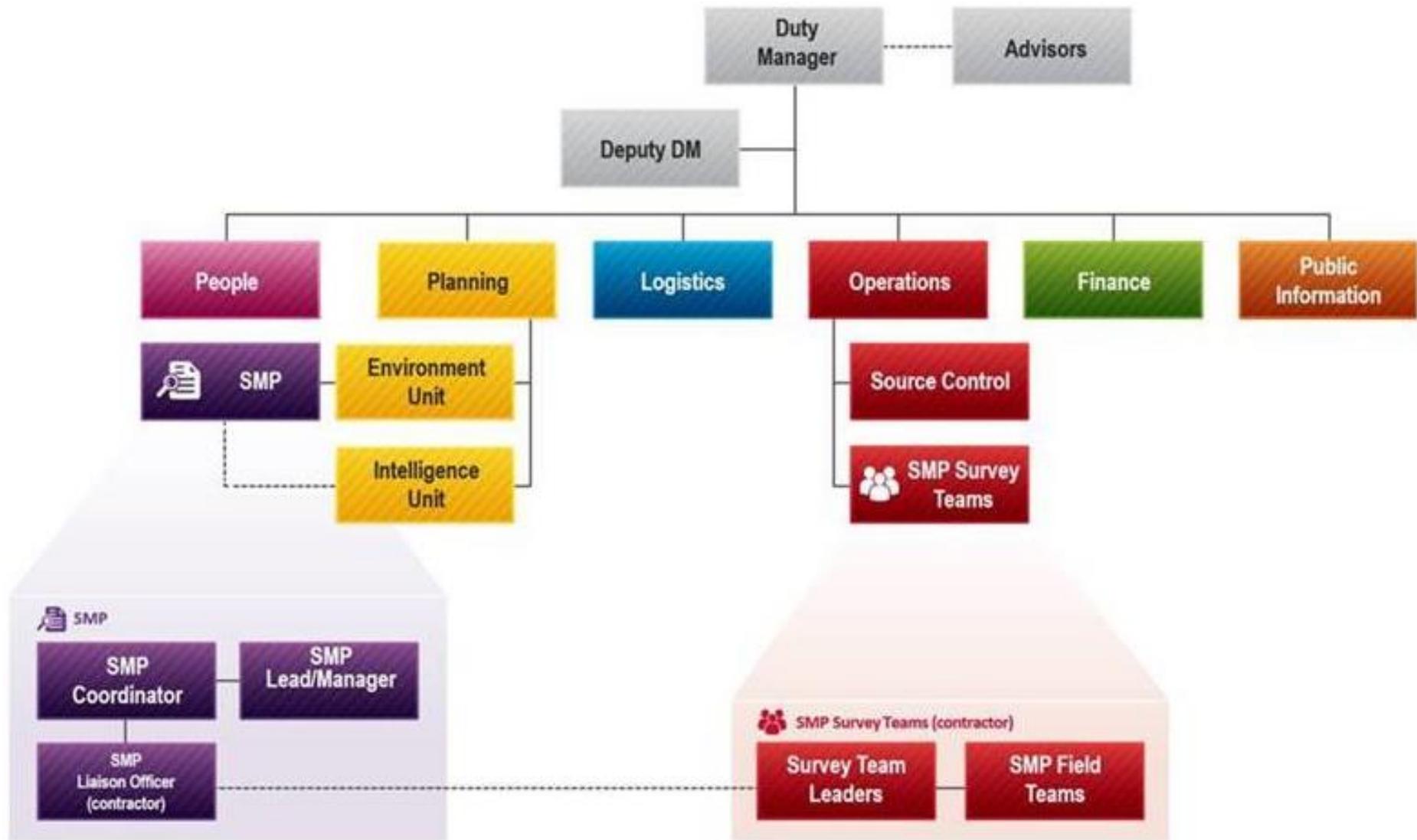


Figure C-1: Woodside Oil Spill Scientific Monitoring Program Delivery Team and Linkage to Corporate Incident Management Team organisational structure

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Table C-2: Oil Spill Environmental Monitoring: Scientific Monitoring Program - Objectives, Activation Triggers and Termination Criteria

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
Scientific monitoring program 1 (SM01) Assessment of Hydrocarbons in Marine Waters	<p>SM01 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine waters following the spill and the response.</p> <p>The specific objectives of SM01 are as follows:</p> <ul style="list-style-type: none"> Assess and document the extent, severity and persistence of hydrocarbon contamination with reference to observations made during surveillance activities and / or in-water measurements made during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	<p>SM01 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors</p>	<p>SM01 will be terminated when:</p> <ul style="list-style-type: none"> Operational monitoring data relating to observations and / or measurements of hydrocarbons on and in water have been compiled, analysed and reported; and The report provides details of the extent, severity and persistence of hydrocarbons which can be used for analysis of impacts recorded for sensitive receptors monitored under other SMPs. <p>SMP monitoring of sensitive receptor sites:</p> <ul style="list-style-type: none"> Concentrations of hydrocarbons in water samples are below NOPSEMA guidance note (201915) concentrations of 1 g/m² for floating, 10 ppb for entrained and dissolved; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in water have been documented at sensitive receptor sites monitored under other SMPs.
Scientific monitoring program 2 (SM02) Assessment of the Presence, Quantity and Character of Hydrocarbons in Marine Sediments	<p>SM02 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine sediments following the spill and the response.</p> <p>The specific objectives of SM02 are as follows:</p> <ul style="list-style-type: none"> Determine the extent, severity and persistence of hydrocarbons in marine sediments across selected sites where hydrocarbons were observed or recorded during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	<p>SM02 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> Response activities have ceased; and Operational monitoring results made during the response phase indicate that shoreline, intertidal or sub-tidal sediments have been exposed to surface, entrained or dissolved hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation). 	<p>SM02 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p> <ul style="list-style-type: none"> Concentrations of hydrocarbons in sediment samples are below ANZECC/ ARMCANZ (201316) sediment quality guideline values (SQGVs) for biological disturbance; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in sediments have been documented.
Scientific monitoring program 3 (SM03) Assessment of Impacts and Recovery of Subtidal and Intertidal Benthos	<p>The objectives of SM03 are:</p> <ul style="list-style-type: none"> Characterize the status of intertidal and subtidal benthic habitats and quantify any impacts to functional groups, abundance and density that may be a result of the spill; and Determine the impact of the hydrocarbon spill and subsequent recovery (including impacts associated with the implementation of response options). <p>Categories of intertidal and subtidal habitats that may be monitored include:</p> <ul style="list-style-type: none"> Coral reefs Seagrass Macro-algae Filter-feeders <p>SM03 will be supported by sediment contamination records (SM02) and characteristics of the spill derived from OMPs.</p>	<p>SM03 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of PBAs of receptor locations identified by time to hydrocarbon contact >10 days, to target receptors and sites where it is possible to acquire pre-hydrocarbon contact baseline; and Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for subtidal and intertidal benthic habitat. 	<p>SM03 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p> <ul style="list-style-type: none"> Overall impacts to benthic habitats from hydrocarbon exposure have been quantified. Recovery of impacted benthic habitats has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 4 (SM04)	<p>The objectives of SM04 are:</p>	<p>SM04 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p>	<p>SM04 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p>

¹⁵ NOPSEMA (2019) Bulletin #1 – Oil spill modelling – April 2019, <https://www.nopsema.gov.au/assets/Bulletins/A652993.pdf>

¹⁶ Simpson SL, Batley GB and Chariton AA (2013). Revision of the ANZECC/ARMCANZ Sediment Quality Guidelines. CSIRO and Water Science Report 08/07. Land and Water, pp. 132.

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
Assessment of Impacts and Recovery of Mangroves / Saltmarsh	<ul style="list-style-type: none"> Characterize the status of mangroves (and associated salt marsh habitat) at shorelines exposed/contacted by spilled hydrocarbons; Quantify any impacts to species (abundance and density) and mangrove/saltmarsh community structure; and Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). <p>SM03 will be supported by sediment sampling undertaken in SM02 and characteristics of the spill derived from OMPs.</p>	<ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; and Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for mangrove/saltmarsh habitat. 	<ul style="list-style-type: none"> Impacts to mangrove and saltmarsh habitat from hydrocarbon exposure have been quantified. Recovery of impacted mangrove/saltmarsh habitat has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 5 (SM05) Assessment of Impacts and Recovery of Seabird and Shorebird Populations	<p>The Objectives of SM05 are to:</p> <ul style="list-style-type: none"> Collate and quantify impacts to avian wildlife from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population level; and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to seabirds and shorebird populations at targeted breeding colonies / staging sites / important coastal wetlands where hydrocarbon contact was recorded. 	<p>SM05 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Operational monitoring predicts shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at important bird colonies / staging sites / important coastal wetland locations; or Records of dead, oiled or injured bird species made during the hydrocarbon spill or response. 	<p>SM05 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to seabird and shorebird populations from hydrocarbon exposure have been quantified. Recovery of impacted seabird and shorebird populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 6 (SM06) Assessment of Impacts and Recovery of Nesting Marine Turtle Populations	<p>The objectives of SM06 are to:</p> <ul style="list-style-type: none"> To quantify impacts of hydrocarbon exposure or contact on marine turtle nesting populations (including impacts associated with the implementation of response options); Collate and quantify impacts to adult and hatchling marine turtles from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels (including impacts associated with the implementation of response options); .and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to nesting marine turtle populations at known rookeries (including impacts associated with the implementation of response options). 	<p>SM06 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Predicted shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known marine turtle rookery locations; or Records of dead, oiled or injured marine turtle species made during the hydrocarbon spill or response. 	<p>SM06 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to nesting marine turtle populations from hydrocarbon exposure have been quantified. Recovery of impacted nesting marine turtle populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 7 (SM07) Assessment of Impacts to Pinniped Colonies including Haul-out Site Populations	<p>The objectives of SM07 are to:</p> <ul style="list-style-type: none"> Quantify impacts on pinniped colonies and haul-out sites as a result of hydrocarbon exposure/contact. Collate and quantify impacts to pinniped populations from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels. 	<p>SM07 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Identified shoreline contact of hydrocarbons ((at or above 0.5 g/m² surface, ≥5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known pinniped colony or haul-out site(s) (i.e. most northern site is the Houtman Abrolhos Islands); or Records of dead, oiled or injured pinniped species made during the hydrocarbon spill or response. 	<p>SM07 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to pinniped populations from hydrocarbon exposure have been quantified. Recovery of pinniped populations has been evaluated. Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 8 (SM08)	<p>The objective of SM08 is to provide a desk-based assessment which collates the results of OM02 and OM05 where observations relate to the mortality, stranding or oiling of</p>	<p>SM08 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and</p>	<p>SM08 will be terminated when the results of the post-spill monitoring have quantified impacts to non-avian megafauna.</p>

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
Desk-Based Assessment of Impacts to Other Non-Avian Marine Megafauna	mobile marine megafauna species not addressed in SM06 or SM07, including: <ul style="list-style-type: none"> • Cetaceans; • Dugongs; • Whale sharks and other shark and ray populations; • Sea snakes; and • Crocodiles. The desk-based assessment will include population analysis to infer potential impacts to marine megafauna species populations.	implemented if operational monitoring reports records of dead, oiled or injured non-avian marine megafauna during the spill/ response phase.	<ul style="list-style-type: none"> • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 9 (SM09) Assessment of Impacts and Recovery of Marine Fish associated with SM03 habitats	The objectives of SM09 are: <ul style="list-style-type: none"> • Characterise the status of resident fish populations associated with habitats monitored in SM03 exposed/contacted by spilled hydrocarbons; • Quantify any impacts to species (abundance, richness and density) and resident fish population structure (representative functional trophic groups); and • Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). 	SM09 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented with SMO3.	SM09 will be undertaken and terminated concurrent with monitoring undertaken for SM03, as per the SMP termination criteria process <ul style="list-style-type: none"> • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
Scientific monitoring program 10 (SM10) SM10 - Assessment of physiological impacts important fish and shellfish species (fish health and seafood quality/safety) and recovery	SM10 aims to assess any physiological impacts to important commercial fish and shellfish species (assessment of fish health) and if applicable, seafood quality/safety. Monitoring will be designed to sample key commercial fish and shellfish species and analyse tissues to identify fish health indicators and biomarkers, for example: <ul style="list-style-type: none"> • Liver Detoxification Enzymes (ethoxyresorufin-O-deethylase (EROD) activity) • PAH Biliary Metabolites • Oxidative DNA Damage • Serum SDH • Other physiological parameters, such as condition factor (CF), liver somatic index (LSI), gonado-somatic index (GSI) and gonad histology, total weight, length, condition, parasites, egg development, testes development, abnormalities. • Seafood tainting may be included (where appropriate) using applicable sensory tests to objectively assess targeted finfish and shellfish species for hydrocarbon contamination. Results will be used to make inferences on the health of commercial fisheries and the potential magnitude of impacts to fishing industries.	SM10 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring (OM01, OM02 and OM05) indicates the following: <ul style="list-style-type: none"> • The hydrocarbon spill will or has intersected with active commercial fisheries or aquaculture activities. • Commercially targeted finfish and/or shellfish mortality has been observed/recorded. • Commercial fishing or aquaculture areas have been exposed to hydrocarbons ($\geq 0.5 \text{ g/m}^2$ surface and $\geq 5 \text{ ppb}$ for entrained/dissolved hydrocarbons); and • Taste, odour or appearance of seafood presenting a potential human health risk is observed. 	SM10 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of: <ul style="list-style-type: none"> • Physiological impacts to important commercial fish and shellfish species from hydrocarbon exposure have been quantified. • Recovery of important commercial fish and shellfish species from hydrocarbon exposure has been evaluated. • Impacts to seafood quality/safety (if applicable) have been assessed and information provided to the relevant stakeholders and regulators for the management of any impacted fisheries. • Agreement with relevant stakeholders and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.

Activation Triggers and Termination Criteria

Scientific monitoring program Activation

The Woodside oil spill scientific monitoring team will be stood up immediately with the occurrence of a hydrocarbon spill (actual or suspected) Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors via the first strike plan for the petroleum activity programme. The presence of any level of hydrocarbons in the marine environment triggers the activation of the oil spill scientific monitoring program (SMP). This is to ensure the full range of eventualities relating to the environmental, socio-economic and health consequences of the spill are considered in the planning and execution of the SMP. The activation process also takes into consideration the management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), CMRs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act) potentially exposed to hydrocarbons. With the first 24-48 hours of a spill event, such information will be sourced and evaluated as part of the SMP planning process guided by Appendix D (identified receptors vulnerable to hydrocarbon contact), the information presented in the Existing Environment section of the EP as well as other information sources such as the Woodside Baseline Environmental Studies Database.

The starting point for decision-making on what SMPs are activated and spatial extent of monitoring activities will be based on the predictive modelling results (OM01) in the first 24-48 hours until more information is made available from other operational monitoring activities such as aerial surveillance and shoreline surveys. Pre-emptive Baseline Areas (WHA, CMRs and State Marine Parks encompassing key ecological and socio-economic values) are a key focus of the SMP activation decision-making process, particularly, in the early spill event/response phase. As the operational monitoring progresses and further situational awareness information becomes available, it will be possible to understand the nature and scale of the spill. The SMP activation and implementation decision-making will be revisited on a daily basis to account for the updates on spill information. One of the priority focus areas in the early phase of the incident will be to identify and execute pre-emptive SMP assessments at key receptor locations, as required. The SMP activation and implementation decision tree is presented in Figure C-2.

Scientific monitoring Program Termination

The basis of the termination process for the active SMPs (SMPs 1-10) will include quantification of impacts, evaluation of recovery for the receptor at risk and consultation with relevant authorities, persons and organisations. Termination of each SMP will not be considered until the results (as presented in annual SMP reports for the duration of each program) indicate that the target receptor has returned to pre-spill condition.

Once the SMP results indicate impacted receptor(s) have returned to pre-spill condition (as identified by Woodside) a termination decision-making process will be triggered and a number of steps will be undertaken as follows:

- Woodside will engage expert opinion on whether the receptor has returned to pre-spill condition (based on monitoring data). Subject Matter Expert (SMEs) will be engaged (via the Woodside SME scientific monitoring terms of reference to review program outcomes, provide expert advice and recommendations for the duration of each SMP.
- Where expert opinion agrees that the receptor has returned to pre-spill condition, findings will then be presented to the relevant authorities, persons and organisations (as defined by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulation 11A). Stakeholder identification, planning and engagement will be managed by Woodside's Reputation Functional Support Team (FST) and follow the stakeholder management FST. These guidelines outline the FST roles and responsibilities, competencies, stakeholder communications and planning processes. An assessment of the merits of any objection to termination will be documented in the SMP final report.

- Woodside will decide on termination of SMP based on expert opinion and merits of any stakeholder objections. The final report following termination will include: monitoring results, expert opinion and stakeholder consultation including merits of any objections.
- Termination of SMPs will also consider applicable management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), CMRs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act).

The SMP termination decision-making process will be applied to each active SMP and an iterative process of decision steps continued until each SMP has been terminated (refer to decision-tree diagram for SMP termination criteria, Figure C-3).

SMP ACTIVATION & IMPLEMENTATION DECISION PROCESS

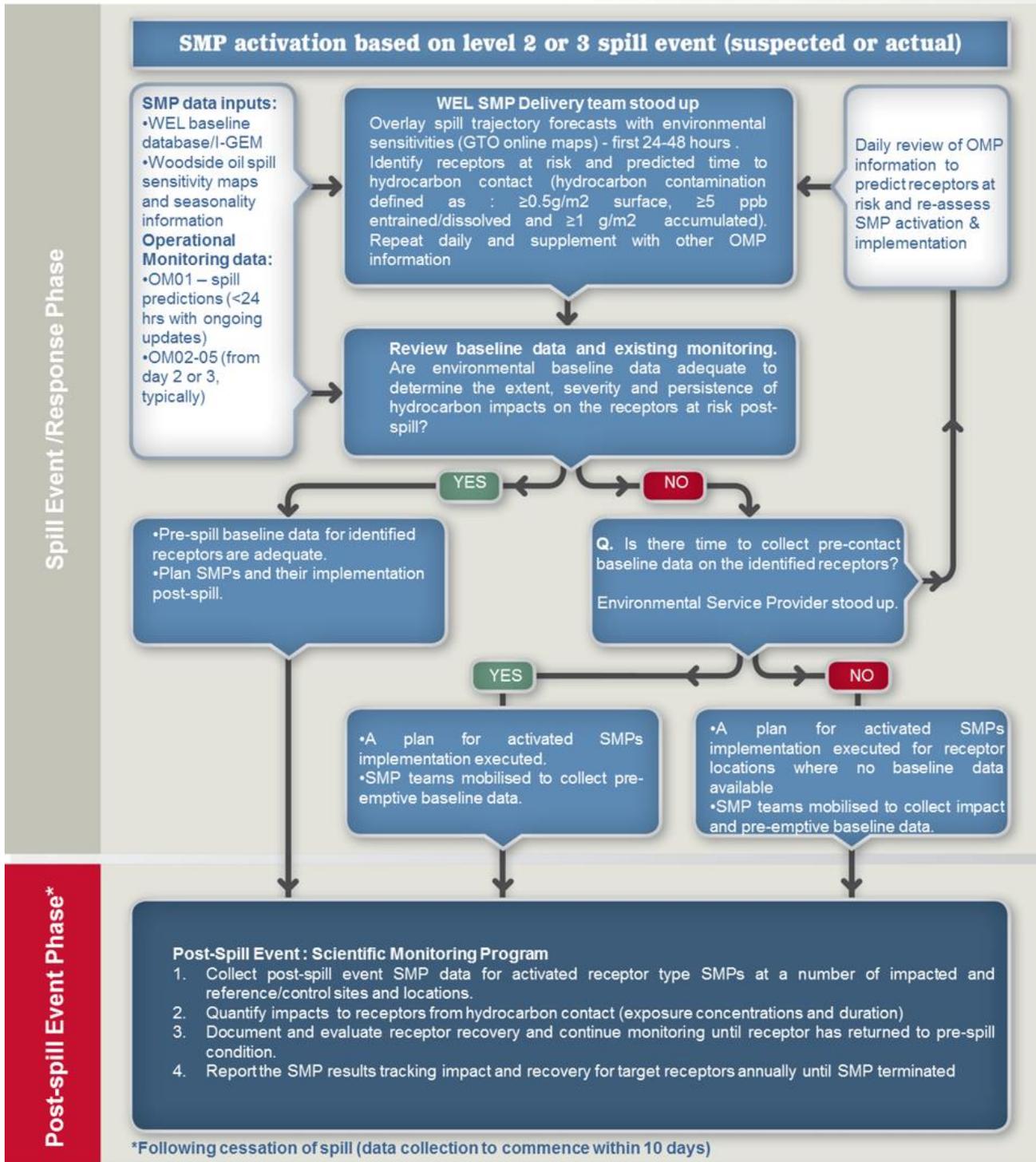


Figure C-2: Activation and Implementation Decision-tree for Oil Spill Environmental Monitoring

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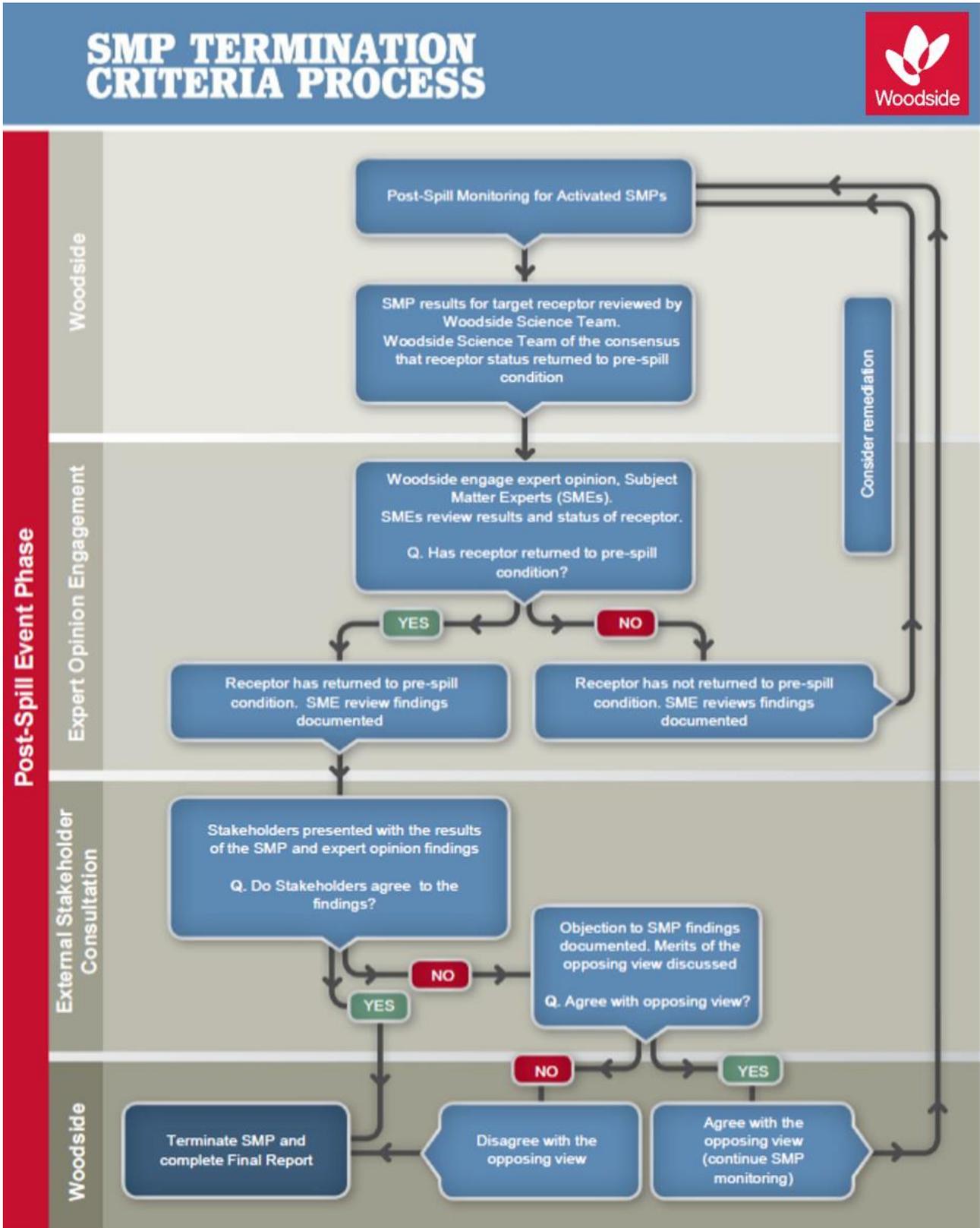


Figure C-3: Termination Criteria Decision-tree for Oil Spill Environmental Monitoring

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Receptors at Risk and Baseline Knowledge

In order to assess the baseline studies available and suitability for oil spill scientific monitoring, Woodside maintains knowledge of environmental baseline studies through the upkeep and use of its Environmental Knowledge Management System.

Woodside's Environmental Knowledge Management System is a centralised platform for scientific information on the existing environment, marine biodiversity, Woodside environmental studies, key environmental impact topics, key literature and web-based resources. The system comprises a number of data directories and an environmental baseline database, as well as folders within the 'Corporate Environment' server space. The environmental baseline database was set up to support Woodside's SMP preparedness and as a SMP resource in the event of an unplanned hydrocarbon spill. The environmental baseline database is subject to updates including annual reviews completed as part of SMP standby contract. This database is accessed pre-PAP to identify Pre-emptive Baseline Areas (PBAs) where hydrocarbon contact is predicted to occur <10 days.

In addition to Woodside's Environmental Knowledge Management System, it is acknowledged that many relevant baseline datasets are held by other organisations (e.g. other oil and gas operators, government agencies, state and federal research institutions and non-governmental organisations). In order to understand the present status of environmental baseline studies a spatial environmental metadata database for Western Australia (Industry-Government Environmental Metadata, I-GEM) was established. IGEM is a collaboration comprising oil and gas operators (including Woodside), government and research agencies and other organisations. IGEM held data were integrated into the Department of Water and Environmental Regulation (WA) Index of Marine Surveys for Assessment (IMSA)¹⁷ in 2020. The Index of Marine Surveys for Assessments (IMSA) is an online portal for information about marine-based environmental surveys in Western Australia. IMSA is a project of the Department of Water and Environmental Regulation (the department) for the systematic capture and sharing of marine data created as part of an environmental impact assessment (EIA).

In the event of an unplanned hydrocarbon release, Woodside intends to interrogate the information on baseline studies status as held by the various databases (e.g. Woodside Environmental Knowledge Management System, IMSA and other sources of existing baseline data) to identify Pre-emptive Baseline Areas (PBAs), i.e., receptors at risk where hydrocarbon contact is predicted to be >10 days, and baseline data can be collected before hydrocarbon contact.

Reporting

For the scientific monitoring program relevant regulators will be provided with:

- Annual reports summarising the SMPs deployed and active, data collection activities and available findings; and
- Final reports for each SMP summarising the quantitative assessment of environmental impacts and recovery of the receptor once returned to pre-spill condition and termination of the monitoring program.

The reporting requirements of the scientific monitoring program will be specific to the individual SMPs deployed and terms of responsibilities, report templates, schedule, quality assurance/ quality control (QA/QC) and peer-review will be agreed with the contractors engaged to conduct the SMPs. Compliance and auditing mechanisms will be incorporated into the reporting terms.

¹⁷ <https://biocollect.ala.org.au/imsa#max%3D20%26sort%3DdateCreatedSort>

ANNEX D: MONITORING PROGRAM AND BASELINE STUDIES FOR THE PETROLEUM ACTIVITIES PROGRAM

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Table D-1: Oil Spill Environmental Monitoring – scientific monitoring program scope for the Petroleum Activities Program based on Spill EMBA

Receptors to be Monitored	Receptor Areas - Potential Impact and Reference Scientific Monitoring Sites (marked X)																																															
	Applicable SMP	Kimberley AMP	Agro-Rowley Terrace AMP	Montebello AMP	Dampier AMP	Carnarvon Canyon AMP	Ningaloo AMP	Gascoyne AMP	Shark Bay Open Ocean (including AMP)	Abrilhos AMP	Jurien AMP	Two Rocks AMP	Perth Canyon AMP	Geographic AMP	South-west Corner AMP	Ashmore Reef and AMP	Seringapatam Reef	Scott Reef (North and South)	Mermaid Reef and AMP	Clerke Reef and State Marine Park	Imperieuse Reef and State Marine Park	Rankin Bank	Glomar Shoals	Rowley Shoals (including Sate Maine Park)	Fantome Shoal	Adele Island	Lacepede Islands	Montebello Islands (including State Marine Park)	Lowendal Islands (including State Nature Reserves)	Barrow Island (including State Nature Reserves, State Marine Park and Marine Management Area)	Muiron Islands (WHA, Marine Management Area)	Pilbara Islands - Southern Island Group (Serrurier, Thevenard and Bessieres Islands - State Nature Reserves)	Pilbara Islands - Northern Island Group (Sandy Island Passage Islands - State nature reserves)	Abrilhos Islands	Kimberley Coast	Dampier Peninsula	Northern Pilbara Shoreline	Ningaloo Coast (North/North West Cape, Exmouth Gulf, Middle and South) (WHA, and State Marine Park)	Shark Bay - Open Ocean Coast	Shark Bay (WHA, State Marine Park)	Ngari Capes State Marine Park							
Habitat																																																
Water Quality	SM01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Marine Sediment Quality	SM02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Coral Reef	SM03	X		X												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Seagrass / Macro-Algae	SM03	X									X					X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
Deeper Water Filter Feeders	SM03	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X							X									X							
Mangroves and Saltmarsh	SM04																										X									X	X	X	X	X	X		X					
Species																																																
Sea Birds and Migratory Shorebirds (significant colonies/ staging sites/ coastal wetlands)	SM05	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Marine Turtles (significant nesting beaches)	SM06	X	X	X	X		X	X	X							X	X	X	X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Pinnipeds (significant colonies/ haul-out sites)	SM07									X	X	X			X																															X		
Cetaceans – Migratory Whales	SM08	X	X	X	X		X	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Oceanic and Coastal Cetaceans	SM08	X	X	X	X		X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dugongs	SM08	X							X							X											X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Sea Snakes	SM08	X		X	X			X	X	X						X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Whale Sharks	SM08			X			X	X										X									X	X	X	X											X							
Other Shark and Ray Populations	SM08, SM09	X	X	X	X		X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Fish Assemblages	SM09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Socio-economic																																																
Fisheries – Commercial	SM10		X	X	X	X	X	X	X	X	X											X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Fisheries – Traditional	SM10															X	X	X									X																			X		
Tourism (incl. recreational fishing)	SM10	X		X			X	X	X		X			X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Receptor areas identified as Pre-emptive Baseline Areas (based on criteria of surface contact and/or entrained hydrocarbon contact ≤10 days (Offshore Australian Marine Parks contacted by hydrocarbons in this timeframe also noted)																																																
Receptor areas identified as Pre-emptive Baseline Areas in the response phase >10 days (based on criteria of surface contact and/or entrained hydrocarbon contact >10 days)																																																
Receptor areas that may be identified as impact or reference sites in the event of major hydrocarbon release and would be identified as part of the SMP planning process																																																

Table D-2: Baseline Studies for the SMPs applicable to identified Pre-emptive Baseline Areas for the Petroleum Activities Program

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group	
Benthic Habitat (Coral Reef)	SM03 Quantitative assessment using image capture using either diver held camera or towed video. Post analysis into broad groups based on taxonomy and morphology.	Studies:					
		<ol style="list-style-type: none"> 1. DBCA LTM Ningaloo Reef program: 1991-ongoing. 2. AIMS/DBCA 2014 Baseline Ningaloo and Muiron Islands Survey – repeat and expansion on the LTM (Co-funded survey: Woodside and AIMS). 3. Pilbara Marine Conservation Partnership. 4. WAMSI LTM Study: Ningaloo Research node: 2009 -10 over the length of Ningaloo reef system (with a focus on coral and fish recruitment). 5. Ningaloo Outlook (CSIRO) - Shallow and Deep Reefs Program (2015-ongoing). 6. Ningaloo Collaboration Cluster: Habitats of the Ningaloo Reef and adjacent coastal areas determined through hyperspectral imagery 7. Allen Coral Atlas 8. Gorgon Barrow Island Net Conservation Benefit Fund administered by DBCA: Characterisation of water quality and benthic communities across an environmental gradient – Ningaloo and Exmouth Gulf 	<ol style="list-style-type: none"> 1. Glomar Shoal and Rankin Bank Environmental Survey Report, 2013, quantitatively surveyed benthic habitats and communities. AIMS report to Woodside. Scientific Publication - Biodiversity and spatial patterns of benthic habitat and associated demersal fish communities at two tropical submerged reef ecosystems, 2018. 2. Rankin Bank Environmental Survey Extension, 2014, Habitat assessment of an area southeast of Rankin Bank. 3. Glomar Shoal and Rankin Bank surveys, 2017. GWF-2 Monitoring Programme. Quantitatively surveyed benthic habitats and communities. 4. Temporal Studies survey of Rankin Bank and Glomar Shoal, 2018. 	<p>Barrow Island:</p> <p>East and West Coast baseline and monitoring for soft sediment, limestone pavement and coral assemblages (Chevron)</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Benthic community monitoring as part of DBCA Western Australian Marine Monitoring Program (2015-ongoing). 2. Pilbara Marine Conservation Partnership Seabed biodiversity survey (2013). 	<p>Coral Reefs & Filter Feeders</p> <ol style="list-style-type: none"> 1. Montebello Marine Park, 2019, Identification and qualitative descriptions of benthic habitat. 2. Montebello Australian Marine Parks – 2019 – Baseline survey on benthic habitats. 3. Pluto Trunkline within Montebello Marine Park – Monitoring marine communities. 	<ol style="list-style-type: none"> 1. Benthic habitat mapping of the subtidal and intertidal habitats of the islands and shoals. Coral communities in shallow subtidal habitat, intertidal pavement. 2. Coral monitoring at Varanus and Airlie Islands (2000 to present) to identify corals, growth from and percentage cover 3. Pilbara Marine Conservation Partnership Seabed biodiversity survey (2013; 2016) 	
		Methods:					
		<ol style="list-style-type: none"> 1. LTM transects, diver based (video) photo quadrats, specimen collection. 2. LTM sites, transects, diver-based video quadrat. 3. Diver video transects, still photography, video and in situ visual estimates from transects, quadrats, manta-tows, towed video and ROV. 4. Video point intercept transects recorded by towed video or diver hand-held video camera. 5. Video transects. 6. LTM transects, diver based (video) photo quadrat. 7. Combination of satellite imagery analysis and mapped/monitored areas. 8. CSIRO and DBCA [Doropolous et al. 2022] 	<ol style="list-style-type: none"> 1. Towed video transects, photo quadrats using towed video system. 2. Towed video transects, photo quadrats using towed video system. 3. Towed video transects, photo quadrats using towed video system. 4. Towed video transects, photo quadrats using towed video system. 	<p>Barrow Island:</p> <p>Coral habitat – mapping, rapid visual assessment, size-class frequency, photoquadrats – live coral cover and survival, tagged corals – growth and survival and coral recruitment</p> <p>Benthic macro-invertebrate surveys – video belt transects</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Fixed long-term monitoring sites. Diver video transect. 2. Towed video, benthic trawl and sled. 	<ol style="list-style-type: none"> 1.ROV Transects 2. Benthic habitat mapping, multibeam acoustic swathing. 3. ROV video. 	<ol style="list-style-type: none"> 1. ROV transects. 2. ROV transects and driver surveys 3. Towed video, benthic trawl and sled 	
References and Data:							

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group	
		1. DBCA unpublished data. DATAHOLDER: DBCA 2. AIMS 2015. DATAHOLDER: AIMS. 3. Pilbara Marine Conservation Partnership DATAHOLDER: CSIRO 4. Depczynski et al. 2011 DATAHOLDER: AIMS, DBCA and WAMSI. 5. CSIRO 2019 – Ningaloo Outlook Program 6. Murdoch University – HyVista Corporation – April and May 2006 (Kobryn et al 2022) 7. https://allencoralatlas.org/atlas/#7.58/-21.5563/114.9133 (accessed 18/05/2022) 8. Doropolous et al. 2022 - https://www.researchgate.net/publication/358286498_Limitations_to_coral_recovery_along_an_environmental_stress_gradient	1. AIMS 2014a and Abdul Wahab et al., 2018. DATAHOLDER: AIMS. 2. AIMS 2014b. DATAHOLDER: AIMS. 3. Currey-Randall et. al., 2019. DATAHOLDER: AIMS 4. Currey-Randall et. al., 2019. DATAHOLDER: AIMS	Barrow Island: Chevron Australia (2015a and b) DATAHOLDER: Chevron Australia Barrow, Montebello and Lowendal Islands: 1. WA Department of Biodiversity, Conservation and Attractions (DBCA) DATAHOLDER: DBCA 2. Pitcher et al. 2016 DATAHOLDER: CSIRO	1. Advisian 2019 2. Keesing 2019 3. McLean et al. 2019	1. Chevron 2010. DATAHOLDER: Chevron. 2. Quadrant Energy/Santos 2016 DATAHOLDER: Santos 3. CSIRO (2013; 2016). Roland Pitcher. DATAHOLDER	
Benthic Habitat (Seagrass and Macroalgae)	SM03 Quantitative assessment using image capture using either diver held camera or towed video. Post analysis into broad groups based on taxonomy and morphology.	Studies:					
		1. Quantitative descriptions of Ningaloo sanctuary zones habitats types including lagoon and offshore areas – Cassata and Collins (2008). 2. CSIRO Ningaloo Outlook Program. 3. Ningaloo Collaboration Cluster: Habitats of the Ningaloo Reef and adjacent coastal areas determined through hyperspectral imagery. 4. Australian Institute of Marine Science – CReefs: Ningaloo Reef Biodiversity Expeditions (2008-2010).		Barrow Island: East Barrow Island – Chevron baseline and monitoring	N/A – see Table D-1	1. Benthic habitat mapping of the subtidal and intertidal habitats of the islands and shoals. Algae communities in shallow subtidal habitat, intertidal pavement. 3. Pilbara Marine Conservation Partnership Seabed biodiversity survey (2013; 2016)	
		1. Video transects to ground truth aerial photographs and satellite imagery. 2. Diver video transects. 3. LTM transects, diver based (video) photo quadrat. 4. LTM transects, diver based (video) photo quadrats, specimen collection. 5. Satellite imagery, mapping and monitoring		East Barrow- seagrass photoquadrats (30 m transects) during spring/summer and winter periods Macroalgae photoquadrats, visual census and biomass and specimen sampling		1. ROV transects. 2. Towed video, benthic trawl and sled	
References and Data:							

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group	
		<ol style="list-style-type: none"> Cassata and Collins 2008. DATAHOLDER: Curtin University – Applied Geology. CSIRO – Ningaloo Outlook Program https://research.csiro.au/ningaloo/outlook AIMS - AIMS (2010) - http://www.aims.gov.au/creefs Murdoch University - HyVista Corporation – April and May 2006 (Kobryn et al 2022) https://allencoralatlas.org/atlas/#7.58/-21.5563/114.9133 (accessed 18/05/2022) 		Barrow Island: Chevron Australia (2015a and b) DATAHOLDER: Chevron Australia		<ol style="list-style-type: none"> Chevron 2010. DATAHOLDER: Chevron CSIRO (2013, 2016). Roland Pitcher. DATAHOLDER 	
Benthic Habitat (Deeper Water Filter Feeders)	SM03 Quantitative assessment using image capture using towed video. Post analysis into broad groups based on taxonomy and morphology.	Studies:					
		<ol style="list-style-type: none"> WAMSI 2007 deep-water Ningaloo benthic communities' study, Colquhoun and Heyward (2008). CSIRO Ningaloo Outlook Program - Deep reef themes 	As above (SM03 Coral Reefs)		As above (SM03 Coral Reefs)	N/A – See Table D-1	
		Methods:					
		<ol style="list-style-type: none"> Towed video and benthic sled (specimen sampling). Side-scan sonar and AUV transects. 					N/A – See Table D-1
Mangroves and Saltmarsh	SM04 Aerial photography and satellite imagery will be used in conjunction with field surveys to map the range and distribution of mangrove communities.	References and Data:					
		<ol style="list-style-type: none"> Colquhoun and Heyward (eds) 2008. DATAHOLDER: WAMSI, AIMS. CSIRO – Ningaloo Outlook https://research.csiro.au/ningaloo/outlook 					N/A – See Table D-1
		Studies:					
		<ol style="list-style-type: none"> Atmospheric corrected land cover classification, NW Cape. Woodside hold Rapid Eye imagery of the Ningaloo Reef and coastal area. Hyperspectral survey (2006) of Ningaloo Reef and coastal area (not yet analysed for Mangroves). North West Cape sensitivity mapping 2012 included Mangrove Bay. Global mangrove distribution as mapped by the USGS and located on UNEP's Ocean Data viewer. 	N/A – See Table D-1	Barrow Island: East and West Coast baseline and monitoring – mapping (HR aerial imagery) and vegetation surveys	N/A – see Table D-1	<ol style="list-style-type: none"> Study conducted by URS (November 2008 to May 2009) to ground truth aerial photography taken between 2001 and 2009 and to identify mangrove species present in the area. 	
		Methods:					

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group
		<ol style="list-style-type: none"> 1. Modular Inversion Program. May 2017 2. Rapid Eye imagery – High resolution satellite imagery from October/November/December 2011 and 2017. 3. Remote sensing – acquisition of HyMap airborne hyperspectral imagery and ground truthing data collection. 4. Reconnaissance surveys of the shorelines of the North West Cape and Muiron Islands. 5. Remote sensing study of global mangrove coverage. 		Barrow – Chevron (2015a and b) – HR mapping (aerial images) and vegetation surveys using belt transects – species composition, estimated total canopy cover, total number of trees, pneumatophore density and canopy density.		<ol style="list-style-type: none"> 1. Aerial Photography and Satellite imagery Species identification and community composition.
References and Data:						
		<ol style="list-style-type: none"> 1. EOMAP 2017 DATAHOLDER: Woodside. 2. AAM 2014. Dataholder: Woodside 3. Kobryn et al. 2013. DATAHOLDER: Murdoch University, AIMS; Woodside. 4. Joint Carnarvon Basin Operators, 2012. DATAHOLDER: Woodside and Apache Energy Ltd. 5. http://data.unep-wcmc.org/ 		Barrow Island: Chevron Australia (2015a and b) DATAHOLDER: Chevron Australia		1. URS (2010) DATAHOLDER: Chevron Australia
Seabirds	SM05 Visual counts of breeding seabirds, nest counts, intertidal bird counts at high tide.	Studies: <ol style="list-style-type: none"> 1. LTM Study of marine and shoreline birds: 1970-2011. 2. LTM of shorebirds within the Ningaloo coastline (Shorebirds 2020). 3. Exmouth Sub-basin Marine Avifauna Monitoring Program (Quadrant Energy/Santos). 4. Seabird and Shorebird baseline studies, Ningaloo Region – Report on January 2018 bird surveys. 5. Wedge-tailed shearwater foraging behaviour in the Exmouth Region 2018 – satellite tracking Methods:	N/A – See Table D-1	Barrow Island: Barrow Island Seabird Monitoring Program (Chevron) Barrow, Montebello and Lowendal Islands: 1. Johnston et al (2013) general inventory and distribution for the Pilbara region (WA Museum) 2. Santos – Integrated Shearwater Monitoring Program (1994-2016) 3. Santos – monitoring of seabird breeding colonies throughout the Lowendal Group of Islands.	N/A – see Table D-1	<ol style="list-style-type: none"> 1. Migratory waterbirds relevant to the Wheatstone Project on behalf of URS in 2008 - 2009. 2. Quadrant Energy/Santos – Integrated Shearwater Monitoring Program (1994-2016). 3. Exmouth Sub-basin Avifauna Monitoring Program (2013-2014)

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group
		<p>1. Counts of nesting areas, counts of intertidal zone during high tide.</p> <p>2. The Shorebirds 2020 database comprises the most complete shorebird count data available in Australia. The data have been collected by volunteer counters and BirdLife Australia staff for approximately 150 roosting and feeding sites, mainly in coastal Australia. The data go back as far as 1981 for key areas.</p> <p>3. The Exmouth Sub-basin Marine Avifauna Monitoring Program undertook a detailed assessment of seabird and shorebird use in the Exmouth Sub-basin. Four aerial surveys and four island surveys were conducted between February 2013 and January 2015 for this Program, inclusive of the mainland coasts, of shore islands and a 2,500 km² area of ocean adjacent to the Exmouth Sub-basin.</p> <p>4. Shorebird counts, Shearwater Burrow Density.</p> <p>5. Telemetry (GPS & Satellite tags).</p>		<p>Barrow Island – 2008-ongoing annual surveys: abundance, nest density, presence/absence of egg or chick/fledgling</p> <p>Barrow, Montebello and Lowendal Islands:</p> <p>1. Desktop review (WA Museum)</p> <p>2. Nest burrow density, presence/absence of eggs or chicks in burrows</p> <p>3. The distribution and abundance of other nesting seabirds within the Lowendal Island group, including up to 45 islands and islets</p>		<p>1. Ground counts, aerial surveys of wetlands by helicopter.</p> <p>2. Burrow count and observation data, burrow density, colony stability, breeding participation, incubation effort and reproductive success has been determined. Tagging data</p> <p>3. Aerial surveys and onshore island surveys.</p>
		<p>References and Data:</p> <p>1. Johnstone et al. 2013. DATAHOLDER: WA MUSEUM. AMOS/DBCA (DPaW) 2014.</p> <p>2. BirdLife Australia DATAHOLDER: Woodside and BirdLife Australia</p> <p>3. Surman & Nicholson 2015.</p> <p>4. BirdLife Australia: DATAHOLDER: Woodside</p> <p>5. Cannel et al. 2019 DATAHOLDER: UWA and BirdLife Australia</p>		<p>Barrow – Chevron (2015c) DATAHOLDER: Chevron Australia</p> <p>Barrow, Montebello and Lowendal Islands:</p> <p>1. Johnstone et al (2013) DATAHOLDER: (WA Museum</p> <p>2. Santos DATAHOLDER: Santos</p> <p>3. Surman and Nicholson (2012) DATAHOLDER: Santos</p>		<p>1. Bamford, MJ & AR. 2011. DATAHOLDER: Chevron.</p> <p>2. Quadrant Energy/Santos. Dataholders. Santos</p> <p>3. Quadrant Energy/Santos. Dataholders. Santos</p>
Turtles	SM06	Studies:				

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group	
	Beach surveys (recording species, nests, and false crawls).	<ol style="list-style-type: none"> 1. Exmouth Islands Turtle Monitoring Program. 2. Ningaloo Turtle Program 3. Turtle activity and nesting on the Muiron Islands and Ningaloo Coast (2018). 4. Spatial and temporal use of inter-nesting habitat by sea turtles along the Muiron Islands and Ningaloo Coast – 2018-2019 	N/A – See Table D-1	<p>Barrow Island:</p> <p>Chevron Australia: long term monitoring programs for flatback turtles</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Marine turtle monitoring as part of DBCA long-term turtle monitoring program (ongoing). 2. LTM Study of Green, Flatback, Hawksbill turtles on beaches within the Barrow, Lowendal and Montebello Island Complex. 3. Santos 2013 turtle nesting survey on the Lowendal islands. 4. Varanus Island Turtle monitoring program (2005 – present). <p>North West Shelf Flatback Conservation Program – conserve North West Shelf stock – scope covers all summer nesting flatback turtles - https://flatbacks.dbca.wa.gov.au/about</p>	N/A – see Table D-1	<ol style="list-style-type: none"> 1. Baseline marine turtle surveys 2009 (included the islands of Serrurier, Bessieres and Thevenard), Pendoley (2009). 2. Exmouth Islands Turtle Monitoring Program (2013 and 2014) 3. North West Shelf Flatback Turtle Conservation Program's 4. Inter-nesting distribution of flatback turtles and industrial development in Western Australia (Thevenard Island) 	
		Methods:					
		<ol style="list-style-type: none"> 1. Astron (on behalf of Santos) to address a gap in the knowledge of turtle numbers at key locations (offshore islands within the region) that are not currently part of an existing monitoring programs (e.g. the NTP). Field surveys were conducted in October 2013 and January 2014. Surveys were conducted on 12 islands, with each island surveyed once (with the exception of Beach 8 at North Muiron Island) and all tracks counted. 2. Long term trends in marine turtle populations, beach surveys, track counts, best location, mortality counts. 3. On-beach monitoring and aerial surveys. 4. Tagging (satellite transmitter), analysis of interesting, migration and foraging grounds movements and behaviour. 		<p>Barrow Island – Chevron Australia: 2005 -ongoing annual surveys, flatback turtles – nesting success, track counts and satellite tracking, hatchling survival and dispersal.</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Nesting demographics 2. Nesting demographics 3. Tagging and nest counts 4. Tagging and nest counts at Varanus, Beacon, Bridled, Abutilon and Parakeelya islands. <p>North West Shelf Flatback Conservation Program - https://flatbacks.dbca.wa.gov.au/program-activities</p>		<ol style="list-style-type: none"> 1. Beach/Nesting surveys (counts by species). 2. Beach/Nesting surveys (counts by species). 3. Nesting and tagging studies 4. Satellite tracking methods 	
		References/Data:					

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group
		1.Santos – Report. 2. NTP Annual Reports DATAHOLDERS: DBCA. Reports available at http://ningalooturtles.org.au/?page_id=181 3.Rob et al. 2019 DATAHOLDER: DBCA 4.Tucker et al. 2019 DATAHOLDER: DBCA		Barrow Island – Chevron (2015c) DATAHOLDER: Chevron Australia Barrow, Montebello and Lowendal Islands: 1. DBCA 2. Pendoley 2005. AMOSC/DBCA (DPaW) 2014. 3. Santos (2014) DATAHOLDER: Santos 4. Santos (2005-prsésent) DATAHOLDER: Santos North West Shelf Flatback Conservation Program https://flatbacks.dbca.wa.gov.au/program-activities		1. Pendoley 2009. DATAHOLDER: Chevron. 2. Quadrant Energy/Santos. Dataholders. Santos 3. DBCA. Dataholder 4. Pendoley Environment -Whitlock, Pendoley and Hamann (2010-2011)
Fish	SM09 Baited Remote Underwater Video Stations (BRUVS), Visual Underwater Counts (VUC), Diver Operated Video (DOV).	Studies: 1. AIMS/DBCA 2014 Baseline Ningaloo Survey – repeat and expansion on the LTM (Co-funded survey: Woodside and AIMS). 2. Demersal fish populations – baseline assessment (AIMS/WAMSI). 3. DBCA study measured Species Richness, Community Composition, and Target Biomass, through UVC. BRUVS studies determining max N, Species Richness, and Biomass. 4. Pilbara Marine Conservation Partnership Stereo BRUVS in shallow water (~10m) in 2014 in northern region of the Ningaloo Marine Park, in shallow water (~10m) inside the lagoonal reef of the Ningaloo Marine Park in 2016, in deep water (~40m) across the length of the Ningaloo Marine Park in 2015, in shallow water outside of Ningaloo Reef from Waroora to Jurabi in 2015 and offshore of the Muiron Islands in 2015. 5. Elasmobranch faunal composition of Ningaloo Marine Park. 6. Juvenile fish recruitment surveys at Ningaloo reef. 7. Demersal fish assemblage sampling method comparison 8. Ningaloo Outlook (CSIRO) - Shallow and Deep Reefs Program Methods:	1. Glomar Shoal and Rankin Bank Environmental Survey Report, 2013, quantitatively surveyed benthic habitats and communities. AIMS report to Woodside. Scientific Publication - Biodiversity and spatial patterns of benthic habitat and associated demersal fish communities at two tropical submerged reef ecosystems, 2018. 2. Rankin Bank Environmental Survey Extension, 2014, Habitat assessment of an area southeast of Rankin Bank. 3. Glomar Shoal and Rankin Bank surveys, 2017. GWF-2 Monitoring Programme. Quantitatively surveyed benthic habitats and communities. 4. Temporal Studies survey of Rankin Bank and Glomar Shoal, 2018.	Barrow Island: Chevron: East and West Coast intertidal and subtidal baseline and monitoring Barrow, Montebello and Lowendal Islands: 1. Pilbara Marine Conservation Partnership Stereo BRUVS drops in shallow water (~10m) from Exmouth to Barrow Islands in 2015. 2. Finfish monitoring as part of DBCAs Western Australian Marine Monitoring Program (2015-ongoing).	1. CSIRO – Fish Diversity. 2. Fish species richness and abundance.	1.Pilbara Marine Conservation Partnership Stereo BRUVS drops in deep water (20-55m) offshore of Bessieres Island in 2016.

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Ningaloo Coast and the Muiron Islands	Rankin Bank & Glomar Shoal	Barrow, Montebello and Lowendal Islands	Montebello AMP	Pilbara Islands – Southern Island Group	
		<ol style="list-style-type: none"> 1. UVC surveys. 2. BRUVS Study with 304 video samples at three specific depth ranges (1-10 m, 10-30 m and 30-110m). 3. UVC surveys. 4. Stereo BRUVS 5. Snorkel and Scuba surveys. 5. Underwater visual census. 6. Diver operated video. 7. Diver UVC. 8. Diver UVC, stereo BRUVs 	<ol style="list-style-type: none"> 1. BRUVs. 2. BRUVs. 3. BRUVs. 4. BRUVs. 	<p>Barrow Island – Chevron (2015a and b) – demersal fish: stereo BRUVS (subtidal habitats) and netting combination for mangrove habitat</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Stereo BRUVS. 2. Diver underwater visual surveys (UVS) 	<ol style="list-style-type: none"> 1. Semi V Wing trawl net or an epibenthic sled. 2. ROV Video. 	<ol style="list-style-type: none"> 1. Stereo BRUVs 	
		References/Data:					
		<ol style="list-style-type: none"> 1. AIMS 2014. DATAHOLDER: AIMS/Woodside. 2. Fitzpatrick et al. 2012. DATAHOLDERS: WAMSI, AIMS. 3. DBCA unpublished data. DATAHOLDER: DBCA/AIMS. 4. CSIRO Data DATAHOLDER: CSIRO Data Centre (██████████). 5. Stevens, J.D., P.R., White, W.T., McAuley, R.B., Meekan, M.G. 2009. 6. WAMSI unpublished data DATAHOLDER: AIMS (██████████). 7. DATAHOLDER: WAMSI 8. CSIRO – Ningaloo Outlook Program https://research.csiro.au/ningaloo/outlook 	<ol style="list-style-type: none"> 1. AIMS 2014a and Abdul Wahab et al., 2018. DATAHOLDER: AIMS. 2. AIMS 2014b. DATAHOLDER: AIMS. 3. Currey-Randall et. al., 2019. DATAHOLDER: AIMS 4. Currey-Randall et. al., 2019. DATAHOLDER: AIMS 	<p>Barrow Island – Chevron Australia (2015a and b) DATAHOLDER: Chevron</p> <p>Barrow, Montebello and Lowendal Islands:</p> <ol style="list-style-type: none"> 1. Unpublished report CSIRO DATAHOLDER: CSIRO, CSIRO Data centre (██████████) 2. DBCA 	<ol style="list-style-type: none"> 1. Keesing 2019. 2. McLean et al. 2019. 	<ol style="list-style-type: none"> 1. CSIRO. DATAHOLDER: CSIRO (██████████) 	

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ANNEX E: TACTICAL RESPONSE PLANS

TACTICAL RESPONSE PLANS
Exmouth
Mangrove Bay
Turquoise Bay
Yardie Creek
Muiron Islands
Jurabi to Lighthouse Beaches Exmouth
Ningaloo Reef – Refer to Mangrove/ Turquoise Bay and Yardie Creek
Exmouth Gulf
Shark Bay Area 1: Carnarvon to Wooramel
Shark Bay Area 2: Wooramel to Petite Point
Shark Bay Area 3: Petite Point to Dubaut Point
Shark Bay Area 4: Dubaut Point to Herald Bight
Shark Bay Area 5: Herald Bight to Eagle Bluff
Shark Bay Area 6: Eagle Bluff to Useless Loop
Shark Bay Area 7: Useless Loop to Cape Bellefin
Shark Bay Area 8: Cape Bellefin to Steep Point
Shark Bay Area 9: Western Shores of Edel Land
Shark Bay Area 10: Dirk Hartog Island
Shark Bay Area 11: Bernier and Dorre Islands
Abrohlos Islands: Pelseart Group
Abrohlos Islands: Wallabi Group
Abrohlos Islands: Easter Group
Dampier
Rankin Bank & Glomar Shoals
Barrow and Lowendal Islands
Pilbara Islands – Southern Island Group
Montebello Island – Stephenson Channel Nth TRP
Montebello Island – Champagne Bay and Chippendale channel TRP
Montebello Island – Claret Bay TRP
Montebello Island – Hermite/Delta Island Channel TRP
Montebello Island – Hock Bay TRP
Montebello Island – North and Kelvin Channel TRP
Montebello Island – Sherry Lagoon Entrance TRP
Withnell Bay
Holden Bay
King Bay
No Name Bay / No Name Beach
Enderby Island – Dampier
Rosemary Island – Dampier
Legendre Island – Dampier
Karratha Gas Plant

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KGP to Withnell Creek
KGP to Northern Shore
KGP Fire Pond & Estuary
KGP to No Name Creek
Broome
Sahul Shelf Submerged Banks and Shoals
Clerke Reef (Rowley Shoals)
Imperieuse Island (Rowley Shoals)
Mermaid Reef (Rowley Shoals)
Scott Reef
Oiled Wildlife Response
Exmouth
Dampier region
Shark Bay

APPENDIX I FIRST STRIKE PLAN



Ngujima-Yin Operations – Oil Pollution First Strike Plan

Corporate HSE

Hydrocarbon Spill Preparedness

March 2024

Revision 10b

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CONTROL AGENCIES AND INCIDENT CONTROLLERS

Source	Location	Level	Control Agency	Incident Controller
Spill from facility including subsea infrastructure Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations	Commonwealth waters	1	Woodside	Person In Charge (PIC) with support from Onshore Team Leader (OTL)
		2/3	Woodside	Corporate Incident Management Team Incident Commander (CIMT IC)
	State waters	1	Woodside	CIMT IC
		2/3	Department of Transport (DoT)	DoT Incident Controller
	Within port limits	1	Woodside	CIMT IC
		2/3	DoT	DoT Incident Controller
Spill from vessel Note: SOPEP should be implemented in conjunction with this document	Commonwealth waters	1	Australian Marine Safety Authority (AMSA)	Vessel Master
		2/3	AMSA	AMSA (with response assistance from Woodside)
	State waters	1	DoT	DoT Incident Controller
		2/3	DoT	DoT Incident Controller
	Within port limits	1	Port Authority	Port Harbour Master
		2/3	Port Authority/ DoT	Port Harbour Master/ DoT Incident Controller

SPILLS IN STATE WATERS

As detailed in the table above, in the event of a hydrocarbon spill (hereafter 'spill') where Woodside Energy Ltd ('Woodside') is the responsible party and the spill may impact State waters and shorelines, Woodside (or the Vessel Master) will commence the initial response actions and notify the Western Australian Department of Transport (DoT).

Initially Woodside will be required to make available an appropriate number of suitably qualified persons to work in the DoT IMT ([APPENDIX F](#) – Woodside Liaison Officer resources to DoT). DoT's role as the Controlling Agency in State waters does not negate the requirement for Woodside to have appropriate plans and resources in place to adequately respond to a marine hydrocarbon spill incident in State Waters or to commence the initial response actions to a spill prior to DoT establishing incident control in line with DoT *Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements* (July 2020). Cost recovery arrangements for offshore marine pollution incidents (MOP) are in accordance with Section 9 of the Guidance Note:

https://www.transport.wa.gov.au/mediaFiles/marine/MAC_P_Westplan_MOP_OffshorePetroleumIndGuidance.pdf

Woodside's Incident Management Structure for a hydrocarbon spill, including Woodside Liaison Officer's command structure within DoT can be seen at [APPENDIX E](#) – Woodside Incident Management Structure.

The coordination structure for a concurrent hydrocarbon spill in both Commonwealth and State waters/ shorelines is shown in [APPENDIX D](#) – Coordination structure for a concurrent hydrocarbon spill in both Commonwealth and State waters/ shorelines.

RESPONSE PROCESS OVERVIEW

For guidance on credible scenarios and hydrocarbon characteristics, refer to APPENDIX A		
ALL INCIDENTS	Notify the Woodside Communication Centre (WCC) on: [REDACTED]	
	Incident Controller or delegate to make relevant notifications in Table 1-1 of this Oil Pollution First Strike Plan.	
LEVEL 1	FACILITY INCIDENT	VESSEL INCIDENT
	Coordinate pre-identified tactics in Table 2-1 Remember to download each Operational Plan.	Notify AMSA and coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan Remember to download each Operational Plan.
	If the spill escalates such that the site cannot manage the incident, inform the WCC on: [REDACTED] and escalate to a level 2/3 incident.	
LEVEL 2/3	FACILITY INCIDENT	VESSEL INCIDENT
	Handover control to CIMT and notify DoT.	Handover control to AMSA and stand up CIMT to assist.
	Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Commence validated strategies.	If requested by AMSA: Commence quick revalidation of the recommended strategies on Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Commence validated strategies.
	Create an Incident Action Plan (IAP) for all ongoing operational periods. The content of the IAP should reflect the selected response strategies based on current situational awareness. For the full detailed pre-operational Net Environmental Benefit Analysis (NEBA) see the OSPRMA Appendix A	If requested by AMSA: Create an IAP for all ongoing operational periods. The content of the IAP should reflect the selected response strategies based on current situational awareness. For the full detailed pre-operational NEBA see the OSPRMA Appendix A

1. NOTIFICATIONS

The Incident Controller or delegate must ensure the below notifications (Table 1-1) are completed within the designated timeframes.

For spills from a vessel, relevant notifications must be undertaken by a WEL representative.

Table 1-1: Notifications

In the event of an incident between vessels, also activate relevant vessel Emergency Response Plans and/or Bridging Documents

Timing	By	To	Name	Contact	Instruction	Form	Complete? (✓)
NOTIFICATIONS FOR ALL LEVELS OF SPILL							
Immediately	Offshore Installation Manager (OIM) or Vessel Master	Woodside Communication Centre (WCC)	CIMT IC	[REDACTED]	Verbally notify WCC of event and estimated volume and hydrocarbon type.	Verbal	
Within 2 hours	Woodside Site Rep (WSR), CIMT IC or Delegate	National Offshore Petroleum Safety Environmental Management Authority (NOPSEMA ¹)	Incident notification office	[REDACTED]	Verbally notify NOPSEMA for spills >80L. Record notification using Initial Verbal Notification Form or equivalent and send to NOPSEMA as soon as practicable (cc to NOPTA and DEMIRS).	■	
Within 3 days	WSR, CIMT IC or Delegate				Provide a written NOPSEMA Incident Report Form as soon as practicable (no later than 3 days after notification) (cc to NOPTA and DEMIRS) NOPSEMA [REDACTED] NOPTA [REDACTED] DEMIRS [REDACTED]	■	
As soon as practicable	CIMT IC or Delegate	Woodside	Environment Unit Leader	As per roster	Verbally notify Environment Unit Leader of event and seek advice on relevant performance standards from EP	Verbal	
Within 2 hours of becoming aware of a marine pollution incident (MOP) that occurs in or may impact state waters	CIMT IC or Delegate	WA Department of Transport	DoT Maritime Environmental Emergency Response Unit (MEER) Duty Officer	[REDACTED]	Verbally notify DoT MEER Duty Officer that a spill has occurred and, if required, request use of equipment stored in Karratha. Follow up with a written POLREP as soon as practicable following verbal notification. Additionally, DoT to be notified if spill is likely to extend into WA State waters. Request DoT to provide Liaison to Woodside CIMT.	■	
As soon as practicable	CIMT IC or Delegate	Department of Climate Change, Energy, the Environment and Water (DCCEEW) Director of National Parks	Marine Park Compliance Duty Officer	[REDACTED]	The Marine Park Compliance Duty Officer is notified in the event of oil pollution within a marine park, or where an oil spill response action must be taken within a marine park, so far as reasonably practicable, prior to response action being taken. This notification should include: <ul style="list-style-type: none"> • titleholder details • time and location of the incident • proposed response arrangements and locations as per the OPEP • contact details for the response coordinator • confirmation of access to relevant monitoring and evaluation reports when available. 	Verbal	
As soon as practicable if there is potential for oiled wildlife or the spill is expected to contact land or waters managed by WA Department of Biodiversity,	CIMT IC or Delegate	WA Department of Biodiversity, Conservation and Attractions (DBCA)	Duty Officer	[REDACTED]	Phone call notification	Verbal	

¹ Notification to NOPSEMA must be from a Woodside Representative.

Conservation and Attractions							
As soon as practicable	Public Information	Relevant persons/ organisations	To be determined	To be determined	Should it be identified that additional persons such as, but not limited to, commercial fishers and tourism operators may be affected, Woodside would, at the relevant time, engage with these parties as appropriate and in alignment with the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) for Ngujima-Yin Operations. Relevant persons/ organisations will be re-assessed throughout the response period.	Verbal initially	
As soon as practicable	Public Information	Cultural authorities	To be determined	To be determined	Should it be identified that cultural authorities may be affected, Woodside would, at the relevant time, engage with these parties as appropriate and in alignment with the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) for Ngujima-Yin Operations. Relevant cultural authorities will be re-assessed throughout the response period.	Verbal initially	
ADDITIONAL NOTIFICATIONS TO BE MADE ONLY IF SPILL IS FROM A VESSEL							
Without delay as per protection of the Sea Act, part II, section 11(1)	Vessel Master	Australian Maritime Safety Authority (AMSA)	Response Coordination Centre (RCC)	██████████ ██████████	Verbally notify AMSA RCC of the hydrocarbon spill. Follow up with a written Marine Pollution Report (POLREP) as soon as practicable following verbal notification.	████	
ADDITIONAL LEVEL 2/3 NOTIFICATIONS							
As soon as practicable	CIMT IC or Delegate	AMOSC	AMOSC Duty Manager	██████████	Notify AMOSC that a spill has occurred and follow-up with an email from the CIMT IC/ CIMT Deputy IC/ CMT Leader to formally activate AMOSC. Determine what resources are required consistent with the AMOS Plan and detail in a Service Contract that will be sent to Woodside from AMOSC upon activation.	████	
As soon as practicable	CIMT IC or Delegate	Oil Spill Response Limited (OSRL)	OSRL Duty Manager	██████████	Contact OSRL duty manager and request assistance from technical advisor in Perth. Send the completed notification form to OSRL as soon as practicable.	████	
					For mobilisation of resources, send the Mobilisation Form to OSRL as soon as practicable. The mobilisation form must be signed by a nominated callout authority from Woodside. OSRL can advise the names on the call out authority list, if required.	████	
As soon as practicable if extra personnel are required for incident support	CIMT IC or Delegate	Marine Spill Response Corporation (MSRC)	MSRC Response Manager	██████████ ██████████	Activate the contract with MSRC (in full) for the provision of up to 30 personnel depending on what skills are required. Please note that provision of these personnel from MSRC are on a best endeavours basis and are not guaranteed.	Verbal	

2. RESPONSE TECHNIQUES

Table 2-1: Response techniques

Technique	Spill type		Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	Crude	NY Topside Blend					
Operational monitoring – tracking buoy (OM02)	Yes	Yes	ALL	If a vessel is on location, consider the need to deploy the oil spill tracking buoy. If no vessel is on location, consider the need to mobilise oil spill tracking buoys from the King Bay Supply Base (KBSB) Stockpile. If a surface sheen is visible from the facility, deploy the satellite tracking buoy within two hours.	Operations	DAY 1: Tracking buoy deployed within 2 hours.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02) of The Operational Monitoring Operational Plan. Deploy tracking buoy in accordance with Link .
Operational monitoring – predictive modelling (OM01)	Yes	Yes	ALL	Undertake initial modelling using the Rapid Assessment Oil Spill Tool and weathering fate analysis using Automated Data Inquiry for Oil Spills (ADIOS) or refer to the hydrocarbon information in Appendix A .	Situation or Environment	DAY 1: Initial modelling within 6 hours using the Rapid Assessment Tool.	Predictive Modelling of Hydrocarbons to Assess Resources at Risk (OM01 of The Operational Monitoring Operational Plan). <i>Planning to download immediately and follow steps</i>
	Yes	Yes	ALL	Send Oil Spill Trajectory Modelling (OSTM) form (Appendix B, Form 7) to RPS Response (██████████).	Situation	DAY 1: Detailed modelling within 4 hours of RPS Response receiving information from Woodside.	
Operational monitoring – aerial surveillance (OM02)	Yes	Yes	ALL	Instruct Aviation Unit Leader to commence aerial observations in daylight hours. Aerial surveillance observer to complete log in Appendix B, Form 8 .	Logistics – Aviation	DAY 1: 1 trained aerial observers. 1 aircraft available. Report made available to the CIMT within 2 hours of landing after each sortie.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02 of The Operational Monitoring Operational Plan). <i>Planning to download immediately and follow steps</i>
Operational monitoring – satellite tracking (OM02)	Yes	Yes	ALL	The Situation Unit Leader to action satellite imagery services. This may be obtained via: <ul style="list-style-type: none"> • AMOSC Duty Manager: ██████████ • OSRL Duty Manager: ██████████ • KSAT: ██████████ • Others identified by CIMT 	Situation	DAY 1: Service provider will confirm availability of an initial acquisition within 2 hours. Data received to be uploaded into Woodside Common Operating Picture.	
Operational monitoring – monitoring hydrocarbons in water (OM03)	Yes	Yes	ALL	Consider the need to mobilise resources to undertake water quality monitoring (OM03).	Planning or Environment	DAY 3: Water quality assessment access and capability. Daily fluorometry reports will be provided to CIMT.	Detecting and Monitoring for the Presence and Properties of Hydrocarbons in the Marine Environment (OM03 of The Operational Monitoring Operational Plan).
Operational monitoring – pre-emptive assessment of receptors at risk (OM04)	Yes	Yes	ALL	Consider the need to mobilise resources to undertake pre-emptive assessment of sensitive receptors at risk (OM04).	Planning or Environment	DAY 3: In agreement with WA DoT, deployment of 3 specialists from resource pool to establish the status of sensitive receptors.	Pre-emptive Assessment of Sensitive Receptors (OM04 of The Operational Monitoring Operational Plan).
Operational monitoring – shoreline assessment (OM05)	Yes	Yes	ALL	Consider the need to mobilise resources to undertake shoreline assessment surveys (OM05).	Planning or Environment	DAY 3: In agreement with WA DoT, deployment of 2 specialists trained in Shoreline Clean-up Assessment Technique (SCAT) for each of the RPAs with predicted impacts.	Shoreline Assessment (OM05 of The Operational Monitoring Operational Plan).
Surface dispersant	Yes	Potentially	ALL	Dispersant from Woodside and AMOSC (Dampier and Exmouth) stockpiles mobilised. Consideration of mobilisation of interstate/international dispersant stockpiles.	Operations, Logistics and Planning	DAY 1: One FWADC aircraft with minimum payload of 1,850 litre mobilised to site within four hours of activation. One additional FWADC mobilised to site within another 20 hours of activation. Access to dispersant stockpiles within 24-48 hours.	Surface Dispersant Operational Plan <i>Logistics to download immediately and follow steps</i>

Technique	Spill type		Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	Crude	NY Topside Blend					
	Yes	Yes				<p>DAY 2:</p> <p>Two additional FWADC and one Hercules mobilised to site within 48 hours of activation.</p> <p>One high-capacity aircraft with minimum payload of 10 m³ available to spray on day two.</p> <p>Two support vessels from integrated fleet will undertake dispersant trials within 48 hours of the release.</p>	
Containment and recovery	Yes	Yes	ALL	<p>Equipment from Woodside, AMOSC and AMSA Western Australian Stockpiles mobilised.</p> <p>Consideration of mobilisation of interstate/international containment and recovery equipment (i.e. OSRL).</p>	Logistics and Planning	<p>DAY 2:</p> <p>Two vessel-based containment and recovery operations deployed.</p> <p>Four containment and recovery teams available by day five.</p>	<p>Containment and Recovery Operational Plan</p> <p><i>Logistics to download immediately and follow steps</i></p>
Mechanical dispersion	No	No	N/A	This response strategy is not recommended.			
In-situ burning	No	No	N/A	This response strategy is not recommended.			
Shoreline protection and deflection	Yes	Yes	ALL	<p>Equipment from Woodside, AMOSC and AMSA Western Australian Stockpiles mobilised.</p> <p>Consideration of mobilisation of interstate/international shoreline protection equipment (i.e. OSRL).</p>	Operations, Environment and Planning	<p>DAY 1:</p> <p>In agreement with WA DoT, activate relevant Tactical Response Plans (TRPs) within 12 hours.</p> <p>DAY 2:</p> <p>In agreement with WA DoT, mobilise teams to RPAs within 48 hours of operational monitoring predicting impacts.</p> <p>In agreement with WA DoT, equipment mobilised from closest stockpile within 48 hours.</p> <p>DAY 4:</p> <p>Supplementary equipment mobilised from State, AMOSC, AMSA stockpiles within 96 hours.</p> <p>Supplementary equipment mobilised from OSRL within 96 hours</p>	<p>Protection and Deflection Operational Plan</p> <p><i>Logistics to download immediately and follow steps</i></p>
Shoreline clean-up	Yes	Yes		<p>Equipment from Woodside, AMOSC and AMSA Western Australian Stockpiles mobilised.</p> <p>Consideration of mobilisation of interstate/international shoreline clean-up equipment (i.e. OSRL).</p>	Operations, Environment and Planning	<p>DAY 1:</p> <p>TRPs available for at risk shorelines within 12 hours.</p> <p>DAY 2:</p> <p>In agreement with WA DoT, mobilise teams to RPAs within 48 hours of operational monitoring predicting impacts.</p> <p>In agreement with WA DoT, equipment mobilised from closest stockpile within 48 hours.</p> <p>Access to at least 213 m³ of solid and liquid waste storage available within 2 days, and 2,400 by Day 6 upon activation of 3rd party contract.</p> <p>DAY 4:</p> <p>Supplementary equipment mobilised from State, AMOSC, AMSA stockpiles within 96 hours.</p> <p>Supplementary equipment mobilised from OSRL within 96 hours</p>	<p>Shoreline Clean-up Operational Plan</p> <p><i>Logistics to download immediately and follow steps</i></p>
Oiled wildlife response	Yes	Yes	ALL	<p>If oiled wildlife is a potential impact, request AMOSC to mobilise containerised oiled wildlife first strike kits and relevant personnel. Refer to relevant Tactical Response Plan for potential wildlife at risk.</p> <p>Mobilise AMOSC Oiled Wildlife Containers.</p>	Logistics and Planning	<p>DAY 5:</p> <p>Initiate a wildlife first strike response 96 hours prior to confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DBCA.</p>	Oiled Wildlife Response Operational Plan

Technique	Spill type		Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	Crude	NY Topside Blend					
				Consider whether additional equipment is required from local suppliers.			
Scientific monitoring (type II)	Yes	Yes	ALL	Notify Woodside Biodiversity and Science Team of spill event.	Environment		Oil Spill Scientific Monitoring Programme – Operational Plan
SOURCE CONTROL TECHNIQUES							
Subsea First Response Toolkit	Yes	Yes	L2/3	Debris clearance equipment to be mobilised prior to deployment of capping stack.	Source Control	DAY 2: Remotely Operated Vehicle (ROV) on Mobile Offshore Drilling Unit (MODU) ready for deployment within 48 hours subject to risk assessment and approvals, to undertake inspection and/or well intervention. ROV equipment deployed within 7 days. Intervention vessel with minimum requirement of a working class ROV and operator mobilised to with for deployment within 11 days.	Source Control Emergency Response Planning Guideline Subsea Dispersant Application Operational Plan
Subsea dispersant	Yes	N/A	ALL	Subsea dispersant stockpile (Fremantle) from AMOSC and SFRT equipment (Jandakot) from AMOSC/Oceanneering. Suitable vessel required.	Operations, Logistics and Planning	DAY 1: Mobilisation of SSDI toolkit and subsea dispersant (500 m ³ available from AMOSC Fremantle stockpiles) to site. DAY 5: SSDI equipment and dispersant mobilised to site. Support vessels available to begin application on within 24-48 hours. Day 7: Subsea dispersant application able to be conducted at an application volume of 75m ³ per day. Response established within 7 days of release.	
Capping Stack	Yes	Yes	L2/3	Conventional/vertical capping stack deployment with a heavy lift vessel will be attempted if plume radius is ~25 m and environmental conditions permit (wind speed, wave height, current and plume radius).	Source Control	DAY 1: Identify source control vessel availability within 24 hours. Capping stack on suitable vessel mobilised to site within 16 days.	
Relief Well	Yes	Yes	L2/3	Relief well drilling will be the main technique employed to control a loss of well containment event.	Source Control	DAY 1: Identify source control vessel availability within 24 hours. MODU mobilised to location within 21 days.	

3. RESPONSE PROTECTION AREAS

Action: Provide relevant Control Agency with applicable Tactical Response Plans for any Response Protection Areas (RPAs) identified during operational monitoring.

Based on deterministic hydrocarbon spill modelling results, no shoreline sensitive receptors have the potential to be contacted by hydrocarbons at or above response threshold levels (>100 g/m²) within 48 hours of a spill.

Other receptors that are predicted to be contacted beyond the first 48 hours of the spill include:

- Ashmore Reef MP*
- Barrow/Middle/Boodie Islands/reserves/reefs
- Dampier Archipelago Islands/reserves/reefs
- Derby - West Kimberley
- East Pilbara - shoreline
- East Pilbara Islands/reserves/reefs
- Eighty Mile Beach - Broome/Islands/Reserves/Reefs
- Exmouth Gulf/Islands/reserves/reefs
- Kimberley Islands/Reserves/Reefs/IPAs
- Lalang-garram Marine Park (North, Camden Sound and Horizontal Falls)
- Lowendal, Hermite, Montebello Islands/reserves/reefs
- Middle Pilbara Islands/reserves/reefs
- Ningaloo (Exmouth, Coast, Australian and State MP)
- Ninglool/Murion Islands/reserves/reefs
- North Pilbara Islands/reserves/reefs
- Northern Pilbara - Shoreline
- Shark Bay - Coast/ Islands/ Reefs/ Reserves
- South Pilbara Islands/reserves/reefs
- Southern Pilbara – Shoreline
- Wyndham - East Kimberley

*: Submerged or open ocean location

Tactical Response plans for these locations can be accessed via the [Tactical Response Plans portal](#) and include the details of potential forward operating bases and staging areas.

Oil Spill Trajectory Modelling specific to the spill event will be required to determine the regional sensitive receptors to be contacted beyond 48 hours of a spill.

Figure 3-1 illustrates the location of regional sensitive receptors in relation to the Ngujima-Yin Operations Operational Area and identifies priority protection areas.

Consideration should be given to other stakeholders (including mariners) in the vicinity of the spill location. **Table 3-1** indicates the assets within the vicinity of the Ngujima-Yin Operations Operational Area.

Table 3-1: Assets in the vicinity of the Ngujima-Yin Operations Operational Area

Asset	Distance and Direction from Operational Area	Operator
Pyrenees Facility (Pyrenees FPSO)	~2 km south-east	Woodside Energy Limited
Macedon Commonwealth Operations (Macedon FPSO)	~2 km south-east	Woodside Energy Limited
Van Gogh/ Coniston/ Novara Development (Ningaloo Vision FPSO)	~1 km north-east	Santos Limited

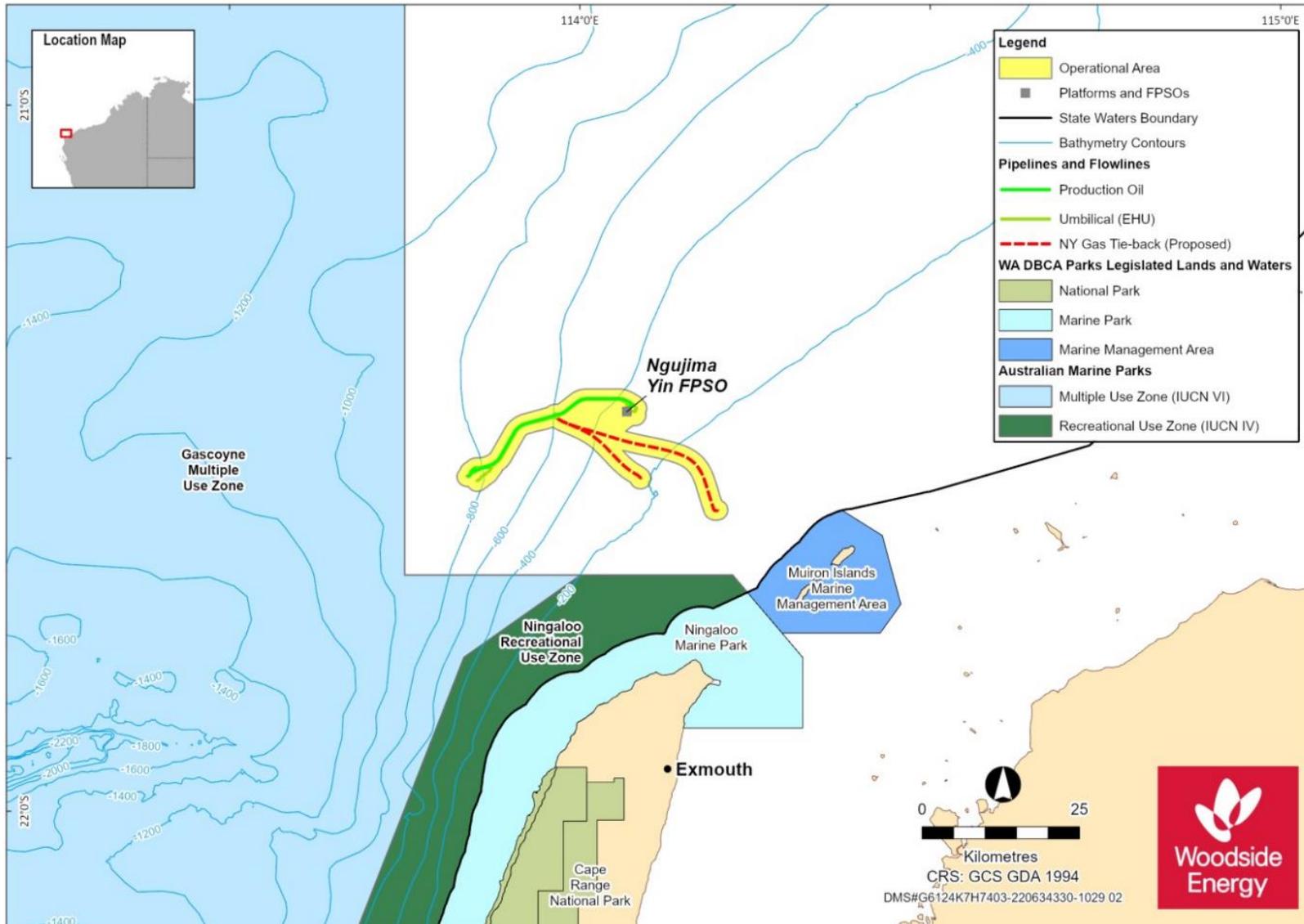


Figure 3-1: Ngujima-Yin Operational Area and regional sensitive receptors

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4. DISPERSANT APPLICATION

Woodside has included surface dispersant spraying as a potential response technique in the instance that operational monitoring observes sufficient oil concentrations for it to be deployed.

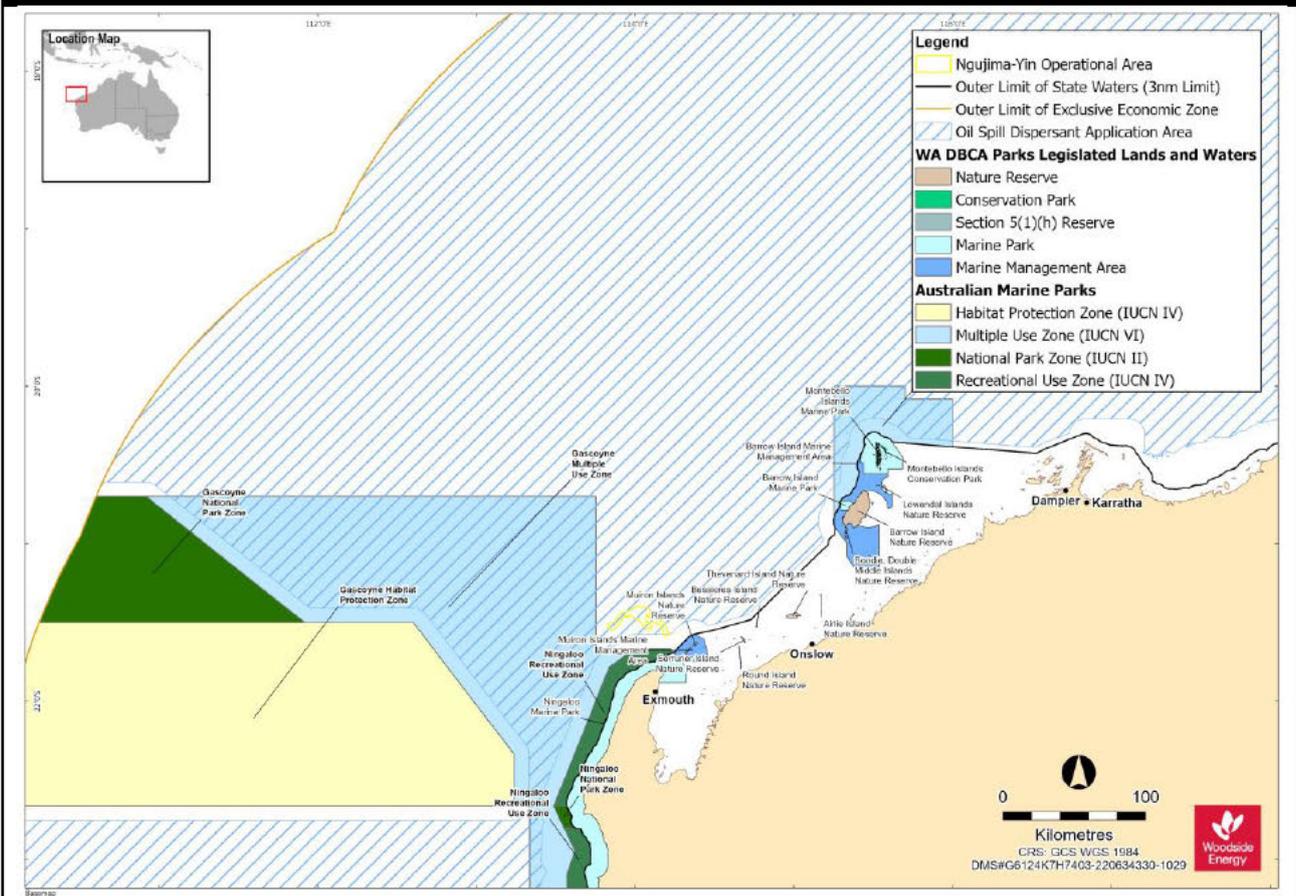
INSTRUCTIONS

DISPERSANTS ARE PRE-APPROVED UNDER THE ENVIRONMENT PLAN FOR USE IN THE BLUE STRIPED ZONE ONLY. OSCA APPROVED OR TRANSITIONAL DISPERSANTS ARE PRE-APPROVED FOR USE.

The shape file for the approved dispersant zone is saved in Woodside’s Geospatial Corporate Geodatabase.

The **SURFACE DISPERSANT OPERATIONAL PLAN** should be used to mobilise dispersant operations immediately - [Surface Dispersants Operational Plan](#).

PRE APPROVED DISPERSANT ZONE



DISPERSANT VOLUMES

Current dispersant volumes available should be checked in the following document:
[Oil Spill Preparedness - Dispersant Stockpiles Database](#)

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APPENDIX A – CREDIBLE SPILL SCENARIOS AND HYDROCARBON INFORMATION

Table A - 1: Credible spill scenario and hydrocarbon information

Scenario	Product	API gravity	Volume	Residue	Weathering rate	
MEE-01 (WCCS) <i>Long-term uncontrolled release of Vincent Crude from the Vincent Infill Well</i>	Vincent Crude	17.3°	258,549 m ³	58.5%	12 hours (BP < 180 °C)	0%
					24 hours (180 °C < BP < 265 °C)	6.3%
					Several days (265 °C < BP < 380 °C)	35.2%
MEE-05 Short-term surface release of NY Topsides Blend cause by a vessel collision with the FPSO	NY Topsides Blend	21.1°	40,828 m ³	30.8%	12 hours (BP < 180 °C)	3.3%
					24 hours (180 °C < BP < 265 °C)	14.8%
					Several days (265 °C < BP < 380 °C)	51.1%

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APPENDIX B – NOTIFICATION FORMS

Table B - 1: Notification forms

No.	Form Name	Link
1	Record of initial verbal notification to NOPSEMA template	■
2	NOPSEMA Incident Report Form	■
3	Marine Pollution Report (POLREP – AMSA)	■
4	AMOSOC Service Contract	■
5	Marine Pollution Report (POLREP – DoT)	■
6a	OSRL Initial Notification Form	■
6b	OSRL Mobilisation Activation Form	■
7	RPS Response Oil Spill Trajectory Modelling Request	■
8	Aerial Surveillance Observer Log	■
9	Tracking buoy deployment instructions	■

FORM 1 – RECORD OF INITIAL VERBAL NOTIFICATION TO NOPSEMA



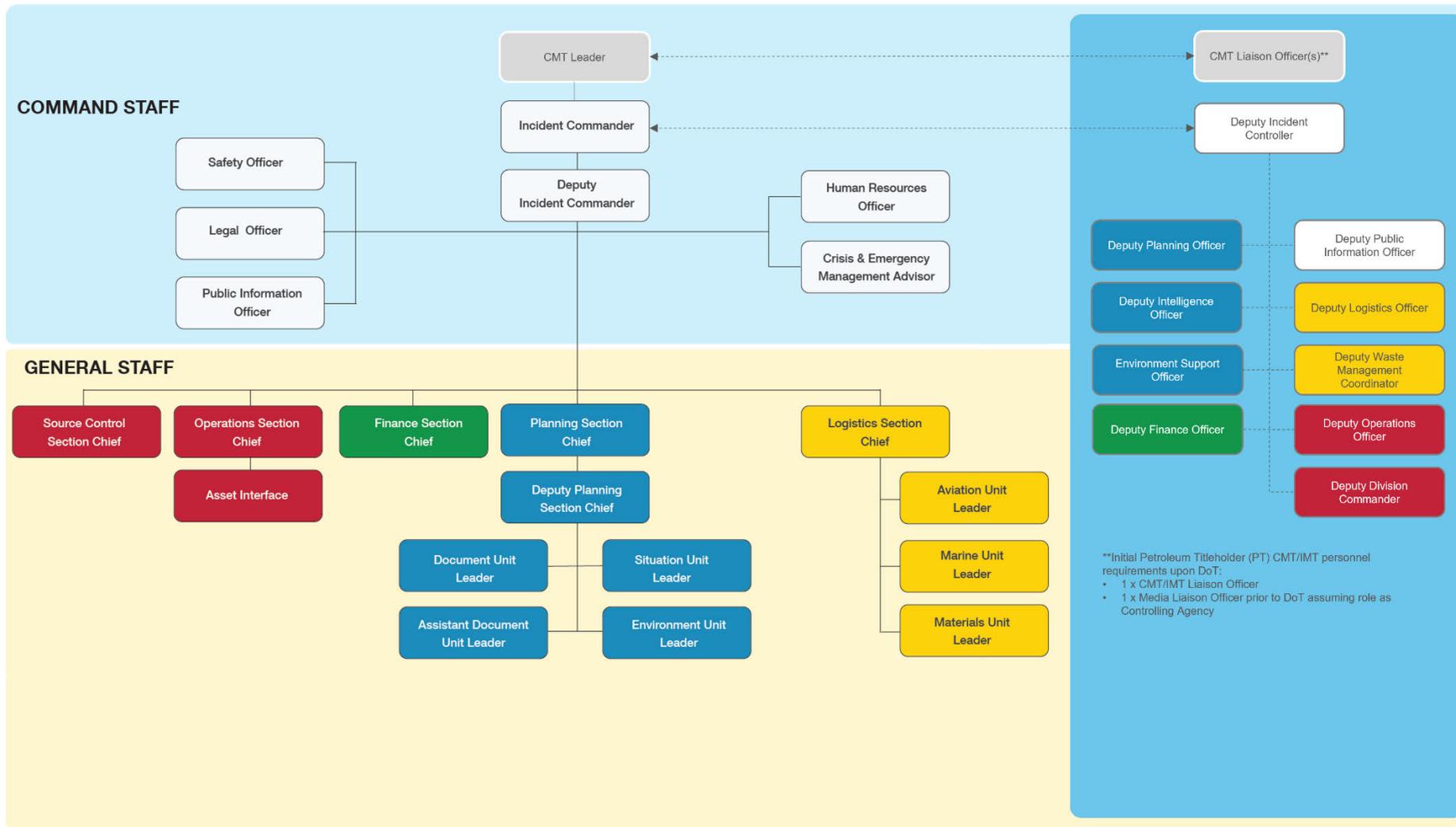
NOPSEMA phone:		
Date of call		
Time of call		
Call made by		
Call made to		
Information to be provided to NOPSEMA:		
Date and time of incident/ time caller became aware of incident		
Details of incident	1. Location	
	2. Title	
	3. Source	<input type="checkbox"/> Platform
		<input type="checkbox"/> Pipeline
		<input type="checkbox"/> FPSO
		<input type="checkbox"/> Exploration drilling
		<input type="checkbox"/> Well
	<input type="checkbox"/> Other (please specify)	
	4. Hydrocarbon type	
5. Estimated volume		
6. Has the discharge ceased?		
7. Fire, explosion or collision?		
8. Environment Plan(s)		
9. Other Details		
Actions taken to avoid or mitigate environmental impacts		
Corrective actions taken or proposed to stop, control or remedy the incident		
After the initial call is made to NOPSEMA, please send this record as soon as practicable to:		
NOPSEMA	██	
NOPTA	████████████████████████████████████	
DEMIRS	██	

APPENDIX C – SPILL ASSESSMENT QUESTIONS

What has happened?		
Date/time		
Spill source		
Spill cause		
Safety situation		
What is it?		
Oil type and name		
Oil properties	Specific gravity	
	Viscosity	
	Pour point	
	Asphaltenes	
	Wax content	
	Boiling point	
Where is it?		
Latitude and longitude		
Distance and bearing		
Affected area	<input type="checkbox"/> Offshore	
	<input type="checkbox"/> Subsea	
	<input type="checkbox"/> Shoreline	
	<input type="checkbox"/> Estuary	
	<input type="checkbox"/> Port	
	<input type="checkbox"/> Harbour	
	<input type="checkbox"/> Inland	
	<input type="checkbox"/> River	
	<input type="checkbox"/> Other (please detail):	
Water depth		
How big is it?		
Area		
Release type	<input type="checkbox"/> Instantaneous	Estimated volume:
	<input type="checkbox"/> Continuous release	Estimated release rate:
Where it is going?		
Metocean conditions		
Currents and tides		
What is in the way?		
Resources at risk		
Time until resource contact		
What's happening to it?		
Weathering processes		
Response actions underway		

APPENDIX E – WOODSIDE INCIDENT MANAGEMENT STRUCTURE

Woodside Incident Management Structure for Hydrocarbon Spill (including Woodside Liaison Officers Command Structure within DoT IMT if required).



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APPENDIX F – WOODSIDE LIAISON OFFICER RESOURCES TO DOT

In the event that DoT is required to establish an IMT, Woodside will make available an appropriate number of appropriately qualified persons to work within the DoT IMT.

It is an expectation that Woodside’s nominated CMT Liaison Officer and the Deputy Incident Controller attend the DoT Fremantle ICC as soon as possible after the formal request has been made by the SMPC, and no later than 8am on the day following the request being formally made. For Woodside personnel designated to serve in DoT’s Forward Operating Base (FOB), it is expected that they arrive at the FOB no later than 24 hours from the formal request being made by the SMPC.

Area	Role	Woodside personnel ³	Key Duties	#
DoT Maritime Environmental Emergency Coordination Centre (MEECC)	CMT Liaison Officer	CIMT Liaison	<ul style="list-style-type: none"> Provide a direct liaison between the CMT and the MEECC. Facilitate effective communications and coordination between the CIMT Leader and State Marine Pollution Coordinator (SMPC). Offer advice to SMPC on matters pertaining to PT crisis management policies and procedures. 	1
DoT IMT Incident Control	Deputy Incident Controller	Deputy Incident Commander (Deputy IC)	<ul style="list-style-type: none"> Provide a direct liaison between the PT IMT and DoT IMT. Facilitate effective communications and coordination between the PT IC and the DoT IC. Offer advice to the DoT IC on matters pertaining to PT incident response policies and procedures. Offer advice to the Safety Coordinator on matters pertaining to PT safety policies and procedures, particularly as they relate to PT employees or contractors operating under the control of the DoT IMT. 	1
DoT IMT Intelligence	Deputy Intelligence Officer	Situation Unit Leader (Intelligence)	<ul style="list-style-type: none"> As part of the Intelligence Team, assist the Intelligence Officer in the performance of their duties in relation to situation and awareness. Facilitate the provision of relevant modelling and predications from the PT IMT. Assist in the interpretation of modelling and predictions originating from the PT IMT. Facilitate the provision of relevant situation and awareness information originating from the DoT IMT to the PT IMT. Facilitate the provision of relevant mapping from the PT IMT. 	1

³ These positions would be mobilised, in consultation with DoT, to align to the actual spill scenario. The selected roles and/or individual personnel would be subject to continued evaluation to ensure continued 'best fit'. For CIMT roster arrangements, contact the WCC. During a prolonged response, additional personnel may be sourced through internal resourcing and mutual Aid agreements such as the AMOSC Core Group via [REDACTED]

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Area	Role	Woodside personnel ³	Key Duties	#
			<ul style="list-style-type: none"> Assist in the interpretation of mapping originating from the PT IMT. Facilitate the provision of relevant mapping originating from the DoT IMT to the PT IMT. 	
DoT IMT Intelligence – Environment	Environment Support Officer	Deputy Environment Unit Leader	<ul style="list-style-type: none"> As part of the Intelligence Team, assist the Environment Coordinator in the performance of their duties in relation to the provision of environmental support into the planning process. Assist in the interpretation of the PT OPEP and relevant TRP plans. Facilitate in requesting, obtaining and interpreting environmental monitoring data originating from the PT IMT. Facilitate the provision of relevant environmental information and advice originating from the DoT IMT to the PT IMT. 	1
DoT IMT Planning-Plans/Resources	Deputy Planning Officer	Deputy Planning Section Chief	<ul style="list-style-type: none"> As part of the Planning Team, assist the Planning Officer in the performance of their duties in relation to the interpretation of existing response plans and the development of incident action plans and related sub plans. Facilitate the provision of relevant IAP and sub plans from the PT IMT. Assist in the interpretation of the PT OPEP from the PT. Assist in the interpretation of the PT IAP and sub plans from the PT IMT. Facilitate the provision of relevant IAP and sub plans originating from the DoT IMT to the PT IMT. Assist in the interpretation of the PT existing resource plans. Facilitate the provision of relevant components of the resource sub plan originating from the DoT IMT to the PT IMT. <p>(Note this individual must have intimate knowledge of the relevant PT OPEP and planning processes)</p>	1
DoT IMT Public Information-Media/Community Engagement	Deputy Public Information Officer	Deputy Public Information Officer	<ul style="list-style-type: none"> As part of the Public Information Team, provide a direct liaison between the PT Media team and DoT IMT Media team. Facilitate effective communications and coordination between the PT and DoT media teams. Assist in the release of joint media statements and conduct of joint media briefings. Assist in the release of joint information and warnings through the DoT Information and Warnings team. 	1

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Area	Role	Woodside personnel ³	Key Duties	#
			<ul style="list-style-type: none"> • Offer advice to the DoT Media Coordinator on matters pertaining to PT media policies and procedures. • Facilitate effective communications and coordination between the PT and DoT Community Liaison teams. • Assist in the conduct of joint community briefings and events. • Offer advice to the DoT Community Liaison Coordinator on matters pertaining to the PT community liaison policies and procedures. • Facilitate the effective transfer of relevant information obtained from through the Contact Centre to the PT IMT. 	
DoT IMT Logistics	Deputy Logistic Officer	Deputy Logistics Section Chief	<ul style="list-style-type: none"> • As part of the Logistics Team, assist the Logistics Officer in the performance of their duties in relation to the provision of supplies to sustain the response effort. • Facilitate the acquisition of appropriate supplies through the PTs existing OSRL, AMOSC and private contract arrangements. • Collects Request Forms from DoT to action via PT IMT. <p>(Note this individual must have intimate knowledge of the relevant PT logistics processes and contracts)</p>	1
DoT IMT Finance-Accounts/ Financial Monitoring	Deputy Finance Officer	Deputy Finance Section Chief	<ul style="list-style-type: none"> • As part of the Finance Team, assist the Finance Officer in the performance of their duties in relation to the setting up and payment of accounts for those services acquired through the PTs existing OSRL, AMOSC and private contract arrangements. • Facilitate the communication of financial monitoring information to the PT to allow them to track the overall cost of the response. • Assist the Finance Officer in the tracking of financial commitments through the response, including the supply contracts commissioned directly by DoT and to be charged back to the PT. 	1
DoT IMT Operations	Deputy Operations Officer	Deputy Operations Section Chief	<ul style="list-style-type: none"> • As part of the Operations Team, assist the Operations Officer in the performance of their duties in relation to the implementation and management of operational activities undertaken to resolve an incident. • Facilitate effective communications and coordination between the PT Operations Section and the DoT Operations Section. • Offer advice to the DoT Operations Officer on matters pertaining to PT incident response procedures and requirements. 	1

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Area	Role	Woodside personnel ³	Key Duties	#
			<ul style="list-style-type: none"> Identify efficiencies and assist to resolve potential conflicts around resource allocation and simultaneous operations of PT and DoT response efforts. 	
DoT IMT Operations – Waste Management	Deputy Waste Management Coordinator	Deputy Waste Coordinator (Materials)	<ul style="list-style-type: none"> As part of the Operations Team, assist the Waste Management Coordinator in the performance of their duties in relation to the provision of the management and disposal of waste collected in State waters. Facilitate the disposal of waste through the PT's existing private contract arrangements related to waste management and in line with legislative and regulatory requirements. Collects Request Forms from DoT to action via PT IMT. 	1
DoT FOB Operations Command	Deputy Division Commander	FOB Deputy Incident Commander	<ul style="list-style-type: none"> As part of the Field Operations Team, assist the Division Commander in the performance of their duties in relation to the oversight and coordination of field operational activities undertaken in line with the IMT Operations Section's direction. Provide a direct liaison between the PT FOB and DoT FOB. Facilitate effective communications and coordination between the PT Division Commander and the DoT Division Commander. Offer advice to the DoT Division Commander on matters pertaining to PT incident response policies and procedures. Assist the Safety Coordinator deployed in the FOB in the performance of their duties, particularly as they relate to PT employees or contractors. Offer advice to the Safety Coordinator deployed in the FOB on matters pertaining to PT safety policies and procedures. 	1
Total				11

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APPENDIX G – DOT LIAISON OFFICER RESOURCES TO WOODSIDE

Once DoT activates a State waters/shorelines IMT, DoT will make available the following roles to Woodside.

Area	Role	Personnel Sourced from:	Key Duties	#
Woodside CIMT	DoT Liaison Officer (prior to DoT assuming Controlling Agency)/ Deputy Incident Controller – State waters (after DoT assumes Controlling Agency)	DoT	<ul style="list-style-type: none"> Facilitate effective communications between DoT’s SMPC/ Incident Controller and the Petroleum Titleholder’s appointed CMT Leader / Incident Controller. Provide enhanced situational awareness to DoT of the incident and the potential impact on State waters. Assist in the provision of support from DoT to the Petroleum Titleholder. Facilitate the provision technical advice from DoT to the Petroleum Titleholder Incident Controller as required. 	1
Woodside CIMT Public Information – Media	DoT Media Liaison Officer	DoT	<ul style="list-style-type: none"> Provide a direct liaison between the PT Media team and DoT IMT Media team. Facilitate effective communications and coordination between the PT and DoT media teams. Assist in the release of joint media statements and conduct of joint media briefings. Assist in the release of joint information and warnings through the DoT Information & Warnings team. Offer advice to the PT Media Coordinator on matters pertaining to DoT and wider Government media policies and procedures. 	1
Total DoT Personnel Initial Requirement to Woodside				2

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APPENDIX J WOODSIDE MASTER EXISTING ENVIRONMENT



Description of the Existing Environment

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1. INTRODUCTION

1.1 Purpose

This document applies, where indicated in the relevant Environment Plan, to Woodside Energy Ltd. (Woodside) activities and operations.

1.2 Scope

This document describes the existing environment within the Woodside areas of activity located in Commonwealth waters off north-western Western Australia (WA), with a focus on the North-west Marine Region (NWMR) (**Figure 1-1**). This document includes details of the particular and relevant values and sensitivities of the environment as required by the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 in order to inform the impact and risk evaluation of Woodside's activities within the NWMR. Furthermore, the key values of the South-west Marine Region (SWMR) and the North Marine Region (NMR) are summarised to encompass areas outside the NWMR. This is with reference to the environment that may be affected (EMBA), as defined and described in individual EPs, for unplanned hydrocarbon spill risks. Additional information appropriate to the nature and scale of the impacts and risks of activities that may interact with the environment will be used to further inform impact and risk assessments and included in the Description of the Existing Environment of individual EPs.

This document is informed by a variety of resources that includes: a search of the Department of Agriculture, Water and the Environment (DAWE) Protected Matters Search Tool (PMST) for the marine bioregions (NWMR, SWMR and NMR) and the three PMST reports provided in **Appendix A**; State (WA)/Commonwealth Marine Park Management Plans, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Species Profile and Threats Database (SPRAT), Part 13 statutory instruments (recovery plans, conservation advices and wildlife conservation plans for listed threatened and migratory species); and peer reviewed scientific publications, as well as Woodside and Joint Venture (JV) funded studies and other titleholder funded study findings available in the public domain.

1.3 Review and Revision

The information presented in this document is reviewed and updated, where relevant, on at least an annual basis to address any relevant changes, which includes but is not limited to the status of EPBC Act listed species, Part 13 Instruments, policies and guidelines and recently published scientific literature.

1.4 Regional Context

Where relevant, the physical, biological and social environments within the areas of interest are discussed with reference to the three marine bioregions of Australia—NWMR, SWMR and NMR (**Table 1-1**). The NWMR is the focal marine bioregion for the Description of the Existing Environment as this is currently the location of most of Woodside's activities.

Table 1-1. Description of the Marine Bioregions

Marine Bioregion	Description
North-west	The NWMR includes all Commonwealth waters (from 3 nautical mile [nm] from the Territorial Sea Baseline [TSB] to the 200 nm Exclusive Economic Zone [EEZ] boundary) extending from the WA/Northern Territory (NT) border to Kalbarri, south of Shark Bay in WA, covering an area of approximately 1.07 million square kilometres and includes extensive areas of shallower waters on the continental shelf, as well as deep areas of abyssal plain where water depths are 5000 m or greater.
South-west	The SWMR comprises Commonwealth waters from the eastern end of Kangaroo Island in SA to Shark Bay in WA. The region spans approximately 1.3 million square kilometres of temperate and subtropical waters and abuts the coastal waters of SA and WA.
North	The NMR comprises Commonwealth waters from west Cape York Peninsula to the NT/WA border). The region covers approximately 625,689 square kilometres of tropical waters in the Gulf of Carpentaria and Arafura and Timor seas, and abuts the coastal waters of Queensland and the NT.

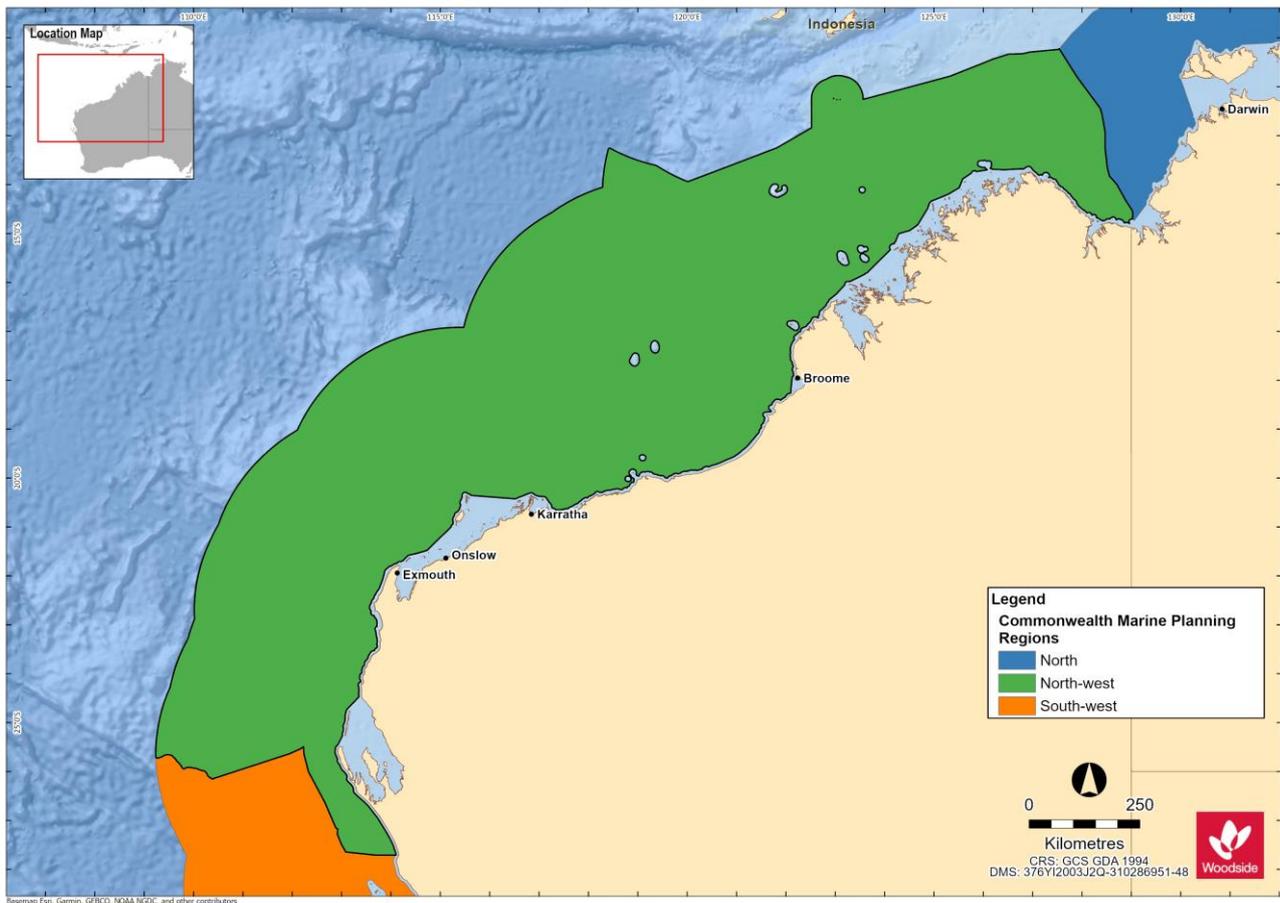


Figure 1-1. Marine Bioregions: North-west (NWMR), South-west (SWMR) and North (NMR)

2. PHYSICAL ENVIRONMENT

2.1 Regional Context

The key physical characteristics of the NWMR, SWMR and NMR are presented in **Table 2-1**.

Table 2-1 Key physical characteristics of the NWMR, SWMR and NMR

Bioregion	Key Characteristics
North-west Marine Region	The NWMR experiences a tropical monsoonal climate towards the northern extent of the region, transitioning to tropical arid and subtropical arid within the central and southern areas of the region (DSEWPAC, 2012a).
	The NWMR is part of the Indo-Australian Basin, the ocean region between the north-west coast of Australia and the Indonesian islands of Java and Sumatra. Dominant currents in the Region include: the South Equatorial Current, the Indonesian Throughflow; the Eastern Gyral Current, and the Leeuwin Current (DEWHA, 2007a).
	The seafloor of the NWMR consists of four general feature types: continental shelf; continental slope; continental rise; and abyssal plain and is distinguished by a range of topographic features including canyons, plateaus, terraces, ridges, reefs, and banks and shoals.
South-west Marine Region	The SWMR contains both subtropical and temperate climates, with overall light climatic cycles.
	The SWMR experiences complex and unusual oceanographic patterns, driven largely by the Leeuwin Current and its associated currents that have a significant influence on biodiversity distribution and abundance.
	The major seafloor features of the SWMR include a narrow continental shelf on the west coast to the waters off south-west WA, and a wide continental shelf dominated by sandy carbonate sediments of marine origin in the Great Australian Bight, the region also contains a steep, muddy continental slope, many canyons and large tracts of abyssal plains (DSEWPAC, 2012b).
North Marine Region	The NMR experiences a tropical monsoonal climate with complex weather cycles, including high temperatures and heavy seasonal yet variable rainfall and cyclones, which can be both destructive (loss of seagrass and mangroves) and constructive (mobilisation of sediment into coastal habitats).
	The NMR comprises Commonwealth waters from west Cape York Peninsula to the NT-WA border, covering tropical waters in the Gulf of Carpentaria and Arafura and Timor seas. Currents in the NMR are driven largely by strong winds and tides, with only minor influences from oceanographic currents such as the Indonesian Throughflow and the South Equatorial Current (DSEWPAC, 2012c).
	The seafloor of the NMR consists mainly of a wide continental shelf, as well as other geomorphological features such as shoals, banks, terraces, valleys, shallow canyons and limestone pinnacles.

2.2 Marine Systems of the North-west Marine Region.

The NWMR can be divided into three large scale ecological marine systems on the basis of the influence of major ocean currents, seafloor features and eco-physical processes (e.g. climate, tides, freshwater inflow) upon the Region (DSEWPAC, 2012a). The three large scale marine systems approximate the Woodside activity areas within the NWMR (**Figure 2-1**). The key characteristics of each marine system are outlined below in **Table 2-2**.

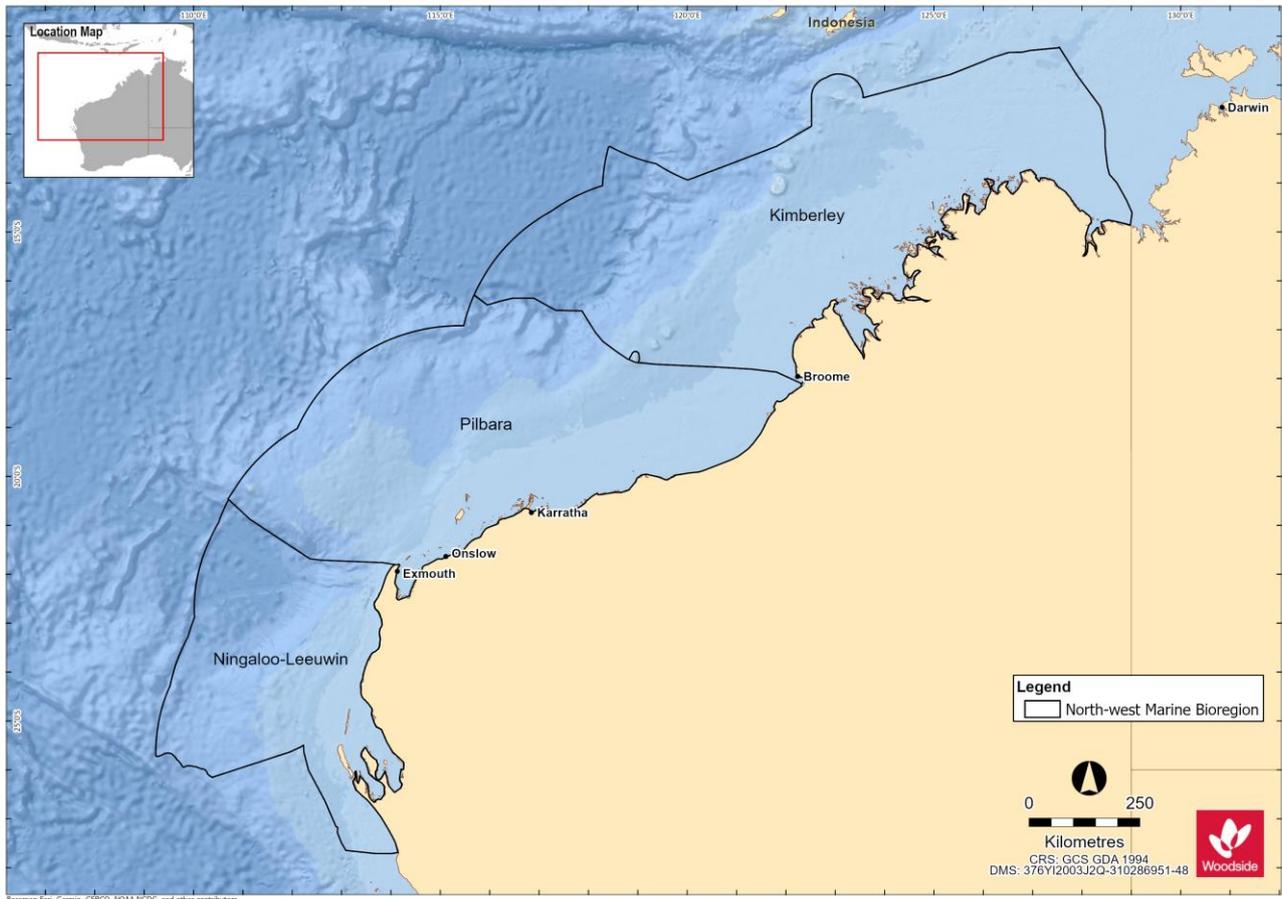


Figure 2-1. The marine systems of the North-west Marine Region (NWMR)

Table 2-2. Key characteristics of the Marine Systems of the NWMR

Note: Woodside areas align with the marine systems as described in DEWHA (2007a)

Marine System	Woodside Activity Area	Key Characteristics
Kimberley	Browse	Tropical monsoonal climate Strong influence from Indonesian Throughflow Predominantly tropical Indo-Pacific species Subject to episodic offshore cyclonic activity, rarely crossing the coast Large tidal regimes Freshwater input from terrestrial monsoonal run-off Turbid coastal waters (i.e. light limited systems) Dominated by shelf environments Predominantly hard substrates in inner to mid-shelf environments Includes a number of shelf-edge atolls (i.e. Scott Reef, Rowley Shoals)
Pilbara	North-west Shelf (NWS) / Scarborough	Tropical arid climate Transition between Indonesian Throughflow and Leeuwin Current dominated areas Predominantly tropical species High cyclone activity with frequent crossing of the coast Transitional tidal zone Internal tide activity Large areas of shelf and slope Dry coast with ephemeral freshwater inputs
Ningaloo-Leeuwin	North-west Cape	Subtropical arid climate Leeuwin Current consolidates Transitional tropical/temperate faunal area Higher water clarity in near-shore and offshore environments Narrow shelf and slope Marginal tidal range Seasonal wind forcing more dominant influence on marine environment

2.3 Meteorology and Oceanography

This section describes the general meteorological conditions and oceanography for the NWMR and provides further detail for the three Woodside activity areas. The NWMR is influenced by a complex system of ocean currents that change between seasons and between years, which generally result in its surface waters being warm and nutrient-poor, and of low salinity (DEWHA, 2007a). The mix of bathymetric features, complex topography and oceanography across the whole north-west marine environment has created and supports a globally important marine biodiversity hotspot (Wilson, 2013).

Table 2-3 NWMR climate and oceanography summary

Receptor	Description
Meteorology	
Seasonal patterns	The NWMR associated land mass of the Australian continent is characterised as a hot and humid summer climate zone. The broader NWMR experiences variations of a tropical or monsoon climate. In the far north-west (Kimberley), there is a hot summer season from December to March and a milder winter season between April and November. The Pilbara area is described as having a tropical arid climate with high cyclone activity (DEWHA, 2007a). The Pilbara and North-west Cape has a hot summer season from October to April and a milder winter season between May and September with transition periods between the summer and winter regimes.
Air temperature and rainfall	In summer (between September and March), maximum daily temperatures range from 31°C to 33°C. During winter (May to July), mean daily temperatures range from 18°C to 31°C (BOM ¹), refer to Figure 2-2a and b . Rainfall in the region typically occurs during the summer, with highest falls observed late in the season. This is often associated with the passage of tropical low-pressure systems and cyclones.
Wind	Wind patterns in north-west WA are dictated by the seasonal movement of atmospheric pressure systems. During summer, high-pressure cells produce prevailing winds from the north-west and south-west, which vary between 10 and 13 ms ⁻¹ . During winter, high-pressure cells over central Australia produce north-easterly to south-easterly winds with average speeds of between 6 and 8 ms ⁻¹ . Refer to Figure 2-3a and b .
Tropical cyclones	The NWS and Pilbara coast (within the NWMR) experiences more cyclonic activity than any other region of the Australian mainland coast (BOM, 2021a). Tropical cyclone activity typically occurs between November and April and is most frequent in the region during December to March (i.e. considered the peak period), with an average of about one cyclone per month (BOM, 2021a). Refer to Figure 2-4 .
Oceanography	
Ocean temperature	Waters in NWMR are tropical year-round, with sea surface temperature in open shelf waters reaching ~26°C in summer and dropping to ~22°C in winter. Nearshore temperatures (as recorded for the NWS area) fluctuate more widely on an annual basis from ~17°C in winter to ~31°C in summer (Chevron Australia, 2010). Refer to Figure 2-5a and b .
Currents	The major surface currents influencing north-west WA flow towards the poles and include the Indonesian Throughflow, the Leeuwin Current, the South Equatorial Current, and the Eastern Gyral Current. The Ningaloo Current, the Holloway Current, the Shark Bay Outflow, and the Capes Current are seasonal surface currents in the region. Below these surface currents are several subsurface currents, the most important of which are the Leeuwin Undercurrent and the West Australian Current. These subsurface currents flow towards the equator in the opposite direction to surface currents (DEWHA, 2007a). Refer to Figure 2-6 . The offshore waters of the NWMR are characterised by surface and subsurface boundary currents that flow along the continental shelf/slope and are enhanced through inflows from the ocean basins and are an important conduit for the poleward heat and mass transport along the west coast (Wijeratne <i>et al.</i> , 2018). Local physical oceanography is strongly influenced by the large-scale water movements of the Indonesian Throughflow (Liu <i>et al.</i> 2015; Sutton <i>et al.</i> 2019). Typically, a warm and well-mixed oligotrophic surface layer and a cooler and more nutrient rich, deeper water layer (Menezes <i>et al.</i> 2013).
Waves	Sea surface waves within the NWMR, generally reflect the direction of the synoptic winds and flow predominately from the south-west in the summer and east in winter (Pearce <i>et al.</i> , 2003). The NWS within the NWMR is a known area of internal wave generation. Both internal tides and internal waves are thought to be more prevalent during summer months due to the increased stratification of the water column (DEWHA, 2007a). Along the continental slope of the NWMR, strong internal waves and interaction between semi-diurnal tidal currents and seabed topographic features facilitates upwelling events and localised productivity events (Holloway, 2001).
Tides	Tides on the NWS (NWMR) increase as the water moves from deep towards the shallower coast. The highest offshore tides are experienced at the border of the Browse and Canning basins. The smallest tides are experienced at the Exmouth Plateau, near the coast. Tides of NWS (NWMR) are predominantly semi-diurnal (two highs and two lows each day), but with increasing importance of the diurnal (once per day) inequality at the southern and northern extremities of the NWS.

¹ http://www.bom.gov.au/jsp/ncc/climate_averages/temperature/index.jsp, accessed 21 January 2021.

Receptor	Description
	The tide range—represented by the Mean Spring Range (MSR)—increases northwards along the coast from 1.4 m at North-west Cape (Point Murat) to 7.7 m at Broome, before decreasing again (apart from local amplification in King Sound and Collier Bay) to about 5 m off Cape Londonderry. The MSR then increases again through Joseph Bonaparte Gulf and on up 5.5 m at Darwin (RPS, 2016).

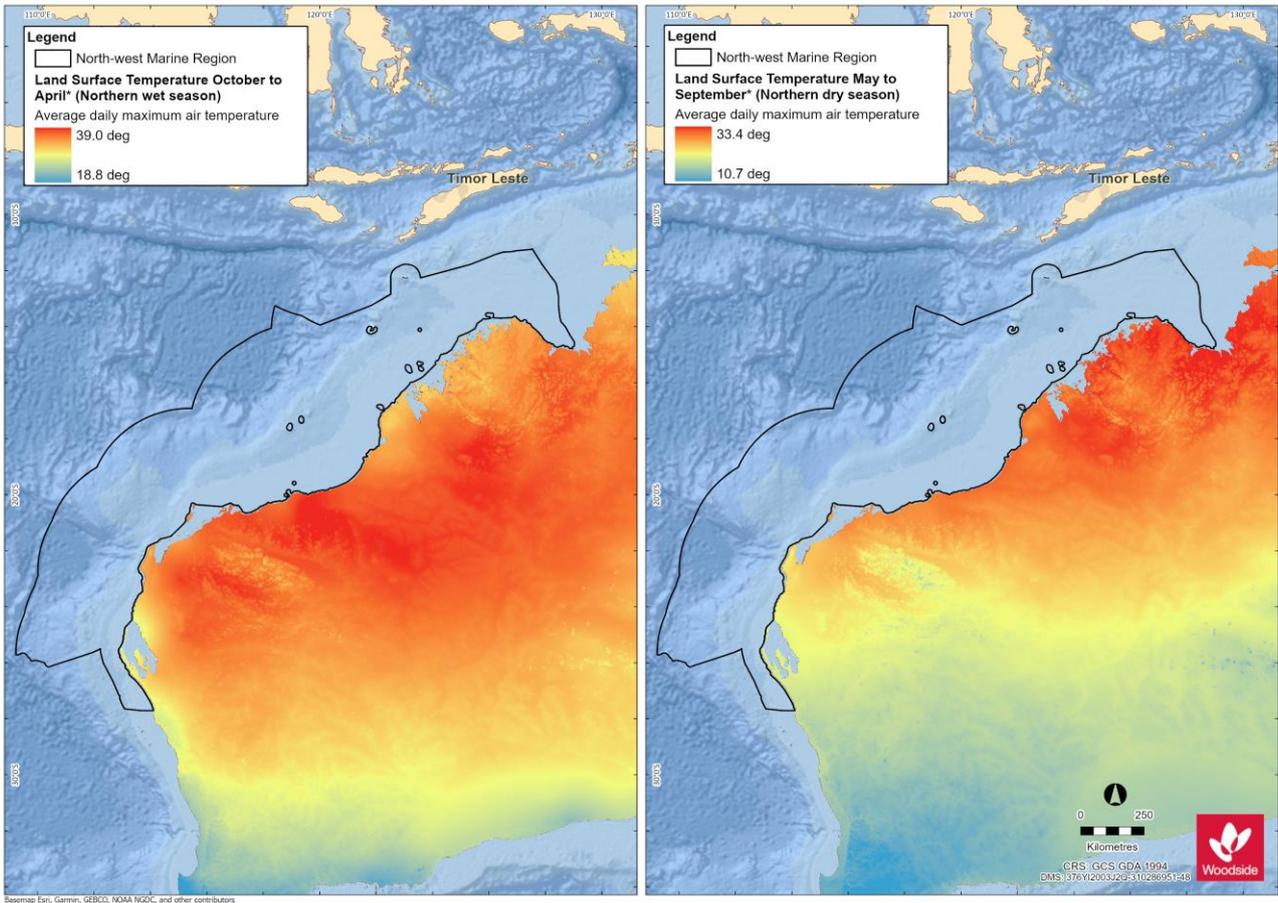


Figure 2-2. Average daily maximum air temperature for land surface adjacent to NWMR: (a) summer (northern wet season) and (b) winter (northern dry season)

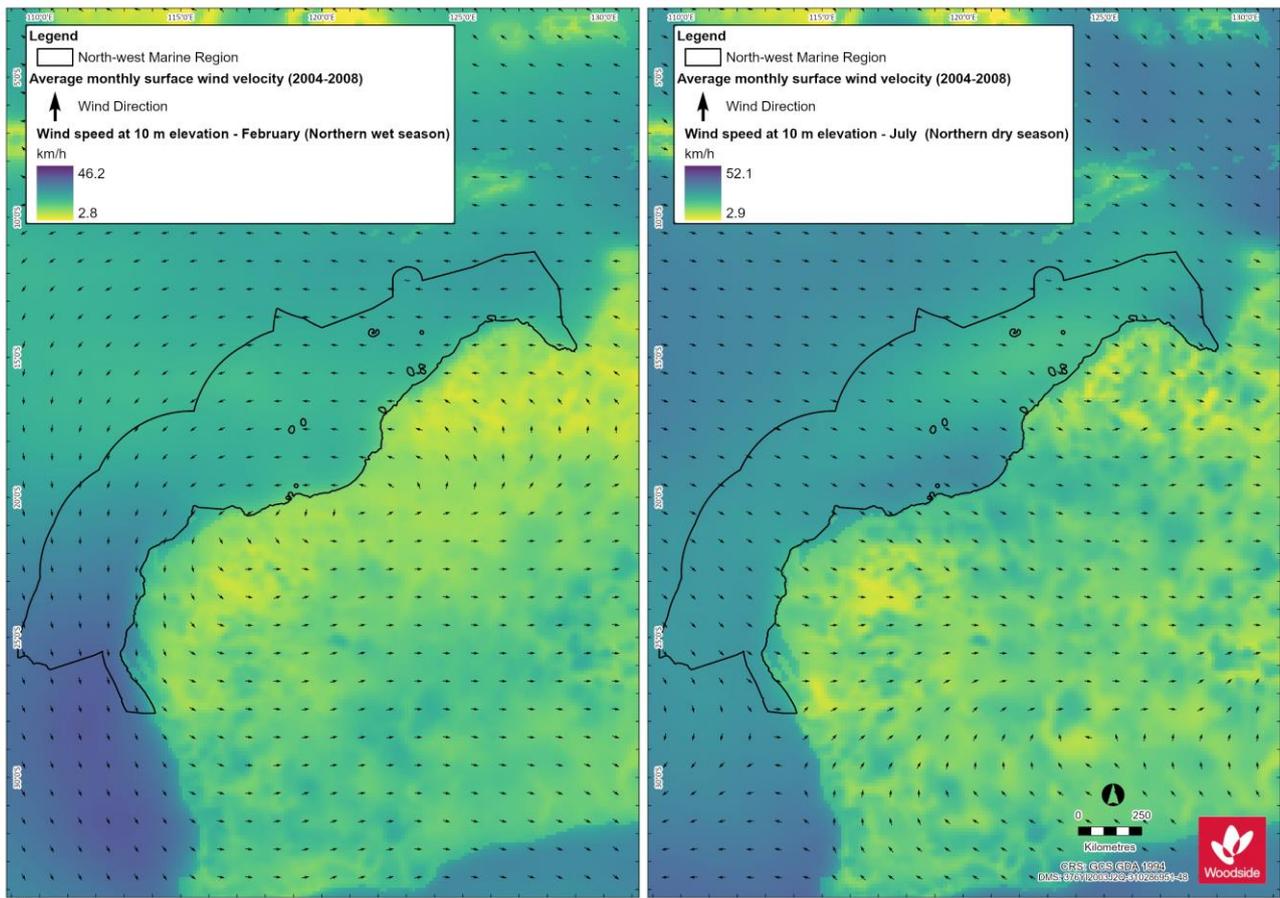


Figure 2-3. Average monthly surface wind direction and velocity for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

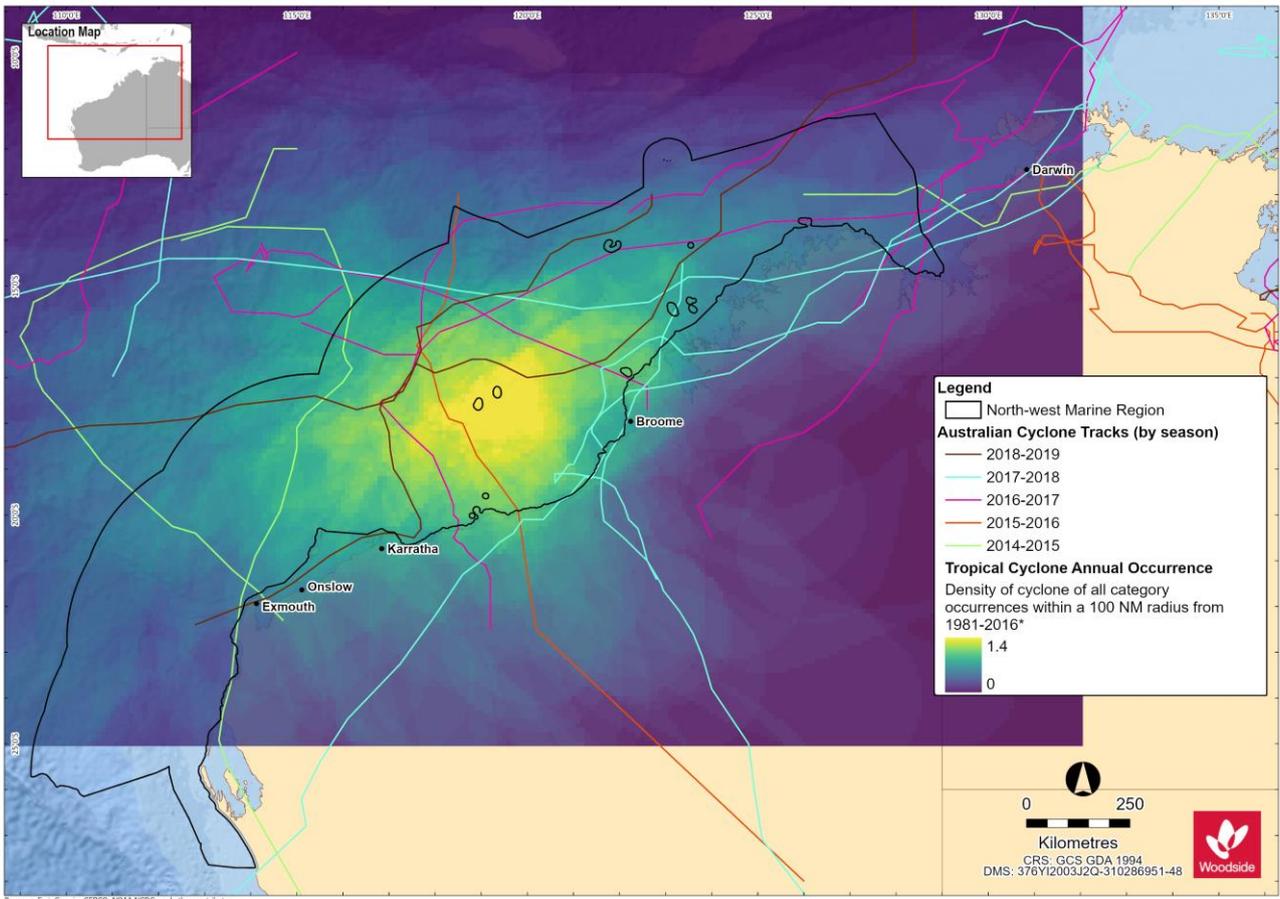


Figure 2-4. Tropical cyclone annual occurrence and cyclone tracks for NWMR

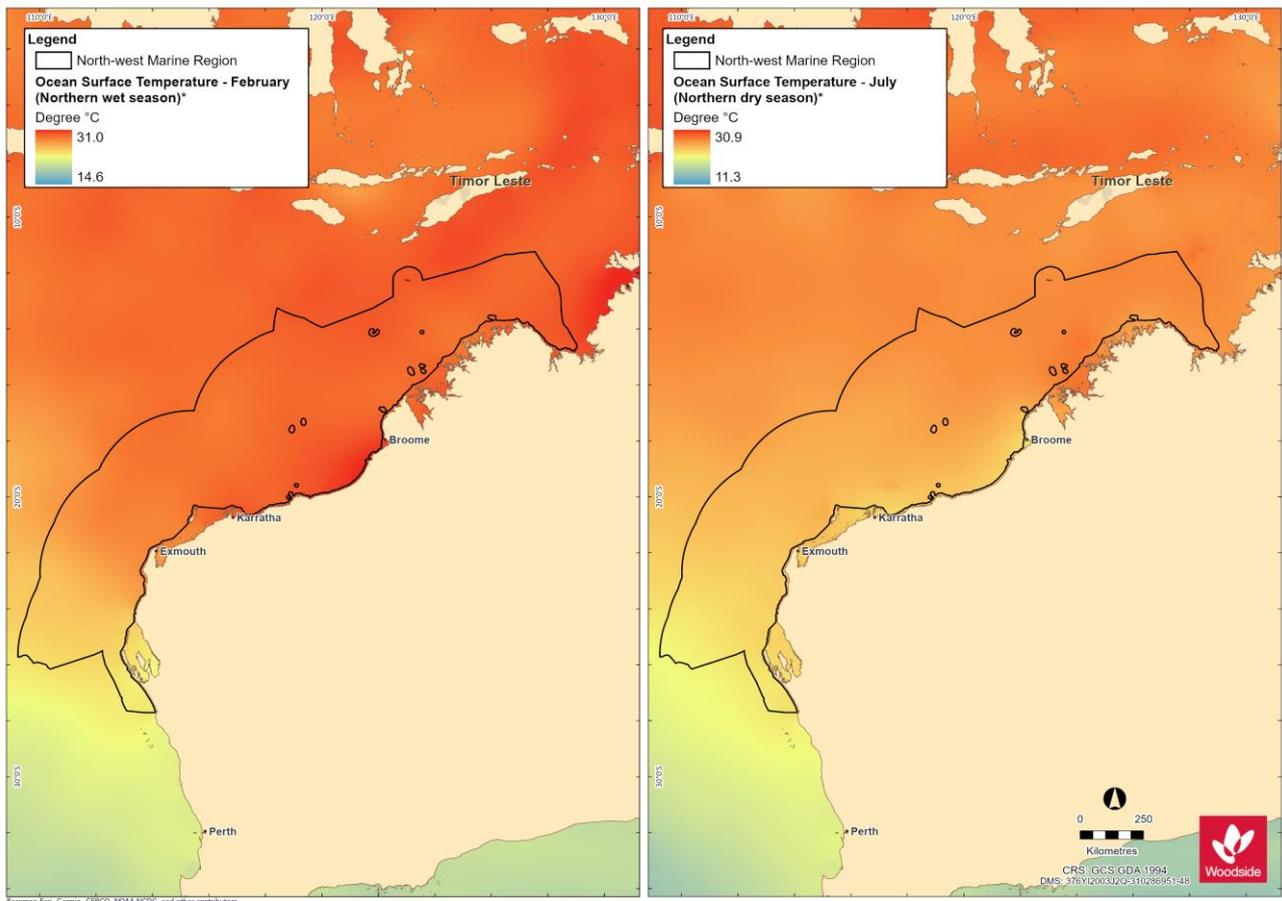


Figure 2-5. Ocean surface temperature for NWMR: (a) summer (February, northern wet season) and (b) winter (July, northern dry season)

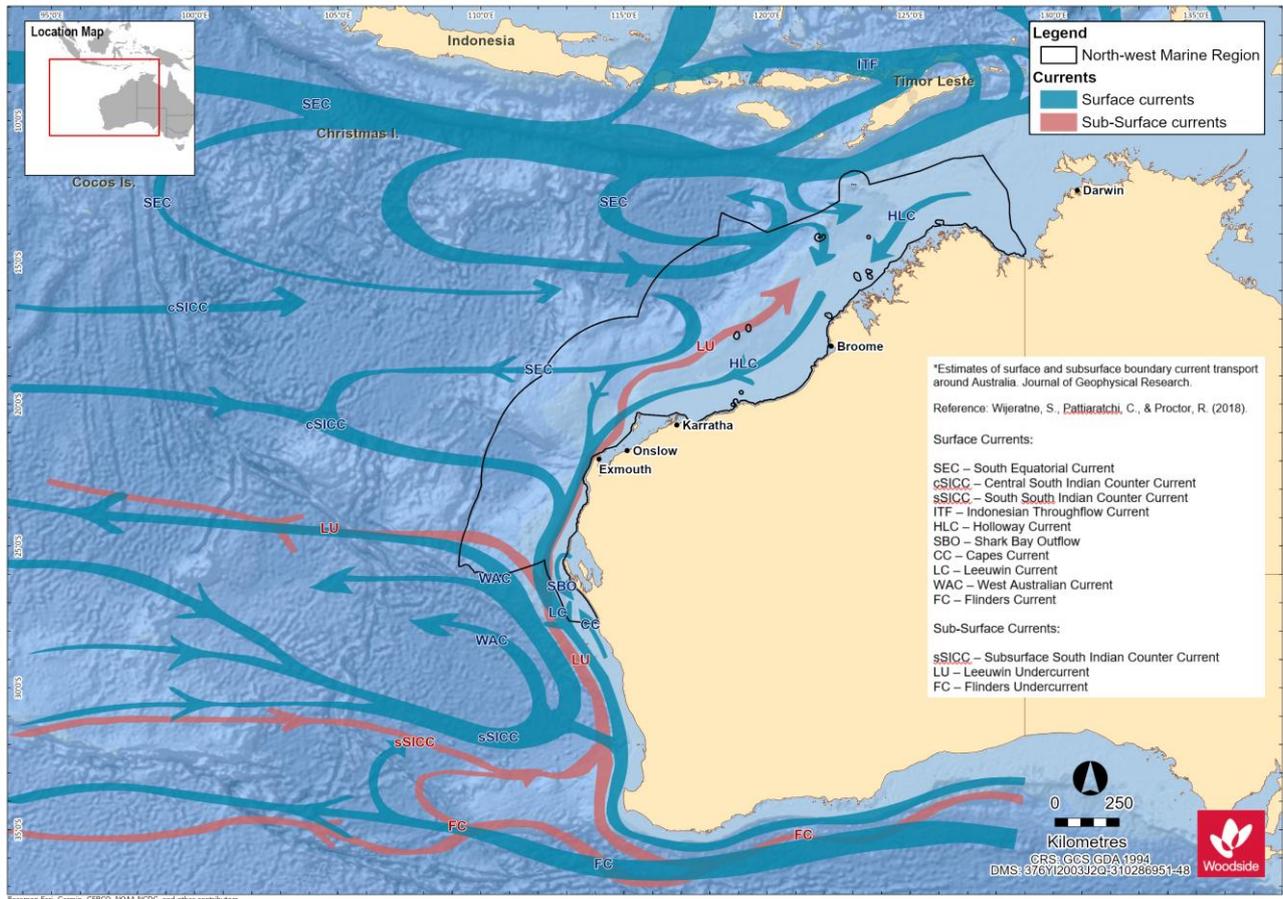


Figure 2-6. Ocean surface and sub-surface currents of the NWMR and wider region

2.3.1 Browse

Table 2-4 Summary meteorology and oceanography for Browse (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The Browse area overlapping the Kimberley marine system experiences tropical monsoon climate with two distinct seasons: the wet season from December to March and dry season from April to November.
Air temperature	The mean annual air temperature recorded at Troughton Island between 2010 and 2020 ranged from 30.1°C in 2011 to 32.6°C in 2016 and highest mean monthly air temperatures were recorded for the months of November and December (BOM, 2021b).
Rainfall	Rainfall recorded from Troughton Island in the Browse basin ranged from barely detectable (<1 mm) mean monthly level to >100 mm in December to March, with the highest rainfall recorded for January. Reflecting the wet monsoon season of the Kimberley marine system (BOM, 2021c).
Wind	The dry season experiences high pressure systems that bring east to south-easterly winds with average wind speeds during the season of approximately 16.6 km/hr and maximum wind gusts of 65 km/hr. In contrast the wet season brings predominately westerly winds with average wind speeds approximately 17 km/hr and maximum gusts exceeding 100 km/hr (generally associated with tropical cyclones (MetOcean Engineers, 2005).
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2019). This is consistent with the stronger Leeuwin Current flow during winter months, with more variable currents driven by local wind stress during periods of weaker Leeuwin Current flow.

2.3.2 North West Shelf / Scarborough

Table 2-5 Summary meteorology and oceanography for the North West Shelf and Scarborough (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The NWS and Scarborough areas experience the monsoonal climate of the wider NWMR with a distinct wet and dry seasonal regime and transitions periods between seasons.
Air temperature	Air temperatures as measured at the North Rankin A platform on NWS ranged from a maximum average of 39.5°C in summer to a minimum average temperature of 15.6°C in winter (Woodside, 2012).
Rainfall	Rainfall patterns annually reveal the wet season with highest rainfalls during the late summer, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall in the dry season is typically extremely low. (Pearce <i>et al.</i> 2003).
Wind	Winds are typically from the southwest during the wet season (summer) and tending from the south-east during the dry season (winter). The summer south-westerly winds are driven by high pressure cells that pass from west to east over the Australian continent. During the winter period, the relative position of the high-pressure cells shifts further north, leading to prevailing south-easterly winds from the mainland (Pearce <i>et al.</i> 2003).
Oceanography	
Currents	The large-scale ocean currents of the NWMR, primarily the Indonesian Throughflow and Leeuwin Current (and Holloway Current), are the primary influence on the NWS and Scarborough areas. The ITF and Leeuwin Current are strongest during the late summer and winter and flow reversals to the north-east, typically short-lived and weak, when there are strong south-westerly winds can generate localised upwelling on the shelf edge (Holloway and Nye, 1985; James <i>et al.</i> 2004 and Condie <i>et al.</i> 2006).

2.3.3 North-west Cape

Table 2-6 Summary meteorology and oceanography for the North-west Cape (refer to Appendix B for supporting metocean figures)

Receptor	Description
Meteorology	
Seasonal patterns	The climate of the NWMR is dry tropical exhibiting a hot summer season and a mild winter season. There are often distinct transition periods between the summer and winter regimes, characterised by periods of relatively low winds.
Air temperature	Air temperatures in the North-west Cape area range from high summer temperatures (maximum average of 37.5°C) and mild winter temperatures (minimum average of 12.2°C).
Rainfall	Rainfall typically occurs during the summer, with highest rainfall during later summer and autumn, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall is typically low in winter.
Wind	Winds vary seasonally, generally from the south-west quadrant during summer months and the south, south-east quadrant during the autumn and winter months. The summer south-westerly winds are driven by high pressure cells that pass from west to east over the Australian continent. Winds typically weaken and are more variable during the transitional period between the summer and winter seasons, generally between April to August.
Oceanography	
Currents	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2016). This is consistent with the stronger Leeuwin Current flow during winter months, with more variable currents driven by local wind stress during periods of weaker Leeuwin Current flow.

2.4 Physical Environment of NWMR

Based on the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Version 4.0, there are eight provincial bioregions that occur within the NWMR, which are based on patterns of demersal fish diversity, benthic habitat and oceanographic data (Commonwealth of Australia, 2006), **Figure 2-7**. Of the eight provincial bioregions that occur within the NWMR, these include four offshore (~65% of total NWMR area) and four shelf (~35% of total NWMR area) bioregions (Baker *et al.*, 2008).

The NWMR is a tropical carbonate margin that comprises an extensive area of shelf, slope and abyssal plain/deep ocean floor, as well as complex areas of bathymetry such as plateau, terraces and major canyons (Harris *et al.*, 2005). A series of reefs are located on the outer shelf/slope of the NWMR, including Ashmore, Cartier, Scott and Seringapatam reefs (Baker *et al.*, 2008). The distribution of seafloor geomorphic features has been systematically mapped over much of the Australian margin and adjacent seafloor. The mapped area can be divided into 10 geomorphic regions, of which the NWMR overlays two; the Western Margin and Northern Margin (Harris *et al.*, 2005). Most of the region consists of either continental slope (61%) or continental shelf (28%) (DEWHA, 2007a) with more than 40% of the NWMR having a water depth less than 200 m. The shallow shelf is contrasted by features such as the Cuvier and Argo abyssal plains, which reach depths more than five kilometres. A unique feature of the region is the significant narrowing of the continental shelf around North-west Cape (approximately 7 km wide) from the broad continental shelf in the north of the region (approximately 400 km wide at Joseph Bonaparte Gulf) (DEWHA, 2007a), **Figure 2-8**.

The geological history of the region, as well as its geomorphology and oceanography, has influenced the composition and distribution of sediments (DEWHA, 2007a). The sedimentology of the NWMR is dominated by marine carbonates, which show a broad zoning and fining with water depth. Main trends of the NWMR sediments include a tropical carbonate shelf that is dominated by sand and gravel, an outer shelf/slope zone that is dominated by mud and a relatively homogenous rise and abyssal plain/deep ocean floor that is dominated by non-carbonate mud (Baker *et al.*, 2008), **Figure 2-9**.

The distribution and resuspension of sediments on the inner shelf is strongly influenced by the strength of tides across the continental shelf as well as episodic events such as cyclones. Further offshore, on the mid to outer shelf and on the slope itself, sediment movement is primarily influenced by ocean currents and internal tides (DEWHA, 2007a).

This variation in bathymetry and interactions with oceanographic processes provides a diversity of habitats to marine fauna and flora within the NWMR.

2.5 Air quality

The ambient air quality of all three marine regions is largely unpolluted due to the extent of the open ocean area, the activities currently carried out in each and the relative remoteness of each region.

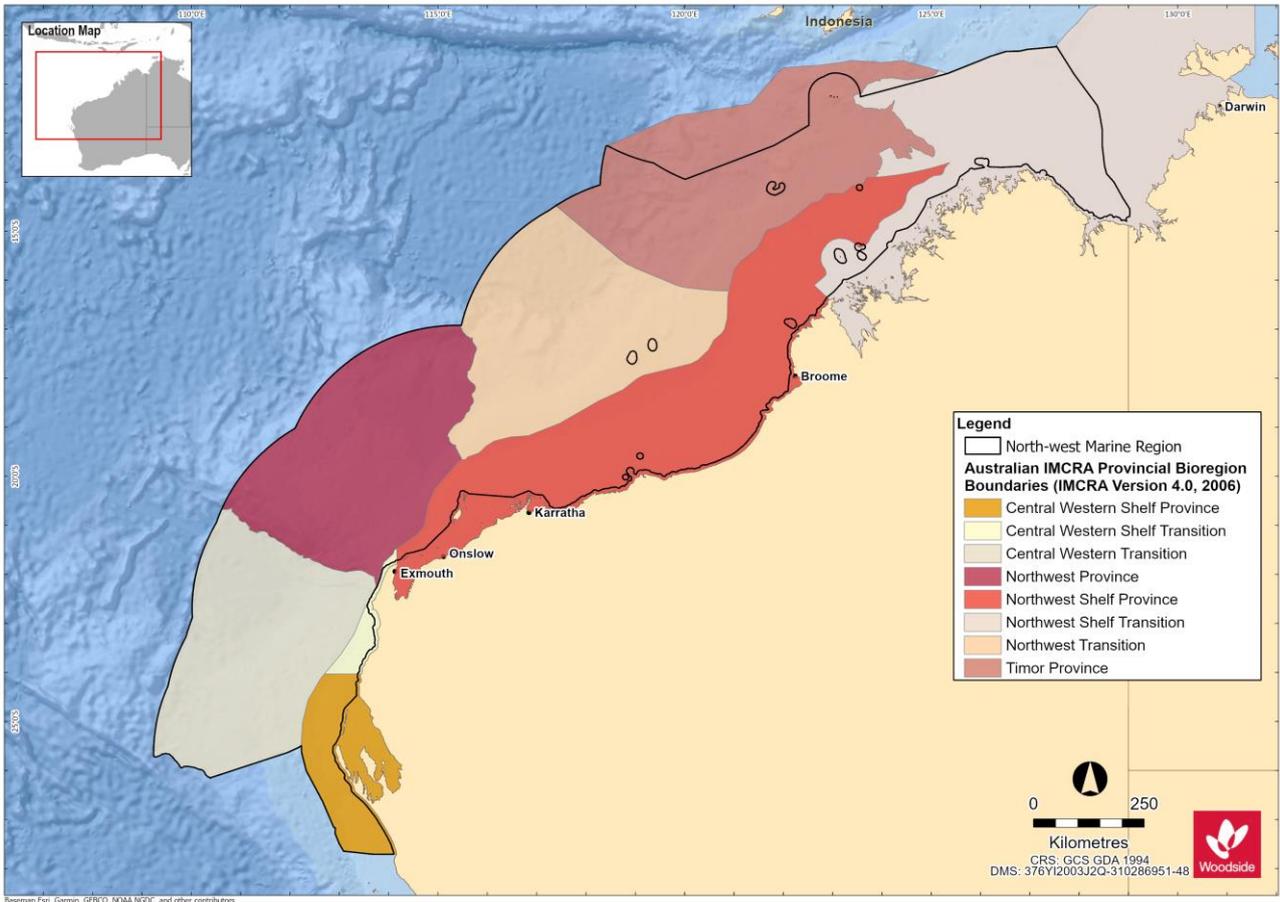


Figure 2-7. The eight provincial bioregions of the NWMR (Commonwealth of Australia, 2006)

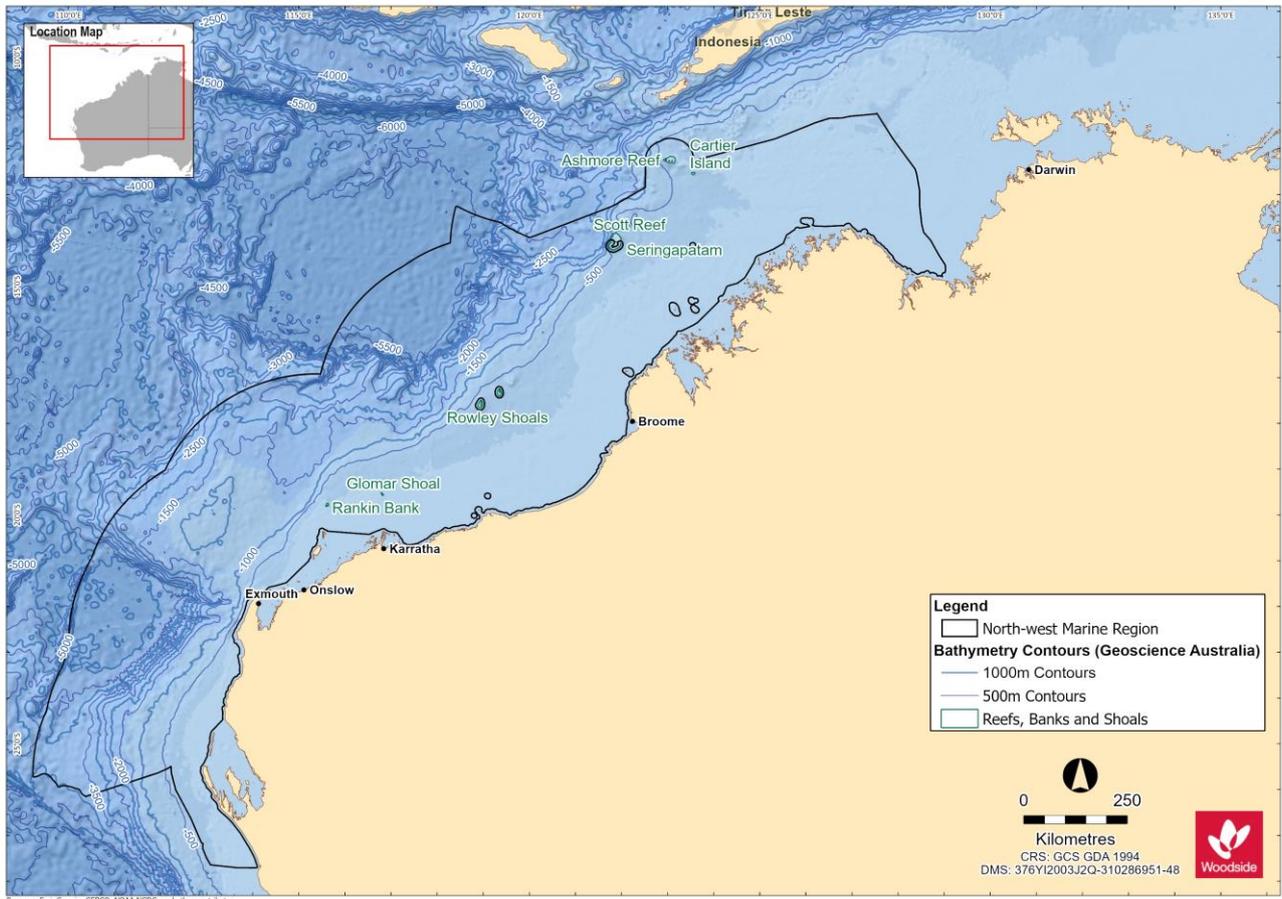


Figure 2-8. Bathymetry of the NWMR

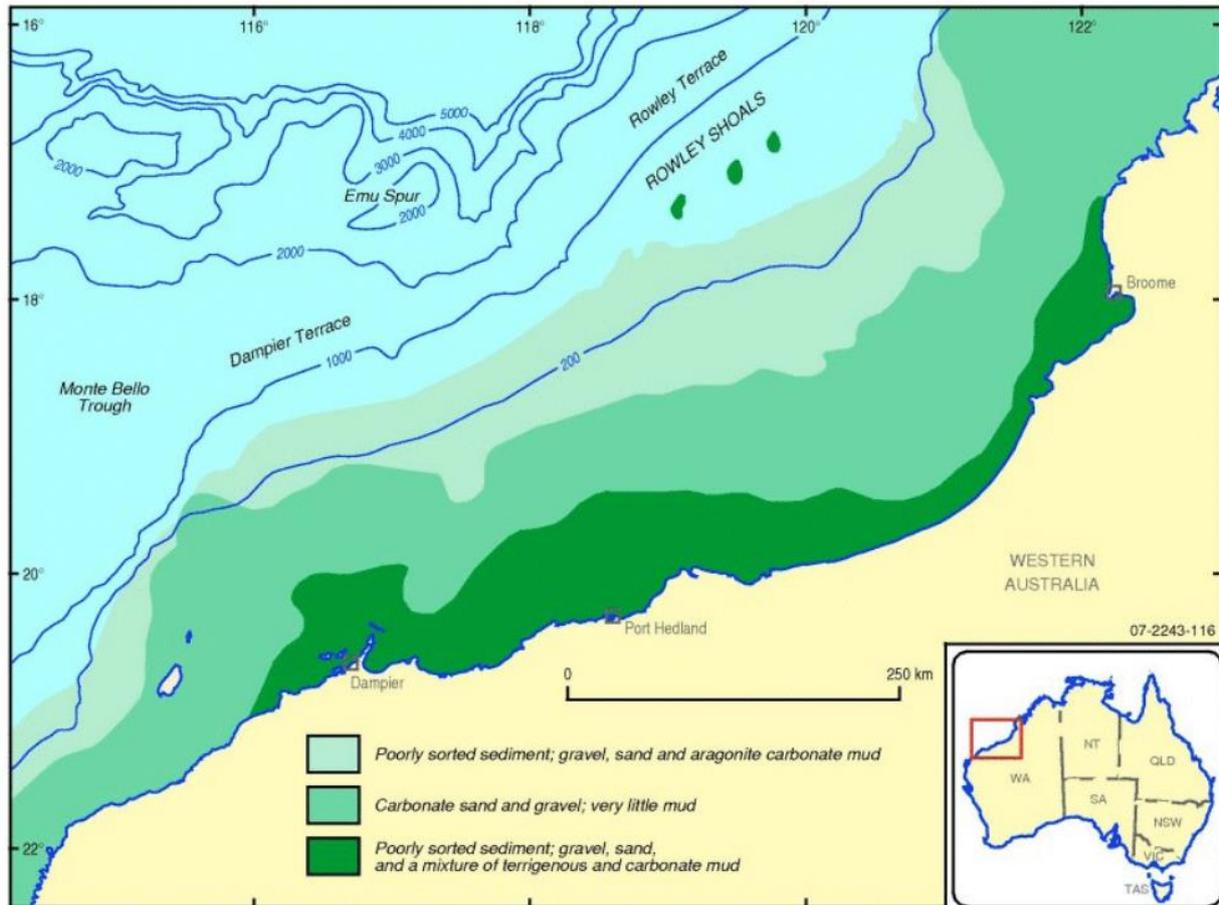


Figure 2-9. Overview of the seabed sediments of the NWMR (Baker *et al.*, 2008)

3. MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE (EPBC ACT)

3.1 Summary of Matters of National Environmental Significance (MNES)

This section summarises the matters of national environmental significance (MNES) reported for the three bioregions; NWMR (**Table 3-1**), SWMR (**Table 3-2**) and NMR (**Table 3-3**), based on the Protected Matters search reports (**Appendix A**).

Additional information on these MNES are provided in subsequent sections (referenced below).

Table 3-1 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the NWMR

MNES	Number	Description	Section of this Document
World Heritage Properties	2	Shark Bay The Ningaloo Coast	Section 10
National Heritage Places	5	Shark Bay The Ningaloo Coast The West Kimberley The Dampier Archipelago (including Burrup Peninsula) Dirk Hartog Landing Site 1616	Section 10
Wetlands of International Importance (Ramsar)	3	Ashmore Reef National Nature Reserve Eighty Mile Beach Roebuck Bay ¹	Section 10
Commonwealth Marine Area	2	EEZ and Territorial Sea Key Ecological Features (KEFs) Australian Marine Parks (AMPs) Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	1	Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Terrestrial community and not considered further
Listed Threatened Species	70	Refer NWMR PMST report (Appendix A)	Section 5 – Section 8
Listed Migratory Species	84	Refer NWMR PMST report (Appendix A)	Section 5 – Section 8

¹ Roebuck Bay is a designated Wetland of International Importance (Ramsar site), which was not included in the PMST Report (**Appendix A**).

Table 3-2 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the SWMR

MNES	Number	Description	Section of this Document
World Heritage Properties	0	N/A	N/A
National Heritage Places	3	Cheetup Rock Shelter Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos HMAS Sydney II and HSK Kormoran Shipwreck Sites	Section 10
Wetlands of International Importance (Ramsar)	4	Becher Point Wetlands Forrestdale and Thomsons Lakes Peel-Yalgorup System Vasse-Wonnerup System	Section 10
Commonwealth Marine Area	2	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	3	Banksia Woodlands of the Swan Coastal Plain ecological community Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia Tuart (<i>Eucalyptus gomphocephala</i>) Woodlands and Forests of the Swan Coastal Plain ecological community	Terrestrial communities and not considered further
Listed Threatened Species	65	Refer SWMR PMST report (Appendix A)	N/A
Listed Migratory Species	67	Refer SWMR PMST report (Appendix A)	N/A

Table 3-3 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the NMR

MNES	Number	Description	Section of this Document
World Heritage Properties	0	N/A	N/A
National Heritage Places	0	N/A	N/A
Wetlands of International Importance (Ramsar)	0	N/A	N/A
Commonwealth Marine Area	2	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 9 Section 10
Listed Threatened Ecological Communities	0	N/A	N/A
Listed Threatened Species	33	Refer NMR PMST report (Appendix A)	N/A
Listed Migratory Species	70	Refer NMR PMST report (Appendix A)	N/A

3.2 Part 13 Statutory Instruments for EPBC Act Listed Threatened and Migratory Species in the NWMR, SWMR and NMR

A screening process was conducted to identify which EPBC Act listed threatened and migratory species, and associated Part 13 statutory instruments, are relevant in the context of the assessment of impacts and risks associated with petroleum activities in each of the Woodside activity areas, using the following criteria:

- overlap between the Woodside activity areas with habitat critical for the survival of marine turtles, and with BIAs (overlapping the marine environment) for any listed threatened species as reported in the PMST searches;
- published literature, unpublished reports and/or credible anecdotal information (e.g. feedback from stakeholders) indicating species presence/occurrence within the Woodside activity areas;
- temporal overlap between the likely timing of petroleum activities and peak periods for key behaviours (e.g. breeding, nesting, calving, resting, foraging, migration); and
- environmental aspects associated with petroleum activities have been identified as a key threat to a species in a Part 13 statutory instrument (e.g. anthropogenic noise, light emissions, marine debris).

Relevant EPBC Act threatened and migratory species and their Part 13 statutory instruments are listed in **Table 3-4**. For the full list of EPBC Act listed species for each marine bioregion refer to the PMST reports (**Appendix A**).

Table 3-4 Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) to be considered for impact or risk evaluation for Woodside operations

Species	EPBC Act Part 13 Statutory Instrument
All vertebrate marine fauna	Threat Abatement Plan for the impacts of marine debris on vertebrate marine life (Commonwealth of Australia, 2018)
Marine Mammals	
Blue whale	Conservation Management Plan for the Blue Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015–2025 (Commonwealth of Australia, 2015a)
Southern right whale	Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011–2021 (DSEWPAC, 2012d)
Sei whale	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
Humpback whale	Conservation Advice <i>Megaptera novaeangliae</i> humpback whale (Threatened Species Scientific Committee, 2015b)
Fin whale	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)
Australian sea lion	Recovery Plan for the Australian Sea Lion (<i>Neophoca cinerea</i>) 2013 (DSEWPAC, 2013a) (due to expire in October 2023) Conservation Advice <i>Neophoca cinerea</i> Australian Sea Lion (Threatened Species Scientific Committee, 2020a) (in effect under the EPBC Act from 23-Dec-2020)
Marine Reptiles	
All marine turtle species (loggerhead, green, leatherback, hawksbill, flatback, olive ridley)	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)
Short-nosed sea snake	Approved Conservation Advice for <i>Aipysurus apraefrontalis</i> (Short-nosed Sea Snake) (DSEWPAC, 2011a)
Leaf-scaled sea snake	Approved Conservation Advice for <i>Aipysurus foliosquama</i> (Leaf-scaled Sea Snake) (DSEWPAC, 2011b)
Fishes, Sharks, Rays and Sawfishes	
Grey nurse shark (west coast population)	Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) 2014 (DOE, 2014)
White shark	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) 2013 (DSEWPAC, 2013b)
Whale shark	Conservation Advice <i>Rhincodon typus</i> whale shark (Threatened Species Scientific Committee, 2015d)
All sawfishes (largetooth, green, dwarf, speartooth, narrow)	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)

Species	EPBC Act Part 13 Statutory Instrument
Seabirds	
Migratory seabird species	Draft Wildlife Conservation Plan for Migratory Seabirds (Commonwealth of Australia, 2019)
Southern giant petrel	National recovery plan for threatened albatrosses and giant petrels 2011–2016 (DSEWPAC, 2011c)
Indian yellow-nosed albatross	National recovery plan for threatened albatrosses and giant petrels 2011–2016 (DSEWPAC, 2011c)
Abbott's booby	Conservation Advice for the Abbott's booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020b)
Australian fairy tern	Approved Conservation Advice for <i>Sterna nereis nereis</i> (Fairy Tern) (DSEWPAC, 2011d)
Australian lesser noddy	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)
Soft-plumaged petrel	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
Shorebirds	
Migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c)
Eastern curlew, far eastern curlew	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (DOE, 2015a)
Curlew sandpiper	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DOE, 2015b)
Great knot	Conservation Advice <i>Calidris tenuirostris</i> Great knot (Threatened Species Scientific Committee, 2016a)
Red knot, knot	Conservation Advice <i>Calidris canutus</i> Red knot (Threatened Species Scientific Committee, 2016b)
Bar-tailed godwit (<i>menzbieri</i>)	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia) (Threatened Species Scientific Committee, 2016c)
Greater sand plover	Conservation Advice <i>Charadrius leschenaultii</i> Greater sand plover (Threatened Species Scientific Committee, 2016d)
Lesser sand plover	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016e)

4. HABITAT AND BIOLOGICAL COMMUNITIES

4.1 Regional context

The NWMR habitats range from nearshore benthic primary producer habitats such as seagrass beds, coral communities and mangrove forests, to offshore soft sediment seabed habitats and submerged and emergent reef systems. These habitats support biological communities that range from low density sessile and mobile benthos, such as sponges, molluscs and echinoids (with noted areas of sponge hotspot diversity) in offshore soft sediment habitat (DSEWPAC, 2012a) to complex, diverse, remote coral reef systems.

Benthic primary producer habitats, such as seagrass beds, coral communities and mangrove forests within the SWMR, are described as a mixture of tropical and temperate species, due to the seasonal influences of the tropical waters carried south by the Leeuwin Current and the temperate waters carried north by the Capes Current (DSEWPAC, 2012b).

The NMR shares similar habitat types to the NWMR. The predominant habitat of the region includes soft muddy sediments on relatively flat terrain. Other habitat types include seagrasses, reefs, shoals and coastal habitats such as mangroves and coastal wetlands (Rochester *et al.*, 2007).

The summary of key habitats and biological communities provided in the following sub-sections is focused on the primary features of relevance to the activity areas within the NWMR – primarily the offshore habitats of the continental shelf and slope, submerged shoals and banks, and remote oceanic reef systems of recognised conservation value.

4.2 Biological Productivity of NWMR

Primary productivity of the NWMR is generally low and appears to be largely driven by offshore influences (Brewer *et al.*, 2007), with periodic upwelling events and cyclonic influences driving coastal productivity with nutrient recycling and advection. Seasonal weather patterns also influence the delivery of nutrients from deep-water to shallow water. Cyclones and north-westerly winds during the North-west monsoon (approximately November–March) and the strong offshore winds of the South-east monsoon (approximately April–September) facilitate the upwelling and mixing of nutrients from deep-water to shallow water environments (Brewer *et al.*, 2007).

The Indonesian Throughflow (ITF) has an important effect on productivity in the northern areas of the Region. Generally, its deep, warm and low nutrient waters suppress upwelling of deeper comparatively nutrient-rich waters, thereby forcing the highest rates of primary productivity to occur at depths associated with the thermocline. When the ITF is weaker, the thermocline lifts bringing deeper, more nutrient-rich waters into the photic zone and hence resulting in conditions favourable to increased productivity (DEWHA, 2007a). Similarly, the Leeuwin Current has a significant role in determining primary productivity in the southern areas of the NWMR. As with the ITF, the overlying warm oligotrophic waters of the Leeuwin Current suppress upwelling. A subsurface chlorophyll maximum is therefore formed at a depth in the water column where nutrients and light are sufficient for photosynthesis to proceed. Seasonal changes in the strength of the Leeuwin Current influence primary productivity levels and seasonal interactions between the Leeuwin and Ningaloo currents in the south of the NWMR are believed to be particularly important (DEWHA, 2007a).

Internal tides (defined as internal waves generated by the barotropic tide) are a striking characteristic of many parts of the NWMR and are associated with highly stratified water columns. Internal waves (solitons), which can raise cooler, generally more nutrient rich water higher in the water column, are generated between water depths of 400 m and 1000 m where bottom topography results in a significant change in water depth over a relatively short distance. Cyclones are episodic events in the NWMR that contribute to spikes in productivity through enrichment of surface water layers due to enhanced vertical mixing of the water column. Temporary increases in primary productivity as a result of cyclones generally last between one and two weeks, and it is believed that the impacts of

cyclones are generally limited to waters less than 100 m deep and affect benthic communities more substantially than pelagic systems (DEWHA, 2007a).

Water depth also has a significant overriding influence over productivity in the marine environment, due to its influence on light availability. This is reflected by distinct onshore and offshore assemblages of major pelagic groups of phytoplankton, microzooplankton, mesoplankton and ichthyoplankton. Productivity booms are thought to be triggered by seasonal changes to physical drivers or episodic events, as detailed above, which result in rapid increases in primary production over short periods, followed by extended periods of lower primary production. The trophic systems in the NWMR are able to take advantage of blooms in primary production, enabling nutrients generated to be used by different groups of consumers over long periods (DEWHA, 2007a).

Little detailed information is available about the trophic systems in the NWMR. The utilisation of available nutrients is thought to differ between pelagic and benthic environments, influenced by water depth and vertical migration of some species groups in the water column. In the pelagic system, it is thought that approximately half of the nutrients available are utilised by microzooplankton (e.g. protozoa) with the remainder going to macro/meso-zooplankton (e.g. copepods). As primary and secondary consumers, gelatinous zooplankton (e.g. salps, coelenterates) and jellyfish are thought to play an important role in the food web, contributing a significant proportion of biomass in the marine system during and for periods after booms in primary productivity. Salps are semi-transparent, barrel-shaped marine animals that can reproduce quickly in response to bursts in primary productivity and provide a food source for many pelagic fish species (DEWHA, 2007a).

4.3 Planktonic Communities in the NWMR

The NWMR has two distinct phytoplankton assemblages; a tropical oceanic community in offshore waters and a tropical shelf community confined to the NWS (Hallegraeff, 1995). MODIS (Moderate Resolution Imaging Spectrometer) satellite datasets from the NWMR indicates that chlorophyll (and thus phytoplankton) levels are low in summer months (December to March) and higher in the winter months (Schroeder *et al.*, 2009). Low chlorophyll levels during summer months may be a result of lower plankton productivity during the wet season or lower nutrient inputs from warm surface waters dominant during summer. However, it is likely that much of the primary production is taking place below the surface, where the MODIS imagery does not penetrate (Schroeder *et al.*, 2009). The winter months are relatively cloud free and surface chlorophyll is high throughout most of the region.

Zooplankton and may include organisms that complete their lifecycle as plankton (e.g. copepods, euphausiids) as well as larval stages of other taxa such as fishes, corals and molluscs. Peaks in zooplankton such as mass coral spawning events (typically in March and April) (Rosser and Gilmour, 2008) and fish larvae abundance (CALM, 2005a) can occur throughout the year. Spatial and temporal patterns in the distribution and abundance of macro-zooplankton on the North-west Shelf are influenced by sporadic climatic and oceanographic events, with large inter-annual changes in assemblages (Wilson *et al.*, 2003). Amphipods, euphausiids, copepods, mysids and cumaceans are among the most common components of the zooplankton in the region (Wilson *et al.*, 2003).

4.3.1 Browse

Phytoplankton within the Browse activity area is expected to reflect the conditions of the NWMR. There is a tendency for offshore phytoplankton communities in the NWMR to be characterised by smaller taxa (e.g. bacteria), whereas shelf waters are dominated by larger taxa such as diatoms (Hanson *et al.*, 2007).

Zooplankton within the activity area may include organisms that complete their lifecycle as plankton (e.g. copepods, euphausiids) as well as larval stages of other taxa such as fishes, corals and molluscs. Peaks in zooplankton such as mass coral spawning events (typically in March and April) (Rosser and Gilmour, 2008; Simpson *et al.*, 1993) and fish larvae abundance (CALM, 2005a) can occur throughout the year.

The influence of the Indonesian Throughflow restricts upwelling across the Kimberley System (approximately equates to the Browse activity area). However, small-scale topographically associated current movements and upwellings are thought to occur, which inject nutrients into specific locations within the system and result in 'productivity hot-spots'. Similarly, internal waves, generated at the shelf break (e.g. west of Browse Island and around submerged cliffs) play a role in making nutrients available in the photic zone. Productivity within shallow nearshore waters is driven primarily by tidal movement and terrestrial runoff whereby nutrients are mixed by tidal action and new inputs of organic matter come from the land.

4.3.2 North-west Shelf / Scarborough

Plankton communities within the NWS / Scarborough activity area are expected to reflect conditions of the NWMR. Within the Pilbara system of the NWMR (approximately equates to the NWS / Scarborough activity area). Internal tides along the NWS and Exmouth Plateau result in the drawing of deeper cooler waters into the photic zone, stirring up nutrients and triggering primary productivity. Broadly the greatest productivity within this sub-system is found around the 200 m isobath associated with the shelf break.

4.3.3 North-west Cape

Waters of the North-west Cape experience a relatively high diversity of phytoplankton groups including diatoms, coccolithophorids and dinoflagellates. During the warmer months blooms of *Trichodesmium* occur in the region, these have been observed particularly on the frontal systems around Point Murat (Heyward *et al.*, 2000).

Average Leeuwin Current phytoplankton biomass is characteristic of low productivity oceanic waters like the Indian, Pacific and Atlantic Oceans (Hanson *et al.*, 2005). However, the Canyons linking the Cuvier Abyssal Plain and Cape Range Peninsula KEF are connected to the Commonwealth waters adjacent to Ningaloo Reef, and may also have connections to Exmouth Plateau. The canyons are thought to interact with the Leeuwin Current to produce eddies inside the heads of the canyons, resulting in waters from the Antarctic intermediate water mass being drawn into shallower depths and onto the shelf (Brewer *et al.* 2007). These waters are cooler and richer in nutrients and strong internal tides may also aid upwelling at the canyon heads (Brewer *et al.* 2007). The narrow shelf width (about 10 kilometres) near the canyons facilitates nutrient upwelling and relatively high productivity. This high primary productivity leads to high densities of primary consumers, such as micro and macro-zooplankton, such as amphipods, copepods, mysids, cumaceans, euphausiids (Brewer *et al.*, 2007).

4.4 Habitats and Biological Communities in the NWMR

4.4.1 Offshore Habitats and Biological communities

The NWMR has a large area of continental shelf and continental slope, with a range of bathymetric features such as canyons, plateaus, terraces, ridges, reefs, banks and shoals. The marine environment in this region is typified by tropical to sub-tropical marine ecosystems with diverse habitats from soft sediments, canyons, remote coral reefs and limestone pavement.

The key habitats and biological communities representative of the broader NWMR are summarised in **Table 4-1**.

The key habitats and biological communities representative of the broader SWMR and NMR are summarised in **Table 4-2** and **Table 4-3**.

4.4.2 Shoreline habitats and biological communities

The NWMR encompasses offshore and coastal waters, islands and mainland shoreline habitats typified by mangroves, tidal flats, saltmarshes, sandy beaches, and smaller areas of rocky shores. Each of these shoreline types has the potential to support different flora and fauna assemblages due to the different physical factors (e.g. waves, tides, light, etc.) influencing the habitat.

The key shoreline habitats representative of the broader NWMR are summarised in **Table 4-1**.

The key shoreline habitats representative of the broader SWMR and NMR are summarised in **Table 4-2** and **Table 4-3**.

Table 4-1 Habitats and biological communities within the NWMR

Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
Offshore habitats and biological communities				
Soft sediment with infauna	The offshore environment of the NWMR comprises predominately of seabed habitats dominated by soft sediments (sandy and muddy substrata with occasional patches of coarser sediments) and sparse benthic biota. The benthic communities inhabiting the predominantly soft, fine sediments of the offshore habitats are characterised by infauna such as polychaetes, and sessile and mobile epifauna such as crustacea (shrimp, crabs and squat lobsters) and echinoderms (starfish, cucumbers). The density of benthic fauna is typically lower in deep-sea sediment habitats (greater than 200 m) than in shallower coastal sediment habitats, but the diversity of communities may be similar.			
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. This habitat is found in offshore areas of the NWMR, often associated with key ecological features such as the Ancient coastline at 125 m depth contour KEF.			Section 9
	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Ancient Coastline at 125 m Depth Contour KEF Continental Slope Demersal Fish Communities KEF	Section 9
Coral Reef	Coral reef habitats within the NWMR have a high species diversity that includes corals, and associated reef species such as fishes, crustaceans, invertebrates, and algae. Coral reef habitats of the offshore environment of the NWMR include remote oceanic reef systems, large platform reefs, submerged banks and shoals.			
	Browse Island Scott Reef Seringapatam Reef Ashmore Reef Cartier Island Hibernia Reef	Rowley Shoals (including Mermaid Reef, Clerke Reef, Imperieuse Reef) Glomar Shoal Rankin Bank	-	Section 10
Seagrass and Macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and also provide key habitats and nursery grounds (Heck Jr. <i>et al.</i> , 2003; Wilson <i>et al.</i> , 2010). In the northern half of Western Australia, these habitats are restricted to sheltered and shallow waters, including around offshore reef systems, due to large tidal movement, high turbidity, large seasonal freshwater run-off and cyclones.			
	Scott Reef Seringapatam Reef Ashmore Reef	Rowley Shoals (including; Mermaid Reef, Clerke Reef, Imperieuse Reef)		Section 10
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2008). Filter feeders generally live in areas that have strong currents and hard substratum, often associated with deeper environments of the shoals and banks in the offshore NWMR.			
	Lower outer reef slopes of the oceanic reef	Glomar Shoal Rankin Bank	Cape Range canyon system	Section 10

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Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
	systems such as Scott Reef	Ancient coastline at 125 m depth contour KEF		
Sandy Beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents, etc). Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NWMR, being found around islands and reefs in the offshore areas of the region.			
	Browse Island Scott Reef (Sandy Islet) Ashmore Reef Cartier Island	Montebello Islands Lowendal Islands Barrow Island	Muiron Islands	Section 10
Nearshore/coastal habitats and biological communities				
Coral Reef	Coral reef habitats typically found in nearshore regions of the NWMR include the fringing reefs around coastal islands and the mainland shore.			
	Kimberley East Holothuria and Long reefs Bonaparte and Buccaneer Archipelagos Montgomery Reef Adele complex (Beagle, Mavis, Albert, Churchill reefs, Adele Island)	Dampier Archipelago Montebello, Lowendal and Barrow Island Groups	Ningaloo Reef Exmouth Gulf Shark Bay	Section 10
Seagrass and Macroalgae communities	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and also provide key habitats and nursery grounds (Heck Jr. <i>et al.</i> , 2003; Wilson <i>et al.</i> , 2010). In the nearshore areas of the NWMR, these habitats are restricted to sheltered and shallow waters due to large tidal movement, high turbidity, large seasonal freshwater run-off and cyclones. These areas include in bays and sounds and around reef and island groups.			
	King Sound	Roebuck Bay Dampier Archipelago Montebello, Lowendal and Barrow Island Groups	Ningaloo Reef Exmouth Gulf Shark Bay	Section 10
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007a). Filter feeders generally live in areas that have strong currents and hard substratum. Conversely, higher diversity infauna are mainly associated with soft unconsolidated sediment and infauna communities are considered widespread and well represented along the continental shelf and upper slopes of the NWMR. In nearshore areas of the NWMR, these species are generally found around reef systems.			
	-	Deeper habitats of Rankin Bank and Glomar Shoal	Deeper habitats of Ningaloo Reef and the protected sponge zone in the south	

Habitat/Community	Browse	NWS / Scarborough	North-west Cape	Reference
Mangroves	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i> , 2006). Mangrove forests can help stabilise coastal sediments, provide a nursery ground for many species of fish and crustacean, and provide shelter or nesting areas for seabirds (McClatchie <i>et al.</i> , 2006). Mangroves are confined to shoreline habitats, in nearshore areas of the NWMR.			
	Dampier Peninsula (including Carnot Bay, Beagle Bay and Pender Bay)	Pilbara Coastline (including; Ashburton River Delta, Coolgra Point, Robe River Delta, Yardie Landing, Yammadery Island and the Mangrove Islands) Montebello, Lowendal and Barrow Island Groups Roebuck Bay	Shark Bay Mangrove Bay, Cape Range Peninsula Exmouth Gulf	
Saltmarshes	Saltmarshes communities are confined to shoreline habitats and are typically dominated by dense stands of halophytic plants such as herbs, grasses, and low shrubs. The diversity of saltmarsh plant species increases with increasing latitude (in contrast to mangroves). The vegetation in these environments is essential to the stability of the saltmarsh, as they trap and bind sediments. The sediments are generally sandy silts and clays and can often have high organic material content.			
	-	Eighty Mile Beach Roebuck Bay	Shark Bay	
Sandy Beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents, etc). Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NWMR. Sandy beaches are important for both resident and migratory seabirds and shorebirds and can also provide an important habitat for turtle nesting and breeding. They are located along many coastlines of the nearshore environments of the NWMR.			
	Cape Domett Lacrosse Island	Eighty Mile Beach Eco Beach Dampier Archipelago Inshore Pilbara Islands (Northern, Middle, and Southern)	Ningaloo coast Muiron Islands Exmouth Gulf	

Table 4-2 Habitats within the SWMR

Habitat/Community	Location
Offshore	
Soft sediment with infauna	Most of the SWMR seafloor is composed of soft unconsolidated sediments, but due to large variations in bathymetry there are marked differences in sedimentary composition and benthic assemblage structure across the region. Despite the prevalence of these habitats in the SWMR, very little is known about the composition or distribution of the region's sedimentary infauna (DEWHA, 2008b)
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. Perth Canyon Marine Park Ancient coastline at 90-120 m depth contour KEF Diamantina Fracture Zone Naturaliste Plateau
Coral Reef	To date, studies and understanding of the corals within the SWMR have concentrated on the shallow water areas in State Waters. Within the deeper Commonwealth waters of the SWMR little is known of the distribution of corals.
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWR, 2007). Filter feeders generally inhabit deeper habitat (below the photic zone) that have strong currents and hard substratum Ancient coastline at 90-120 m depth Diamantina Fracture Zone Naturaliste Plateau Perth Canyon Marine Park South-west Corner Marine Park
Nearshore	
Coral Reef	The northern extent of the SWMR coincides loosely with the disappearance of abundant and diverse coral from coastal habitats. To the south of Shark Bay, abundant corals occur predominantly around offshore islands, with corals at inshore sites occurring in very isolated patches of non-reef coral communities, usually of reduced species richness. Houtman Abrolhos Islands Rottneest Island
Seagrass and Macroalgae communities	Within the SWMR, macroalgae and seagrass communities are noted for their extent, species richness and endemism. The clear waters of the region allow light to reach greater depths, with some species found at much greater depths than usual (down to 120 m) (DEWR, 2007). Of the known species there are more than 1000 species of macro-algae and 22 species of seagrass consisting of tropical and temperate species. Seagrass and macro-algae occur in areas with sheltered bays and in the inter-reef lagoons along exposed sections of the coast. Houtman Abrolhos Islands Jurien Marine Park Shoalwater Islands Marine Park Geographe Marine Park Cockburn Sound Rottneest Island

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Habitat/Community	Location
	Commonwealth marine environment within and adjacent to the west-coast inshore lagoons KEF Commonwealth marine environment within and adjacent to Geographe Bay KEF Commonwealth marine environment surrounding the Recherche Archipelago KEF
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWR, 2007). Filter feeders generally live in areas that have strong currents and hard substratum. Houtman Abrolhos Islands Recherche Archipelago
Mangroves	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i> , 2006). Mangrove forests can help stabilise coastal sediments, provide a nursery ground for many species of fish and crustacean, and provide shelter or nesting areas for seabirds (McClatchie <i>et al.</i> , 2006). Mangroves are confined to shoreline habitats, in nearshore areas of the SWMR. Houtman Abrolhos Islands
Sandy Beaches	Sandy beaches within the SWMR are important for both resident and migratory seabirds and shorebirds and can also host breeding populations of the Australian sea lion. They are found along many coastlines of the nearshore environments of the SWMR. In addition to this, beaches in the SWMR provide a variety of socio-economic values including tourism, commercial and recreational fishing, and support other recreational activities. Houtman Abrolhos Islands Marmion Marine Park Ngari Capes Marine Park Walpole and Nornalup Inlets Marine Park

Table 4-3 Habitats and Biological Communities within the NMR

Habitat/Community	Location		
Offshore habitats and biological communities			
Soft sediment with infauna	Most of the offshore environment of the NMR is characterised by relatively flat expanses of soft sediment seabed. The soft sediments of the region are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs, and echinoderms.		
Soft sediment with hard substrate outcropping	A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments. The variability in substrate composition may contribute to the presence of unique ecosystems. Species present include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments.		
	Carbonate bank and terrace system of the Van Diemen Rise KEF Pinnacles of the Bonaparte Basin KEF		
Coral Reef	Offshore coral reefs within the NMR is generally associated with a series of submerged shoals and banks. The shoals/banks in the region support tropical marine biota consistent with that found on emergent reef systems of the Indo West Pacific region such as Ashmore Reef, Cartier Island, Seringapatam Reef and Scott Reef (Heyward <i>et al.</i> , 1997)		
	Pinnacles of the Bonaparte Basin KEF Evans Shoal Tassie Shoal Blackwood Shoal		
Filter Feeders/ heterotrophic	Filter feeder epifauna such as sponges, ascidians, soft corals and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007b). Filter feeders generally live in areas that have strong currents and hard substratum and typically associated with the deeper habitats of the submerged shoals and banks, and canyon features.		
	Carbonate bank and terrace system of the Van Diemen Rise KEF Pinnacles of the Bonaparte Basin KEF Tributary Canyons of the Arafura Depression KEF Evans Shoal Tassie Shoal Goodrich Bank		
Nearshore			
Coral Reef	Within the NMR corals occur both as reefs and in non-reef coral communities. Nearshore reefs include patch reefs and fringing reefs sparsely distributed within the region. Coral reefs within the NMR provides breeding and aggregation areas for many fish species including mackerel and snapper and offer refuges for sea snakes and apex predators such as sharks.		
	Submerged coral reefs of the Gulf of Carpentaria KEF Darwin Harbour		
Seagrass and Macroalgae communities	Seagrasses provide key habitats in the NMR. They stabilise coastal sediments and trap and recycle nutrients. They provide nursery grounds for commercially harvested fish and prawns and provide feeding grounds for dugongs and green turtles. Seagrass distribution in the region is largely associated with sheltered small bays and inlets including shallow waters surrounding inshore islands.		
	Field Island The mainland coastline adjacent to Kakadu National Park		
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Habitat/Community	Location
Filter Feeders/ heterotrophic	<p>Filter feeder epifauna such as sponges, ascidians, soft corals, and gorgonians are animals that feed by actively filtering suspended matter and food particles from water, by passing the water over specialised filtration structures (DEWHA, 2007b). Filter feeders generally live in areas that have strong currents and hard substratum.</p> <p>Cape Helveticus</p>
Mangroves	<p>Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie <i>et al.</i>, 2006). Mangroves provide habitat for waterbirds and support many commercially and recreationally important fish and crustacean species for parts of their life cycles. They buffer the coast from large tidal movements, storm surges and flooding.</p> <p>Tiwi Islands Darwin Harbour The mainland coastline adjacent to the Daly River</p>
Sandy Beaches	<p>Sandy beaches vary in length, width and gradient, and in sediment type, composition, and grain size throughout the NMR and are important for both resident and migratory seabirds and shorebirds. Sandy beaches can also provide an important habitat for turtle nesting. They are located along many coastlines of the nearshore environments of the islands and mainland shores of the NMR.</p> <p>Tiwi Islands Cobourg Peninsula Joseph Bonaparte Gulf</p>

5. FISHES, SHARKS AND RAYS

5.1 Regional Context

Western Australian waters provide important habitat for listed fishes, sharks, and rays including areas that support key life stages such as breeding, foraging, and migration routes for fish species. Pelagic and demersal fishes occupy a range of habitats throughout each of the regions, from coral reefs to open offshore waters, and are an extremely important component of ecosystems, providing a link between primary production and higher predators, with many species being of conservation value and important for commercial and recreational fishing.

The fish fauna in the NWMR is diverse. Of the approximately 500 shark species found worldwide, 94 are found in the region (DEWHA, 2008). Approximately 54 species of syngnathids (seahorses, seadragons, pipehorses and pipefishes) and one species of solenostomids (ghostpipefishes) are also known to occur in the NWMR or adjacent State waters (DSEWPAC, 2012a).

The fish fauna of the SWMR includes more than 900 species occupying a large variety of habitats. However, only three species of bony fishes known to occur in the region are listed under the EPBC Act as threatened or marine species, and seven listed species of shark (DSEWPAC, 2012b).

The NMR is considered an important area for the sawfish and river shark species group, with five species of sawfishes and river sharks listed under the EPBC Act known to occur in the region (DSEWPAC, 2012c). Approximately 28 species of syngnathids and two species of solenostomids are listed marine and known to occur in the NMR, however there is a paucity of knowledge on the distribution, relative abundance and habitats of these species in the region (DEWHA, 2008).

The following sections focus on the fish species (including sharks and rays) listed as threatened or migratory that are known to occur within the NWMR. In addition, listed, conservation dependent fish and shark species for the NWMR are described. A detailed account of commercial and recreational fisheries that operate in the region is provided in **Section 11**.

Table 5-1 outlines the threatened and migratory fish species that may occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice. **Table 5-2** provides information for species of fish that are listed as conservation dependent that may occur within the NWMR, NMR and SWMR. Note that currently there are no approved Conservation Advices in place for any of these five species.

Table 5-1 Fish species (including sharks and rays) identified by the EPBC Act PMST for the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Rhincodon typus</i>	Whale shark	Vulnerable	Migratory	Marine	Other specially protected fauna	Conservation Advice <i>Rhincodon typus</i> whale shark. (Threatened Species Scientific Committee, 2015d)
<i>Carcharias taurus</i>	Grey nurse shark (west coast population)	Vulnerable	N/A	Marine	Vulnerable	Recovery Plan for the Grey Nurse Shark (<i>Carcharias taurus</i>) (DOE, 2014a)
<i>Carcharodon carcharias</i>	White shark	Vulnerable	Migratory	Marine	Vulnerable	Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPAC, 2013b)
<i>Isurus oxyrinchus</i>	Shortfin mako	N/A	Migratory	Marine	N/A	N/A
<i>Isurus paucus</i>	Longfin mako	N/A	Migratory	Marine	N/A	N/A
<i>Lamna nasus</i>	Porbeagle shark Mackerel shark	N/A	Migratory	Marine	N/A	N/A
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	N/A	Migratory	Marine	N/A	N/A
<i>Anoxypristis cuspidata</i>	Narrow sawfish	N/A	Migratory	Marine	N/A	N/A
<i>Pristis clavata</i>	Dwarf sawfish	Vulnerable	Migratory	Marine	Priority	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)
<i>Pristis pristis</i>	Largetooth (Freshwater) sawfish	Vulnerable	Migratory	Marine	Priority	
<i>Pristis zijsron</i>	Green sawfish	Vulnerable	Migratory	Marine	Vulnerable	
<i>Glyphis garricki</i>	Northern river shark	Endangered	N/A	Marine	Priority	
<i>Manta alfredi</i>	Reef manta ray	N/A	Migratory	Marine	N/A	N/A
<i>Manta birostris</i>	Giant manta ray	N/A	Migratory	Marine	N/A	N/A

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Table 5-2 EPBC Act listed Conservation Dependent species of fishes and sharks that may occur in the NWMR, NMR and SWMR

Species Name	Common Name	Likely Occurrence / Distribution	Listing Advice
<i>Hoplostethus atlanticus</i>	Orange roughy, Deep-sea perch, Red roughy	SWMR	No conservation listing advice for this species. Refer to the Marine bioregional plan for the SWMR (DSEWPAC, 2012b) for further information
<i>Thunnus maccoyii</i>	Southern bluefin tuna	NWMR and SWMR	Threatened Species Scientific Committee (2010)
<i>Sphyrna lewini</i>	Scalloped hammerhead	NWMR, NMR and SWMR	Threatened Species Scientific Committee (2018)
<i>Centrophorus zeehaani</i>	Southern dogfish, Endeavour dogfish, Little gulper shark	SWMR	Threatened Species Scientific Committee (2013)
<i>Galeorhinus galeus</i>	School shark, Eastern school shark, Snapper shark, Tope, Soupfin shark	SWMR	Threatened Species Scientific Committee (2009)

5.2 Protected Sharks, Sawfishes and Rays in the NWMR

The EPBC Act Protected Matters search (**Appendix A**) identified seven species of shark and five species of river shark or sawfish listed as threatened and/or migratory within the NWMR. In addition, two species of ray (the reef manta ray and giant manta ray) are listed as migratory within the region (refer **Table 5-2**).

5.2.1 Sharks and Sawfishes

The shark species known to occur within the NWMR include: the whale shark, grey nurse shark, white shark, shortfin mako, and longfin mako (**Table 5-2**).

Five species of river shark or sawfish known to occur in the NWMR and include: the narrow sawfish, northern river shark, freshwater sawfish, green sawfish and dwarf sawfish (**Table 5-2**).

There are identified BIAs within the NWMR for the whale shark, freshwater sawfish, green sawfish, and dwarf sawfish (refer **Section 5.3.2**).

Table 5-2 Information on the threatened shark and sawfish species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Whale shark	Preferred habitat: They have a widespread distribution in tropical and warm temperate seas, both oceanic and coastal (Last and Stevens, 2009). The species is widely distributed in Australian waters. Diet: Whale sharks are planktivorous sharks and feed on a variety of planktonic organisms including krill, jellyfish, and crab larvae (Last and Stevens, 2009).	Ningaloo Reef is the main known aggregation site for whale sharks in Australian waters and has the largest density of whale sharks per kilometre in the world (Martin, 2007). Refer Table 5-3 for the BIA summary for the whale shark.
Grey nurse shark (west coast population)	Preferred habitat: Most commonly found in temperate waters on, or close to, the bottom of the continental shelf, from close inshore to depths of about 200 m (McAuley, 2004). Diet: A variety of teleost and elasmobranch fishes and some cephalopods (Gelsleichter <i>et al.</i> , 1999; Smale, 2005).	Details of movement patterns of the western sub-population are unclear (McAuley, 2004) and key aggregation sites have not been formally identified within the NWMR (Chidlow <i>et al.</i> , 2006). The NWMR represents the northern limit of the west coast population.

Species	Preferred Habitat and Diet	Habitat Location
White shark	<p>Preferred habitat: The species typically occurs in temperate coastal waters between the shore and the 100 m depth contour; however, adults and juveniles have been recorded diving to depths of 1000 m (Bruce <i>et al.</i>, 2006; Bruce, 2008).</p> <p>Diet: Smaller white sharks (less than 3 m in length) feed primarily on teleost and elasmobranch fishes, broadening their diet as larger sharks to include marine mammals (Last and Stevens, 2009).</p>	<p>There are no known aggregation sites for white sharks in the NWMR, and this species is most often found south of North-west Cape, in low densities (DSEWPAC, 2012a).</p> <p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Shortfin mako	<p>Preferred habitat: The shortfin mako shark is a pelagic species with a circumglobal, wide-ranging oceanic distribution in tropical and temperate seas (Mollet <i>et al.</i>, 2000). Tagging studies indicate shortfin makos spend most of their time in water less than 50 m deep but with occasional dives up to 880 m (Abascal <i>et al.</i>, 2011; Stevens <i>et al.</i>, 2010).</p> <p>Diet: Feeds on a variety of prey, such as teleost fishes, other sharks, marine mammals, and marine turtles (Campana <i>et al.</i>, 2005).</p>	<p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Longfin mako	<p>Preferred habitat: A pelagic species with a wide-ranging oceanic distribution in tropical and temperate seas (Mollet <i>et al.</i>, 2000).</p> <p>Diet: Primarily teleost fishes and cephalopods (primarily squid) (Last and Stevens, 2009).</p>	<p>Records on longfin mako sharks are sporadic and their complete geographic range is not well known (Reardon <i>et al.</i>, 2006).</p> <p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
Mackerel/Porbeagle shark	<p>Preferred habitat: The porbeagle shark primarily inhabits offshore waters around the edge of the continental shelf. They occasionally move into coastal waters, but these movements are temporary (Campana and Joyce, 2004; Francis <i>et al.</i>, 2002). The porbeagle shark is known to dive to depths exceeding 1300 m (Campana <i>et al.</i>, 2010; Saunders <i>et al.</i>, 2011).</p> <p>Diet: Primarily teleost fish, elasmobranchs, and cephalopods (primarily squid) (Joyce <i>et al.</i>, 2002; Last and Stevens, 2009).</p>	<p>In Australia, the species occurs in waters from southern Queensland to south-west Australia (Last and Stevens, 2009). Distribution within the NWMR is unknown, but there are several records for this species on the NWS in the Atlas of Living Australia (ALA).</p>
Oceanic whitetip shark	<p>Preferred habitat: The oceanic whitetip shark is globally distributed in warm-temperate and tropical oceans (Andrzejczek <i>et al.</i>, 2018). The species may occur in tropical and sub-tropical offshore and coastal waters around Australia. They primarily occupy pelagic waters in the upper 200 m of the water column; however, they have been observed diving to depths of around 1000 m, potentially associated with foraging behaviour (Howey-Jordan <i>et al.</i>, 2013; D'Alberto <i>et al.</i>, 2017). The species is highly migratory, travelling large distances between shallow reef habitats in coastal waters and oceanic waters (Howey-Jordan <i>et al.</i>, 2013). The species does exhibit a strong preference for warm and shallow waters above 120 m.</p> <p>Diet: Opportunistic feeders and generally target a variety of finfishes and pelagic squid, depending on habitat. Target pelagics such as tuna in open ocean as noted by the large bycatch numbers in the long line fisheries.</p>	<p>Given the migratory nature of the species, most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>

Species	Preferred Habitat and Diet	Habitat Location
Narrow sawfish	Preferred habitat ¹ : Shallow coastal, estuarine, and riverine habitats, however it may occur in waters up to 40 m deep (D'Anastasi <i>et al.</i> , 2013). Diet: Shoaling fishes, such as mullet, as well as molluscs and small crustaceans (Cliff and Wilson, 1994).	Shallow coastal waters of the Pilbara and Kimberly coasts (Last and Stevens, 2009).
Northern river shark	Preferred habitat ¹ : Rivers, tidal sections of large tropical estuarine systems and macrotidal embayments, as well as inshore and offshore marine habitats (Pillans <i>et al.</i> , 2009; Thorburn and Morgan, 2004). Adults have been recorded only in marine environments. Juveniles and sub-adults have been recorded in freshwater, estuarine and marine environments (Pillans <i>et al.</i> , 2009). Diet: Variety of fish and crustaceans (Stevens <i>et al.</i> , 2005)	Within the NWMR records have come from both the west and east Kimberley, including King Sound, the Ord and King rivers, West Arm of Cambridge Gulf and also from Joseph Bonaparte Gulf (Thorburn and Morgan, 2004; Stevens <i>et al.</i> , 2005; Thorburn, 2006; Field <i>et al.</i> , 2008; Pillans <i>et al.</i> , 2008, Whitty <i>et al.</i> , 2008; Wynen <i>et al.</i> , 2008).
Large-tooth (Freshwater) sawfish	Preferred habitat: Sandy or muddy bottoms of shallow coastal waters, estuaries, river mouths and freshwater rivers, and isolated water holes. Diet: Shoaling fishes, such as mullet, as well as molluscs and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the freshwater sawfish.
Green sawfish	Preferred habitat ¹ : Inshore coastal environments including estuaries, river mouths, embayments, and along sandy and muddy beaches, as well as offshore marine habitat (Stevens <i>et al.</i> , 2005; Thorburn <i>et al.</i> , 2003). Diet: Schools of baitfish and prawns (Pogonoski <i>et al.</i> , 2002), molluscs and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the green sawfish.
Dwarf sawfish	Preferred habitat ¹ : Shallow (2 to 3 m) silty coastal waters and estuarine habitats, occupying relatively restricted areas and moving only small distances (Stevens <i>et al.</i> , 2008) Diet: Shoaling fish such as mullet, molluscs, and small crustaceans (Cliff and Wilson, 1994).	Refer Table 5-3 for the BIA summary for the dwarf sawfish.

¹ Preferred habitat as described within the Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b).

5.2.2 Rays

Rays are commonly found in the NWMR. Two listed and migratory species of ray known to occur within the NWMR: the reef manta ray and giant manta ray.

No BIAs for either the reef or giant manta ray species have been identified in the NWMR.

Table 5-3 Information on migratory ray species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Reef manta ray	Preferred habitat: The reef manta ray is commonly sighted within productive nearshore environments, such as island groups, atolls or continental coastlines. However, the species has also been recorded at offshore coral reefs, rocky reefs, and seamounts (Marshall <i>et al.</i> , 2009). Diet: Feed on planktonic organisms including krill and crab larvae.	A resident population of reef manta rays has been recorded at Ningaloo Reef. No BIAs identified for NWMR.
Giant manta ray	Preferred habitat: The species primarily inhabits near-shore environments along productive coastlines with regular upwelling, but they appear	The Ningaloo Coast is an important area for giant manta rays from March to August (Preen <i>et al.</i> , 1997).

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Species	Preferred Habitat and Diet	Habitat Location
	to be seasonal visitors to coastal or offshore sites including offshore island groups, offshore pinnacles and seamounts (Marshall <i>et al.</i> , 2011). Diet: Feed on planktonic organisms including krill and crab larvae.	No BIAs identified for NWMR.

5.3 Fish, Shark and Sawfish Biological Important Areas in the NWMR

A review of the National Conservation Values Atlas identified Biologically Important Areas (BIAs) for four species of shark and sawfish (whale shark, freshwater sawfish, green sawfish and dwarf sawfish) within the NWMR. The BIAs for the whale shark and the sawfish species include foraging, nursing and pupping areas. These are described in **Table 5-4**.

Table 5-4 Fish, whale shark and sawfish BIAs within the NWMR

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Pupping	Nursing	Foraging
Whale shark	✓	✓	✓	No pupping BIA identified within the NWMR	No nursing BIA identified within the NWMR	Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (March–July) Foraging northward from Ningaloo along the 200 m isobath (July – Nov).
Green sawfish	✓	✓	-	Pupping in Cape Keraudren (pupping occurs in summer in a narrow area adjacent to shoreline) Pupping in Willie Creek Pupping in Roebuck Bay Pupping in Cape Leveque Pupping in waters adjacent to Eighty Mile Beach Pupping (likely) in Camden Sound.	Nursing in Cape Keraudren Nursing in waters adjacent to Eighty Mile Beach	Foraging in Cape Keraudren Foraging in Roebuck Bay Foraging in Cape Leveque Foraging in Camden Sound
Largetooth (freshwater) sawfish	✓	✓	-	Pupping in the mouth of the Fitzroy River (January to May) Roebuck Bay (Jan – May) Pupping likely in waters adjacent to Eighty Mile Beach	Nursing (likely) in King Sound Roebuck Bay (Jan – May)	Foraging in the mouth of the Fitzroy River (January to May) Foraging in King Sound Roebuck Bay (Jan – May) Foraging in waters adjacent to Eighty Mile Beach
Dwarf sawfish	✓	✓	-	Pupping in King Sound Pupping in waters adjacent to Eighty Mile Beach	Nursing in King Sound Nursing waters adjacent to Eighty Mile Beach	Foraging in King Sound Foraging in Camden Sound Foraging in waters adjacent to Eighty Mile Beach

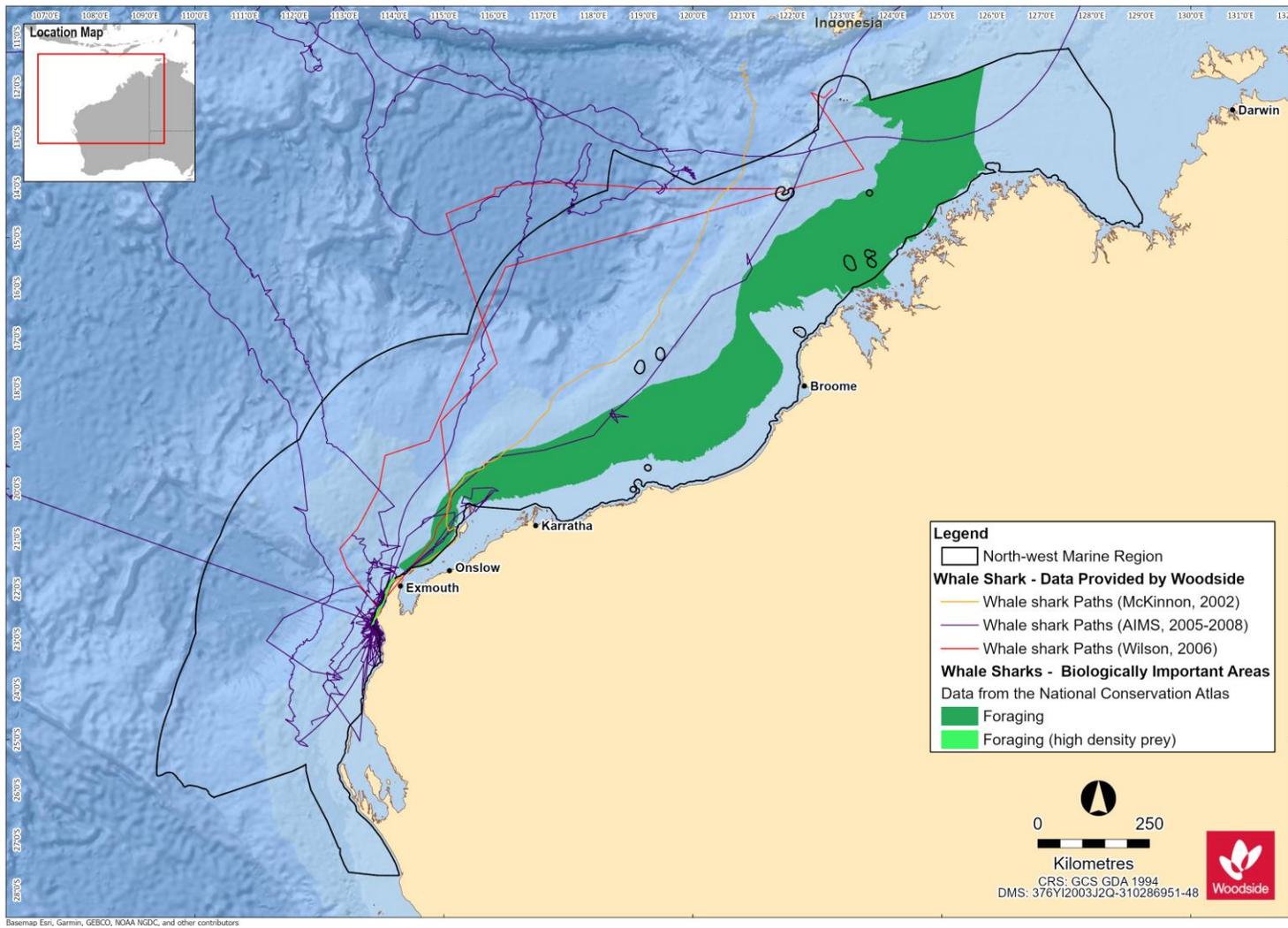


Figure 5-1 Whale shark BIAs for the NWMR and tagged whale shark tracks

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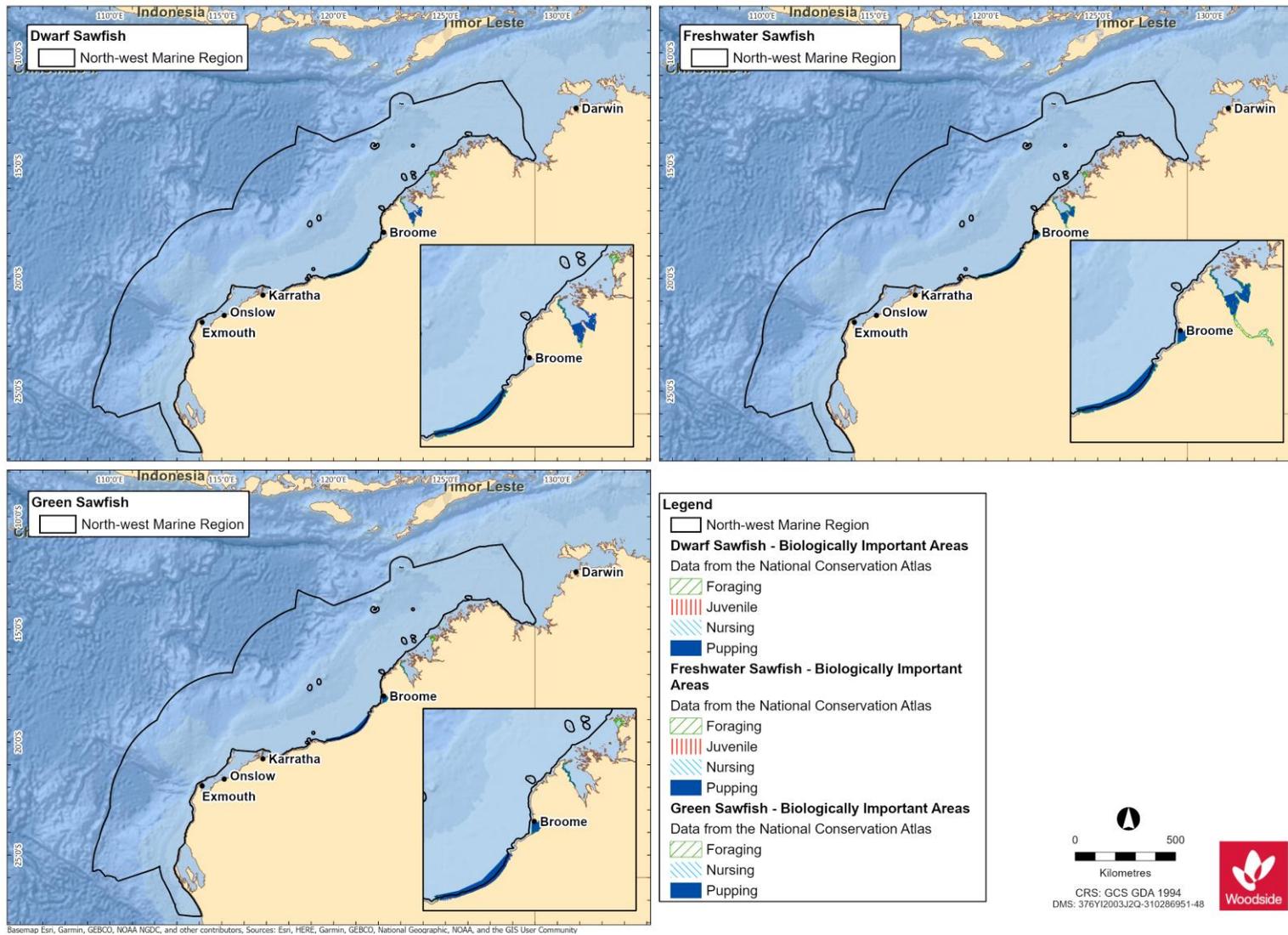


Figure 5-2 Sawfish BIAs for the NWMR

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5.4 Fish Assemblages of the NWMR

5.4.1 Regional Context for Fish Assemblages of NWMR

The NWMR contains a diverse range of fishes of tropical Indo-west Pacific affinity (Allen *et al.*, 1988). The region is characterised by the highest level of endemism and species diversity compared with other areas of the Australian continental slope. Last *et al.* (2005) recorded 1431 species from the three bioregions encompassing the continental slope, whilst also acknowledging some information gaps.

The NWMR is known for its demersal slope fish assemblages; the continental slope of the Timor Province and the North-west Transition supports more than 418 and 505 species of demersal fishes respectively, of which 64 are considered to be endemic. This is the second richest area for demersal fish species across the entire Australian continental slope. Conversely, the broad Southern Province, which covers most of southern Australia, supports 463 species, only 26 possibly being endemic. The continental slope demersal fish assemblages of the NWMR have been identified as a KEF (DEWHA, 2008), as described in **Section 9**.

The NWMR also features a diversity of pelagic fishes (those living in the pelagic zone) and benthopelagic fishes, including tuna, billfish, bramids, lutjanids, serranids and some sharks (DEWHA, 2007a). These species feed on salps and jellyfish, and more often on secondary consumers such as squid and bait fish. Water depth provides an indication of the level of interaction between pelagic and benthic communities within the NWMR; in waters deeper than 1000 m, for instance, the trophic system is pelagically-driven and benthic communities rely on particulates that fall to the seafloor (DEWHA, 2007a).

Pelagic fishes play an important ecological role within the NWMR; small pelagic fishes, such as lantern fish, inhabit a range of marine environments, including inshore and continental shelf waters and form a vital link in and between many of the region's trophic systems, feeding on pelagic phytoplankton and zooplankton and providing a food source for a wide variety of predators including large pelagic fishes, sharks, seabirds and marine mammals (Bulman, 2006; Mackie *et al.*, 2007). Large pelagic fishes, such as tuna, mackerel, swordfish, sailfish and marlin, are found mainly in oceanic waters and occasionally on the continental shelf (Brewer *et al.*, 2007). Both juvenile and adult phases of the large pelagic species are highly mobile and have a wide geographic distribution, although the juveniles more frequently inhabit warmer or coastal waters (DEWHA, 2008).

5.4.2 Listed Fish Species in the NWMR

The family Syngnathidae is a group of bony fishes that includes seahorses, pipefishes, pipehorses and seadragons. Along with syngnathids, members of the related Solenostomidae family (ghost pipefishes) are also found in the NWMR (DSEWPAC, 2012a).

There are 44 solenostomid and syngnathid species that are listed marine species that may occur within the NWMR, although no species is currently listed as threatened or migratory, according to the PMST report (**Appendix A**).

Syngnathids live in nearshore and inner shelf habitats, usually in shallow coastal waters, among seagrasses, mangroves, coral reefs, macroalgae dominated reefs, and sand or rubble habitats (Dawson, 1985; Lourie *et al.*, 1999, Lourie *et al.*, 2004; Vincent, 1996). Two species, the winged seahorse (*Hippocampus alatus*) and western pipehorse (*Solegnathus sp. 2*) have been identified in deeper waters of the NWMR (up to 200 m) (DSEWPAC, 2012a), however, these species were not identified by the Protected Matters search of the NWMR.

Knowledge about the distribution, abundance and ecology of both syngnathids and solenostomids in the NWMR is limited. No BIAs for syngnathids and solenostomids have been identified in the NWMR.

5.4.3 Browse

The proposed Browse activity area includes biologically important habitat for the whale shark and three sawfish species:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July – Nov),
- freshwater sawfish (pupping, nursing and foraging areas),
- green sawfish (pupping, nursing and foraging areas); and
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the shark and sawfish species are outlined in **Table 5-4** and **Figure 5-1**.

The proposed Browse activity area has partial overlap with the Continental slope demersal fish communities KEF.

5.4.4 NWS / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for the whale shark and three sawfish species:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July – Nov),
- freshwater sawfish (pupping, nursing and foraging areas),
- green sawfish (pupping, nursing and foraging areas); and
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the whale shark and sawfish species are outlined in **Table 5-4** and **Figure 5-1**.

The NWS / Scarborough activity area has partial overlap with the Continental slope demersal fish communities KEF. The continental slope between North-west Cape and the Montebello Trough has more than 500 fish species, 76 of which are endemic, which makes it the most diverse slope bioregion in Australia (Last *et al.*, 2005).

5.4.5 North-west Cape

The North-west Cape activity area includes biologically important foraging habitat for the whale shark:

- whale shark, including:
 - Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (March–July); and
 - Foraging northward from Ningaloo along the 200 m isobath (July – Nov).

BIAs for the whale shark are outlined in **Table 5-4** and **Figure 5-1**.

The North-west Cape activity area coincides with part of the Continental slope demersal fish communities KEF.

6. MARINE REPTILES

6.1 Regional Context for Marine Reptiles

The NWMR contains important habitat for listed marine reptiles, including areas that support key life stages such as nesting, internesting, migration and foraging for marine turtle species, and habitats supporting resident sea snake and crocodile populations.

Six of the seven marine turtle species occur in Australian waters, and all six (the green turtle, hawksbill turtle, loggerhead turtle, flatback turtle, leatherback turtle and olive ridley turtle) occur in the NWMR and NMR.

There are 25 listed species of sea snake reported within or adjacent to the NWMR (Guinea, 2007a; Udyawer *et al.*, 2016), of which four are endemic to reef habitats in the remote parts of the region. Nineteen (19) listed sea snake species are known to occur in the NMR, as reported in the Protected Matters search (**Appendix A**).

There are significantly fewer marine reptile species that frequently occur within the SWMR and presently include three species of listed marine turtle and one sea snake species. Other species of sea snake may occur because of the southward-flowing Leeuwin Current, as vagrants in the region (DSEWPAC, 2012b).

The following sections focus on the listed marine reptile species known to occur within the NWMR.

Table 6-1 outlines the threatened and migratory marine reptile species that occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

Table 6-1 Marine reptile species identified by the EPBC Act PMST as potentially occurring within or utilising habitats in the NWMR for key life cycle stages

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Caretta caretta</i>	Loggerhead turtle	Endangered	Migratory	Marine	Endangered	Recovery Plan for Marine Turtles in Australia 2017-2027 (Commonwealth of Australia, 2017)
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered	Migratory	Marine	Vulnerable	
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory	Marine	Vulnerable	
<i>Lepidochelys olivacea</i>	Olive ridley turtle	Endangered	Migratory	Marine	Vulnerable	
<i>Aipysurus apraefrontalis</i>	Short-nosed sea snake	Critically endangered	N/A	Marine	Critically endangered	Approved Conservation Advice for <i>Aipysurus apraefrontalis</i> (Short-nosed Sea Snake) (DSEWPAC, 2011a)
<i>Aipysurus foliosquama</i>	Leaf-scaled sea snake	Critically endangered	N/A	Marine	Critically endangered	Approved Conservation Advice for <i>Aipysurus foliosquama</i> (Leaf-scaled Sea Snake) (DSEWPAC, 2011b)
<i>Crocodylus porosus</i>	Salt-water crocodile	N/A	Migratory	Marine	Other protected fauna	N/A

6.2 Marine Turtles in the NWMR

According to the Protected Matters search (**Appendix A**) six species of marine turtle known to occur within the NWMR are listed as threatened and migratory (three Vulnerable and three Endangered) under the EPBC Act—the green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), flatback (*Natator depressus*), loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*) and olive ridley (*Lepidochelys olivacea*) turtle (DSEWPAC, 2012a) (refer **Table 6-1**).

The NWMR supports globally significant breeding populations of four marine turtle species: the green, hawksbill, flatback and loggerhead turtle. Olive ridley turtles are known to forage within the NWMR, but there are only occasional records of the species nesting in the region. Leatherback turtles regularly forage over Australian continental shelf waters within the NWMR but there are also no records of the species nesting in the region (DSEWPAC, 2012a).

The six marine turtle species reported for the NWMR also occur within the NMR.

Three marine turtle species; the green, loggerhead, and leatherback turtle, have presumed feeding areas within the SWMR; however, no known nesting areas exist within the region (DSEWPAC, 2012b).

Discrete genetic stocks have evolved within each marine turtle species. This is the result of marine turtles returning to the location where they hatched. These genetically distinct stocks are defined by the presence of regional breeding aggregations. Stocks are composed of multiple rookeries in a region and are delineated by where there is little or no migration of individuals between nesting areas. Turtles from different stocks typically overlap at feeding grounds (Commonwealth of Australia, 2017). There are 17 genetic stocks across both the NWMR and NMR (nine in the NWMR, six in the NMR, and two overlapping both regions). Of these 17 genetic stocks, nine are known to occur within Woodside's three areas of activity (**Table 6-2**).

6.2.1 Life Cycle Stages

Marine turtles are highly migratory during non-reproductive life phases and have high site fidelity during breeding and nesting life phases. Majority of their lives are spent in the ocean, but the adult female marine turtles will come ashore to lay eggs in the sand above the high water mark on natal beaches (Commonwealth of Australia, 2017). **Figure 6-1** summarises the generalised life cycle of marine turtles. Species-specific life cycle information is outlined within the Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017).

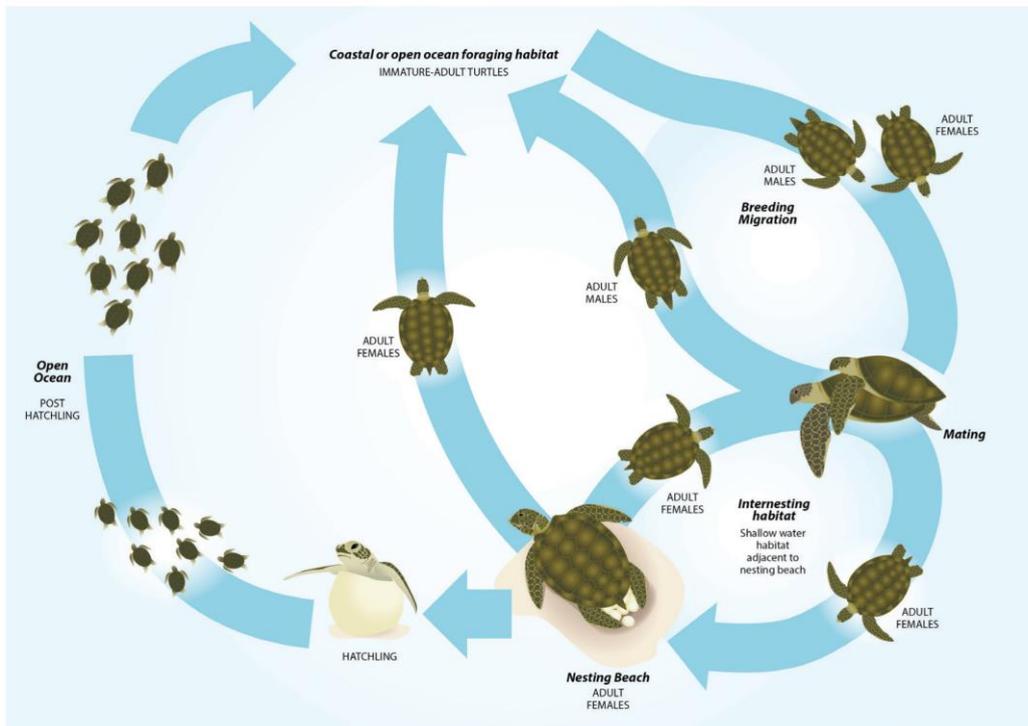


Figure 6-1 Generalised life cycle of marine turtles (Commonwealth of Australia, 2017)

6.2.2 Habitat Critical to Survival for Marine Turtles in the NWMR

The Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017) identifies habitat critical to the survival of a species for marine turtle stocks under the EPBC Act. Habitat critical to survival is defined by the EPBC Act *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* as areas necessary:

- for activities such as foraging, breeding or dispersal;
- for the long-term maintenance of the species (including the maintenance of species essential to the survival of the species);
- to maintain genetic diversity and long term evolutionary development; and
- for the reintroduction of populations or recovery of the species.

The Recovery Plan for Marine Turtles of Australia (Commonwealth of Australia, 2017) has identified nesting locations and associated interesting areas as habitat critical to survival for four marine turtle species within the NWMR and these are identified, described and mapped in **Table 6-2** and **Figure 6-2**. No habitat critical to survival has been identified within the NWMR for olive ridley or leatherback turtles.

Table 6-2 outlines the relevant genetic stock, habitat critical to survival and key life cycle stage seasonality of the four species of marine turtles within the NWMR.

Table 6-2 Genetic stock, habitat critical to survival and key life cycle stage seasonality of the four species of marine turtles within the NWMR

Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Internesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Green Turtle							
NWS Stock (G-NWS)	✓	✓	✓	Adele Island Maret Island Cassini Island Lacepede Islands* Barrow Island* Montebello Islands (all with sandy beaches)* Serrurier Island Dampier Archipelago Thevenard Island Northwest Cape* Ningaloo coast	20 km radius	Nov-Mar	Nearshore reef habitats in the photic zone.
Ashmore Reef Stock (G-AR)	✓	-	-	Ashmore Reef* Cartier Reef*		All year (peak: Dec-Jan)	
Scott Reef-Browse Island Stock (G-ScBr)	✓	-	-	Scott Reef (Sandy Islet)* Browse Island*		Nov-Mar	
Hawksbill Turtle							
Western Australia Stock (H-WA)	-	✓	-	Dampier Archipelago (including Rosemary Island and Delambre Island)* Montebello Islands (including Ah Chong Island, South East Island and Trimouille Island)* Lowendal Islands (including Varanus Island, Beacon Island and Bridled Island) Sholl Island	20 km radius	Oct-Feb	Nearshore and offshore reef habitats.

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Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Internesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Flatback Turtle							
Cape Domett Stock (F-CD)	✓	-	-	Cape Domett* Lacrosse Island	60 km radius	All year (peak: Jul-Sep)	Nearshore and offshore sub-tidal and soft bottomed habitats of offshore islands.
South-west Kimberley Stock (F-swKim)	-	✓	-	Eighty Mile Beach* Eco Beach* Lacepede Islands		Oct-Mar	
Pilbara Stock (F-Pil)	-	✓	-	Montebello Islands Mundabullangana Beach* Barrow Island* Cemetery Beach Dampier Archipelago (including Delambre Island* and Huay Island) Coastal islands from Cape Preston to Locker Island		Oct-Mar	
Unknown genetic stock Kimberley, Western Australia	✓	✓	-	Maret Islands Montilivet Islands Cassini Island Coronation Islands (includes Lamarck Island) Napier-Broome Bay Islands (West Governor Island, Sir Graham Moore Island – near Kalumbaru) Champagny, Darcy and Augustus Islands (Camden Sound)		May-July	

Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (* Major Rookery ¹)	Interesting Buffer	Seasonality-Nesting	Preferred Habitat ²
Loggerhead Turtle							
Western Australia Stock (LH-WA)	-	-	✓	Dirk Hartog Island* Muiron Islands* Gnaraloo Bay* Ningaloo coast	20 km radius	Nov-May	Nearshore and island coral reefs, bays and estuaries in tropical and warm temperate latitudes.

¹ Major rookeries as outlined in the Recovery Plan (Commonwealth of Australia, 2017)

² Preferred habitat as outlined in the Recovery Plan (Commonwealth of Australia, 2017)

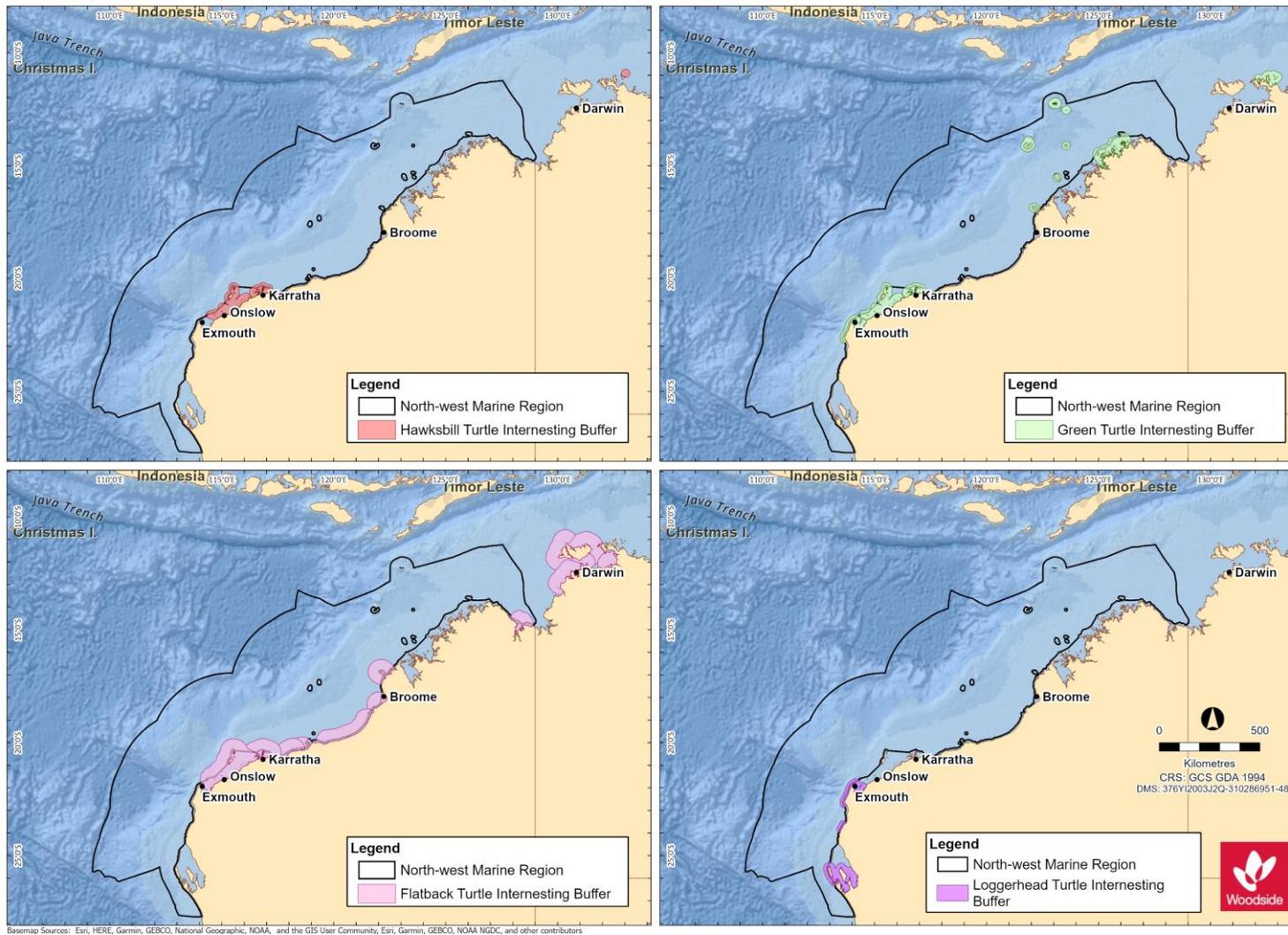


Figure 6-2 Marine turtle species habitat critical to survival (nesting beaches and interning buffers) for the NWMR

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6.3 Marine Turtle Biological Important Areas in the NWMR

A review of the National Conservation Values Atlas (DAWE, 2020²) identified BIAs for the four marine turtle species that occur within the NWMR. These are described in **Table 6-3**. Note that nesting and interesting BIAs are not listed in **Table 6-3** as they are defined as in the Recovery Plan as habitat critical to survival for marine turtles nesting beaches and interesting areas (refer **Table 6-2**).

² <http://www.environment.gov.au/webgis-framework/apps/ncva/ncva.jsf>

Table 6-3 Marine turtle BIAs within the NWMR

Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Green turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging inshore areas of Barrow Island Foraging at Montgomery Reef Foraging at Montebello Islands Foraging at Dixon Island Foraging around Ashmore Reef Foraging at Seringapatam Reef and Scott Reef Foraging in the De Grey River area to Bedout Island Foraging around the Islands between Cape Preston and Onslow and inshore of Barrow Island Foraging around Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging around Delambre Island Foraging in the Joseph Bonaparte Gulf Foraging in waters adjacent to James Price Point	Green turtles can migrate more than 2600 km between their feeding and nesting grounds. Individual turtles foraging in the same area do not necessarily take the same migration route (Limpus <i>et al.</i> , 1992). Ferreira <i>et al.</i> (2021) broadly identified two migratory corridors, one used by the NWS stock-Pilbara and another used by the NWS stock-Kimberley and the Scott-Browse stock with some overlap at the northern and southern extents respectively. This study showed that the foraging distribution of green turtles from two stocks in WA expands throughout north-west and northern Australian coastal waters, including the NT and Queensland.
Hawksbill turtle	✓	✓	✓	No mating BIA identified within the NWMR.	Foraging around the Lowendal Island group Foraging at Delambre Island Foraging around Dixon Island Foraging in the De Grey River area to Bedout Island Foraging around the islands between Cape Preston and	Individuals may migrate up to 2400 km between their nesting and foraging grounds (DSEWPAC, 2012a).

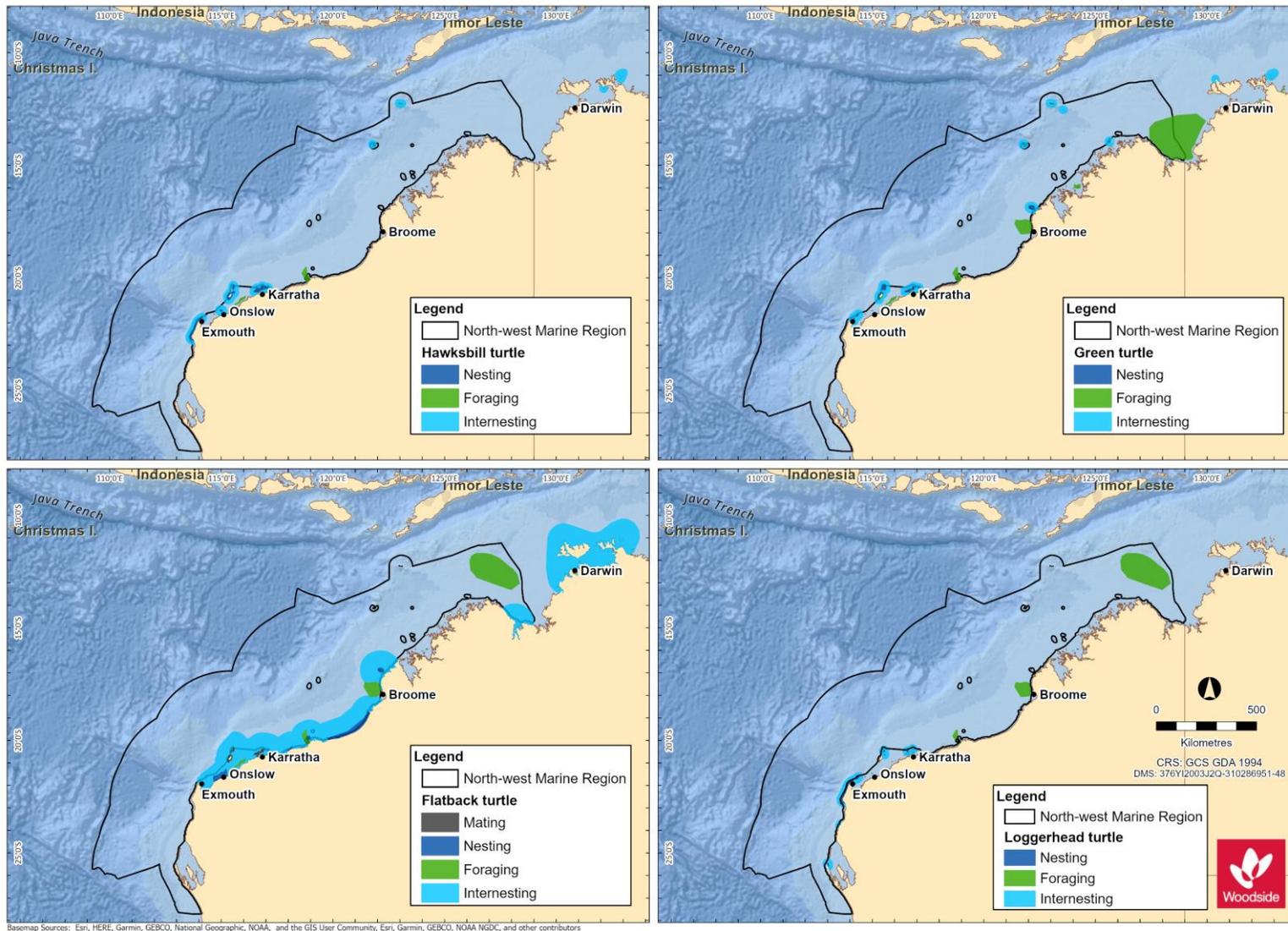
³ Migration BIA does not exist for Marine Turtles – general information provided.

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Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
					Onslow and inshore of Barrow Island Foraging around the islands of the Dampier Archipelago (to the west of the Burrup Peninsula) Foraging at Ashmore Reef	
Flatback turtle	✓	✓	-	Lacepede Islands Mating at Montebello Islands Mating at Dampier Archipelago (islands to the west of the Burrup Peninsula) Mating at Barrow Island A year-round internesting buffer biologically important area (BIA) of 80 km is located north and north-west of the Montebello Islands, extending 20 km further than the habitat critical to survival. However, use level for this BIA has been defined as very low (Commonwealth of Australia, 2017) and the habitat critical to survival internesting buffer is the legally recognised area of protection under the EPBC Act <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i> . Refer to the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a) for locations of seasonal 80 km internesting buffer BIAs for flatback turtles	Foraging at the islands between Cape Preston and Onslow and inshore of Barrow Island. Foraging at Montebello Islands Foraging at Dampier Archipelago (islands to the west of the Burrup Peninsula) Foraging at Legendre Island and Huay Island Foraging at Delambre Island Foraging in the Joseph Bonaparte Depression Foraging in waters adjacent to James Price Point	There is evidence that some flatback turtles undertake long-distance migrations between breeding and feeding grounds (Limpus <i>et al.</i> , 1983). However, flatback turtles generally do not have a pelagic phase to their lifecycle. Instead, hatchlings grow to maturity in shallow coastal waters thought to be close to their natal beaches (DSEWPAC, 2012a).

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Species	Woodside Activity Area			BIAs		
	Browse	NWS/S	NWC	Mating	Foraging	Migration ³
Loggerhead turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the De Grey River area to Bedout Island Foraging on the Western Joseph Bonaparte Depression Foraging in the waters adjacent to James Price Point	Adult loggerhead turtles dispersing from Dirk Hartog Island beaches (near Shark Bay) have remained within WA waters from southern WA to the Kimberley. Turtles dispersing from the North-west Cape–Muiron Islands nesting area have ranged north as far as the Java Sea and the north-western Gulf of Carpentaria, and to south-west WA (DSEWPAC, 2012).
Olive ridley turtle	✓	✓	-	No mating BIA identified within the NWMR	Foraging in the Western Joseph Bonaparte Depression and Gulf Foraging in the Dampier Archipelago (islands to the west of the Burrup Peninsula)	Migration routes and distances between nesting beaches and foraging areas are not known for Australian olive ridley turtles.



Basemap Sources: Esri, HERE, Garmin, GEBCO, National Geographic, NOAA, and the GIS User Community; Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

Figure 6-3 Marine turtle species BIAS within the NWMR

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6.4 Marine Turtle Summary for NWMR

Six of the seven marine turtle species occur within the Woodside activity areas. Across all three areas, globally significant breeding populations of four marine turtle species; the green, hawksbill, flatback and loggerhead turtle, have been recorded.

However, offshore waters do not represent biologically important habitat for marine turtles in any of the three Woodside activity areas. Isolated records of transient individuals (on post-nesting migration) are expected, but there is no evidence of important habitat or behaviours for marine turtles in offshore, open water environment of the NWS, in general.

6.4.1 Browse

The proposed Browse activity area includes major nesting areas that support globally significant breeding populations of two marine turtle species:

- the green turtle, including two distinct genetic stocks (Ashmore Reef and Scott Reef-Browse Island); and
- the flatback turtle, Cape Domett genetic stock.

Locations of habitat critical for each of the two species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green and flatback turtle are outlined in **Table 6-3** and **Figure 6-3**.

Table 6-4 Marine turtle key information for Browse activity area

Species / Genetic Stock	Key Information
Green Turtle	
Ashmore Reef Stock (G-AR)	<p>The G-AR stock nests in a localised area of the Indian Ocean in the Ashmore Reef and Cartier Island AMP areas. Population estimates are not available for Ashmore Reef, although annual breeding numbers are thought to be in the low hundreds (Whiting, 2000).</p> <p>Designated habitat critical for the G-AR stock are the nesting locations of Ashmore Reef and Cartier Reef, and an internesting buffer of 20 km radius around these rookeries, year-round with peak internesting activity occurring December to January (refer Table 6 of the Recovery Plan).</p> <p>Juvenile and adult turtles forage within the tidal/sub-tidal habitats of offshore islands and coastal waters with coral reef, mangrove, sand, rocky reefs, and mudflats where there are algal turfs or seagrass meadows present (Commonwealth of Australia, 2017).</p>
Scott Reef-Browse Island Stock (G-ScBr)	<p>The G-ScBr stock is a discrete unit known to nest at only two locations within the north-east Indian Ocean—Sandy Islet and Browse Island. There is currently very limited data available for the G-ScBr stock, therefore population numbers are not known.</p> <p>Designated habitat critical for the G-ScBr stock are the nesting locations of Sandy Islet and Browse Island, and an internesting buffer of 20 km radius around these rookeries, for the period November to March (refer Table 6 of the Recovery Plan).</p> <p>Surveys conducted at Scott Reef in 2006, 2008 and 2009 indicate that the summer months from late November to February are the preferred breeding season for green turtles at Sandy Islet (Guinea, 2009).</p> <p>Satellite tagging studies (Pendoley, 2005; Guinea, 2011) have provided an indication of the behaviour and migratory routes of adult green turtles leaving Scott Reef. Most animals appear to swim through South Reef lagoon and disperse toward the Western Australian mainland via two distinct post-nesting migration pathways; travelling east and north toward the Bonaparte Archipelago and then north along the coast to foraging areas in NT waters, or travelling south to Cape Leveque and then south along the coast to the Turtle Islands off the mouth of the De Grey River in the Pilbara region (Ferreira <i>et al.</i>, 2021).</p>

Species / Genetic Stock	Key Information
Flatback Turtle	
Cape Domett Stock (F-CD)	<p>Cape Domett is an important high density nesting area. Combined with a smaller site at Lacrosse Island, the F-CD stock is one of the largest flatback turtle stocks in Australia. Average nesting abundance at Cape Domett is estimated at 3250 females per year (Whiting <i>et al.</i>, 2008).</p> <p>Designated habitat critical for the F-CD stock are the nesting locations of Cape Domett and Lacrosse Island, and an interesting buffer of 60 km radius around these rookeries, year-round with peak interesting activity occurring July to September.</p> <p>Extending further than the habitat critical interesting buffer, an interesting buffer BIA of 80 km is located at Cape Domett and Lacrosse Island.</p>

6.4.2 North-west Shelf / Scarborough

The NWS / Scarborough activity area includes major nesting areas that support globally significant breeding populations of three marine turtle species, representing four discreet genetic stocks:

- the green turtle, NWS genetic stock;
- the hawksbill turtle, WA genetic stock; and
- the flatback turtle, South-west Kimberley stock and Pilbara genetic stocks.

Locations of habitat critical for each of the four species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green, hawksbill, and flatback are outlined in **Table 6-3** and **Figure 6-3**.

Table 6-5 Marine turtle key information for NWS / Scarborough activity area

Species / Genetic Stock	Key Information
Green Turtle	
NWS Stock (G-NWS)	<p>The G-NWS stock is one of the largest green turtle stocks in the world and the largest in the Indian Ocean. The G-NWS stock is estimated at approximately 20,000 individuals (DSEWPAC, 2012a) and the trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>Major rookeries of the G-NWS stock within the NWS / Scarborough activity area are located at Barrow Island and the Montebello Islands. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, November to March.</p>
Hawksbill Turtle	
Western Australia Stock (H-WA)	<p>The H-WA stock is the largest in the Indian Ocean. The majority of the nesting for this stock is located in the Pilbara. The Dampier Archipelago has the largest nesting aggregation recorded. In particular, Rosemary Island supports the most significant hawksbill turtle rookery in the WA region and one of the largest in the Indian Ocean; approximately 500-1000 females nest on the island annually, more than at any other WA rookery (Pendoley, 2005; Pendoley <i>et al.</i>, 2016).</p> <p>Major rookeries of the H-WA stock within the NWS / Scarborough activity area are located at Rosemary Island, Delambre Island and the Montebello Islands. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, October to February.</p>
Flatback Turtle	
South-west Kimberley Stock (F-swKim)	<p>The genetic relationship between this nesting aggregation and the Cape Domett and Pilbara stocks is currently under review. Population numbers of the F-swKim stock are unknown.</p> <p>Major rookeries of the F-swKim stock are located at Eighty Mile Beach and Eco Beach. These areas are designated habitat critical for the stock and include an interesting buffer of 60 km radius around these rookeries, October to March.</p>

Species / Genetic Stock	Key Information
Pilbara Stock (F-Pil)	<p>The extent of genetic relatedness of flatback turtles along the WA coast is currently under review. Population numbers of the F-Pil stock are unknown. This stock nests on many islands in the Pilbara and southern Kimberley, with major rookeries at Mundabullangana Beach, Delambre Island and Barrow Island. These areas are designated habitat critical for the F-Pil stock and include an interesting buffer of 60 km radius around these rookeries, October to March.</p> <p>Extending further than the habitat critical interesting buffer, a year-round interesting buffer BIA of 80 km is located north and north-west of the Montebello Islands. However, use level for this BIA has been defined as very low (Commonwealth of Australia, 2017) and the habitat critical interesting buffer is the legally recognised area of protection under the EPBC Act <i>Significant Impact Guidelines 1.1 – Matters of National Environmental Significance</i>.</p> <p>Post-nesting satellite tracking indicates foraging occurs along the WA coast in water shallower than 130 m and within 315 km of shore (Commonwealth of Australia, 2017).</p>

6.4.3 North-west Cape

The North-west Cape activity area includes major nesting areas that support globally significant breeding populations of two marine turtle species, representing two discreet genetic stocks:

- the green turtle, NWS genetic stock; and
- the loggerhead turtle, Western Australia genetic stock.

Locations of habitat critical for each of the two species are outlined in **Table 6-2** and **Figure 6-2**.

BIAs for the green and loggerhead turtles are outlined in **Table 6-3** and **Figure 6-3**.

A 2018 survey, including on-beach monitoring of the Muiron Islands and Ningaloo Coast from North-west Cape to Bungelup (Rob *et al.*, 2019), supports the concept that North-west Cape and the Muiron Islands are major important nesting areas for green and loggerhead turtles, as identified in the Recovery Plan (Commonwealth of Australia, 2017).

Table 6-6 Marine turtle key information for North-west Cape activity area

Species / Genetic Stock	Key Information
Green Turtle	
NWS Stock (G-NWS)	<p>The G-NWS stock is one of the largest green turtle stocks in the world and the largest in the Indian Ocean. The G-NWS stock is estimated at approximately 20,000 individuals (DSEWPAC, 2012a) and the trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>There is one major rookery of the G-NWS stock located within the North-west Cape activity area. Located on the mainland coast of the North-west Cape, this area is designated habitat critical for the stock and includes an interesting buffer of 20 km radius around the rookery, November to March.</p>
Loggerhead Turtle	
Western Australia Stock (LH-WA)	<p>The LH-WA stock is one of the largest in the world (Limpus, 2009). The trend for the stock is reported as stable (Commonwealth of Australia, 2017).</p> <p>Major rookeries of the LH-WA stock are located at Dirk Hartog Island, Muiron Islands and Gnaraloo Bay. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries, November to May.</p> <p>Dirk Hartog Island in the Shark Bay Marine Park, with an average of 122 nests per day over 2.1 km (Reinhold and Whiting, 2014), is recognised as the most important loggerhead turtle rookery in WA (Commonwealth of Australia, 2016; as cited in Rob <i>et al.</i>, 2019).</p>

6.5 Sea Snakes

Sea snakes are commonly found in the NWMR and NMR, but less so in the SWMR, and occupy three broad habitat types: shallow water coral reef and seagrass habitats, deepwater soft bottom habitats away from reefs, and surface water pelagic habitats (Guinea, 2007a).

There are 25 listed species of sea snake reported within or adjacent to the NWMR (Guinea, 2007a; Udyawer *et al.*, 2016), of which four are endemic to reef habitats in the remote parts of the region:

- dusky sea snake (*Aipysurus fuscus*);
- large headed sea snake (*Hydrophis pacificus*);
- short-nosed sea snake (*Aipysurus apraefrontalis*); and
- leaf-scaled sea snake (*Aipysurus foliosquama*).

The short-nosed sea snake and the leaf-scaled sea snake are listed threatened species (Critically Endangered) under the EPBC Act (**Table 6-7**).

There is currently limited knowledge about the ranges and distribution patterns of sea snake species in the NWMR, in addition to a lack of understanding of population status and threats. Recent findings of *A. apraefrontalis* and *A. foliosquama* in locations outside of their previously defined ranges have highlighted the lack of information on species distributions in the NWMR (Udyawer *et al.*, 2016). Udyawer *et al.* (2020) used a correlative modelling approach to understand habitat associations and identify suitable habitats for five sea snake species (*A. apraefrontalis*, *A. foliosquama*, *A. fuscus*, *A. l. pooleorum* and *A. tenuis*). Species-specific habitat suitability was modelled across 804,244 km² of coastal waters along the NWS, and the resulting habitat suitability maps enabled the identification of key locations of suitable habitat for these five species (refer **Table 6-6**).

No habitat critical to survival or BIAs for sea snake species have been identified in the NWMR. While the Ashmore Reef and Cartier Island AMPs have been recognised for their high diversity and density of sea snakes (DSEWPAC, 2012a), surveys have revealed a steep decline in sea snake numbers at Ashmore Reef (Guinea, 2007b; Lukoschek *et al.*, 2013). Leaf-scaled and short-nosed sea snakes have been absent from surveys at Ashmore Reef since 2001, despite an increase in survey intensity (Guinea, 2006, 2007b; Guinea and Whiting, 2005; Lukoschek *et al.*, 2013). The reason for the decline is unknown.

Table 6-7 Information on the two threatened sea snake species within the NWMR

Species	Preferred Habitat and Diet	Habitat Location
Short-nosed sea snake	Preferred habitat: Primarily on the reef flats or in shallow waters of the outer reef edges to depths of 10 m (Minton <i>et al.</i> , 1975). Typically, movement is restricted to within 50 m of reef flat habitat (Guinea and Whiting, 2005). Diet: Primarily fishes and eels.	The short-nosed sea snake has been recorded from Exmouth Gulf to the reefs of the Sahul Shelf, although most records come from Ashmore and Hibernia reefs (Guinea and Whiting, 2005). Key locations of suitable habitat: Ashmore Reef, Exmouth Gulf, Muiron Islands, Montebello Islands (Udyawer <i>et al.</i> , 2020).
Leaf-scaled sea snake	Preferred habitat: The leaf-scaled sea snake occurs in shallow protected areas of reef flats, typically in water depth less than 10 m. Diet: Primarily shallow water coral-associated wrasse, gudgeons, clinids and eels (McCosker, 1975; Voris, 1972; Voris and Voris, 1983)	The leaf-scaled sea snake has only been recorded at Ashmore and Hibernia reefs (Guinea and Whiting, 2005), indicating it has a very limited distribution. Key locations of suitable habitat: Ashmore Reef, Shark Bay, Exmouth Gulf, Barrow Island and Montebello Islands (Udyawer <i>et al.</i> , 2020).

6.6 Crocodiles

The salt-water crocodile (*Crocodylus porosus*) is a listed migratory species under the EPBC Act known to occur within the NWMR. The species is found in most major river systems of the Kimberley, including the Ord, Patrick, Forrest, Durack, King, Pentecost, Prince Regent, Lawley, Mitchell, Hunter, Roe and Glenelg rivers. The largest populations occur in the rivers draining into the Cambridge Gulf and the Prince Regent River and Roe River systems. There have also been isolated records in rivers of the Pilbara region, around Derby near Broome and as far south as Carnarvon on the mid-west coast.

No BIAs for salt-water crocodile have been identified in the NWMR.

7. MARINE MAMMALS

7.1 Regional Context

The offshore waters of WA include important habitat for marine mammals, including areas that support key life stages such as breeding, foraging, and migration. Of the 45 species of cetacean occurring in Australian waters, 27 species occur regularly in the waters of the NWMR, nine species in the waters of the NMR and 33 species in the SWMR. The waters of the NWMR and the NMR also support significant populations of dugong (DSEWPAC, 2012a, c).

The NWMR is an important migratory pathway between feeding grounds in the Southern Ocean and breeding grounds in tropical waters of the NWMR for several cetacean species (DSEWPAC, 2012a). Numerous large mysticetes (baleen whale) species, in particular the humpback whale, are known to utilise the region for migration and calving, and the pygmy blue whale for foraging and as a migration pathway between southern feeding and northern breeding/feeding areas, north of the equator.

The SWMR is an important area for numerous marine mammal species including pinniped species, large, migratory whale species and resident coastal whale and dolphin species (DSEWPAC, 2012b).

The NMR and adjacent areas are important for several species of cetacean, particularly inshore dolphin species. These species, and other marine mammals, rely on the waters of the NMR and adjacent coastal areas for breeding and foraging. However, there is little knowledge of the seasonal movements, migrations and breeding seasonality for many of the marine mammal species in the NMR due to lack of extensive surveys (DSEWPAC, 2012c).

Table 7-1 outlines the threatened and migratory marine mammal species that may occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

Table 7-1 Marine mammal species identified by the EPBC Act PMST as occurring within the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
Cetaceans - Mysticeti						
<i>Balaenoptera musculus</i>	Blue whale	Endangered	Migratory	Cetacean	Endangered	Conservation Management Plan for the Blue Whale - A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2015-2025 (Commonwealth of Australia, 2015a)
<i>Eubalaena australis</i>	Southern right whale	Endangered	Migratory	Cetacean	Vulnerable	Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> 2011-2021 (DSEWPAC, 2012d)
<i>Balaenoptera borealis</i>	Sei whale	Vulnerable	Migratory	Cetacean	Endangered	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
<i>Megaptera novaeangliae</i>	Humpback whale	Vulnerable	Migratory	Cetacean	Conservation dependent	Conservation Advice <i>Megaptera novaeangliae</i> humpback whale (Threatened Species Scientific Committee, 2015b)
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	Migratory	Cetacean	Endangered	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)
<i>Balaenoptera edeni</i>	Bryde's whale	N/A	Migratory	Cetacean	N/A	N/A
<i>Balaenoptera bonaerensis</i>	Antarctic minke whale	N/A	Migratory	Cetacean	N/A	N/A
Cetaceans - Odontoceti						
<i>Physeter macrocephalus</i>	Sperm whale	N/A	Migratory	Cetacean	Vulnerable	N/A
<i>Orcinus orca</i>	Killer whale	N/A	Migratory	Cetacean	N/A	N/A
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	N/A	Migratory	Cetacean	Priority	N/A
<i>Sousa chinensis</i>	Indo-Pacific humpback dolphin	N/A	Migratory	Cetacean	Priority	N/A

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Tursiops aduncus</i>	Spotted bottlenose dolphin (Arafura/Timor Sea populations)	N/A	Migratory	Cetacean	N/A	N/A
Sirenians and Pinnipeds						
<i>Dugong dugon</i>	Dugong	N/A	Migratory	Marine	Other protected fauna	N/A
<i>Neophoca cinerea</i>	Australian sea lion	Endangered	N/A	Marine	Vulnerable	Recovery Plan for the Australian Sea Lion (<i>Neophoca cinerea</i>) 2013 (DSEWPAC, 2013a) Conservation Advice <i>Neophoca cinerea</i> Australian Sea Lion (Threatened Species Scientific Committee, 2020a) (in effect under the EPBC Act from 23-Dec-2020)

7.2 Cetaceans in the NWMR

Cetaceans are generally widely distributed and highly mobile. In general, distribution patterns reflect seasonal feeding areas, characterised by high productivity, and migration routes associated with reproductive patterns. The NWMR is thought to be an important migratory pathway between feeding grounds in the Southern Ocean and breeding grounds in tropical waters for several cetacean species (DSEWPAC, 2012a).

From the Protected Matters search, 34 EPBC Act listed species were recorded as potentially occurring or having habitat within the NWMR (**Appendix A**). Of those, 12 cetacean species are listed as threatened and/or migratory, including baleen whales, toothed whales and dolphins that occur within the NWMR (**Table 7-2**).

7.3 Dugongs in the NWMR

The dugong is listed as migratory under the EPBC Act. Dugongs inhabit seagrass meadows in coastal waters, estuarine creeks and streams, and reef systems (DSEWPAC, 2012a).

Some of the coastal waters adjacent to the NWMR support significant populations of dugongs, including Shark Bay, Exmouth Gulf, in and adjacent to Ningaloo Reef, in coastal waters along the Kimberley coast, and on the edge of the continental shelf at Ashmore Reef (DEWHA, 2008).

Although the patterns of dugong movement in WA are not well understood, it is thought that dugongs move in response to availability of seagrass (Marsh *et al.*, 1994; Preen *et al.*, 1997) and water temperature.

There are a number of BIAs for dugong within and adjacent to waters of the NWMR (refer **Section 7.5**).

7.4 Pinnipeds in the NWMR

The Australian sea lion is listed as a species that may occur, or may have habitat within the NWMR (Protected Matters search - **Appendix A**). It is included here as the Australian sea lion is the only pinniped endemic to Australia (Strahan, 1983) and has been recorded within the southern extent of the NWMR at Shark Bay, WA (Kirkwood *et al.*, 1992). The most northern known breeding colony is at the Houtman Abrolhos Islands in the SWMR. The Australian sea lion's breeding range extends from the Houtman Abrolhos Islands, WA to The Pages Island, east of Kangaroo Island, SA. The Australian sea lion was listed as endangered in 2020 (Threatened Species Scientific Committee, 2020a). An assessment of the status and trends in abundance of this endemic, coastal pinniped species (Goldsworthy *et al.* 2021) documented an overall reduction in pup abundance over three generations, providing strong evidence that the species meets IUCN endangered criteria.

There are no BIAs for the Australian sea lion in the NWMR.

Table 7-2 Information on the threatened/migratory marine mammal species within the NWMR

Species	Key Information
Baleen whales (Mysticeti)	
Humpback whale	<p>In Australian waters two genetically distinct populations migrate annually along the west (Group IV) and east coasts (Group V) between May and November. In WA, the migration pathway for the Group IV population (also known as Breeding Stock D) extends from Albany to the Kimberley coastline, passing through the NWMR (Threatened Species Scientific Committee, 2015b). Since the 1982 moratorium on commercial whaling population numbers have recovered significantly; from approximately 2000 to 3000 individuals in 1991, to between 19,200–33,850 individuals in 2008 (Bannister and Hedley, 2001; Bejder <i>et al.</i>, 2019; Hedley <i>et al.</i>, 2011). Aerial surveys off the WA coast undertaken between 2000 and 2008 produced a population estimate for the Group IV population of 26,100 individuals (CI 20,152–33,272) in 2008 (Salgado Kent <i>et al.</i>, 2012). Current population growth for the Group IV population is estimated to be between 9.7 and 13% per annum (Threatened Species Scientific Committee, 2015b). Using the Salgado-Kent <i>et al.</i> (2012) estimate of 26,100 individuals and an annual population growth rate of ~10%, current population size could be in excess of 75,000 individuals (Woodside, 2019).</p> <p>The Group IV population migrates northward from their Antarctic feeding grounds around May each year, reaching the NWMR around early June. The southward migration subsequently starts in mid-September, around the time of breeding and calving (typically August to September) (Threatened Species Scientific Committee, 2015b). Within the NWMR there are key calving areas between Broome and the northern end of Camden Sound, and resting areas in the southern Kimberley region, Exmouth Gulf and Shark Bay. In particular, high numbers of humpback whales are observed in Camden Sound and Pender Bay from June to September each year (Threatened Species Scientific Committee, 2015b). There are reports of neonates further south, suggesting that the calving areas may be poorly defined. Aerial photogrammetric surveys in 2013 and 2015 recorded large numbers of humpback whale calves along North-west Cape, with estimated minimum relative calf abundance of 463–603 in 2013 and 557–725 in 2015 (Irvine <i>et al.</i>, 2018). The majority of calves sighted in both years (85% in 2013; 94% in 2015) were neonates, and these observations indicate that a minimum of approximately 20% of the expected number of calves of this population are born near, or south of, North-west Cape. Thus, the calving grounds for the Group IV population extend south from Camden Sound to at least North-west Cape, 1000 km south-west of the currently recognized calving area (Irvine <i>et al.</i>, 2018).</p> <p>There are BIAs for migration and breeding and calving for the humpback whale along the WA coast and within the NWMR (refer Table 7-3 and Figure 7-1).</p>
Blue whale	<p>There are two recognised sub-species of blue whale in the Southern Hemisphere, both of which are recorded in Australian waters. These are the southern (or 'true') blue whale (<i>Balaenoptera musculus</i>) and the 'pygmy' blue whale (<i>Balaenoptera musculus breviceauda</i>) (Commonwealth of Australia, 2015a). In general, southern blue whales occur in waters south of 60°S and pygmy blue whales occur in waters north of 55°S (i.e. not in the Antarctic). On this basis, nearly all blue whales sighted in the NWMR are likely to be pygmy blue whales.</p> <p>The East Indian Ocean (EIO) pygmy blue whale population is seasonally distributed from Indonesia (a potential breeding ground) to south-west of Australia and east across the Great Australian Bight and Bonney Upwelling to beyond the Bass Strait (Blue Planet Marine, 2020). Migration seems to be variable, with some individuals appearing as resident to areas of high productivity and others undertaking migrations across long distances (Commonwealth of Australia, 2015a). McCauley <i>et al.</i> (2018) describe three migratory stages around Australia for the EIO pygmy blue whale population: a 'southbound migratory stage' where whales travel southwards from Indonesian waters offshore from the WA coastline, mostly from October to December but possibly into January of the following year; a protracted 'southern Australian stage' (January to June) where animals spread across southern waters of the Indian Ocean and south of Australia; and a 'northbound migratory stage' (April to August) where animals travel north back to Indonesia again.</p> <p>There are currently insufficient data to accurately estimate population numbers of the pygmy blue whale in Australian waters (Blue Planet Marine, 2020; Commonwealth of Australia, 2015a). There are, however, two estimates of population size of the EIO pygmy blue whale for WA. McCauley and Jenner (2010) calculated the population to be between 662 and 1559 individuals in 2004 based on passive acoustics (whale vocalisations), and Jenner <i>et al.</i> (2008) (based on photographic mark and recapture) calculated between 712 and 1754 individuals, but both estimates did not account for animals</p>

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Species	Key Information
	<p>travelling further west into the Indian Ocean (McCauley <i>et al.</i>, 2018). More recent passive acoustic data estimates a 4.3% growth rate that applies to the proportion of EIO pygmy blue whales seasonally present in offshore water of the south-eastern Australia and may not reflect the full population but does imply an increasing population (McCauley <i>et al.</i>, 2018).</p> <p>The pygmy blue whale is typically present in the Perth Canyon from November to June, with an observed peak between March and May (Commonwealth of Australia, 2015a; Blue Planet Marine, 2020). The pygmy blue whale feeds in the Perth Canyon at depths of 200 to 300 m, which overlaps the typical distribution of krill (200–500 m water depth (day) to surface (night) (McCauley <i>et al.</i>, 2004; Commonwealth of Australia, 2015a). Other possible feeding grounds off the WA coast include the wider area around the Perth Canyon, and possible foraging areas off the Ningaloo Coast and at Scott Reef (Commonwealth of Australia, 2015a).</p> <p>Refer Table 7-3 and Figure 7-2 for the location and type of BIAs for blue whales in the NWMR. There is a migratory BIA for the pygmy blue whale within WA waters, which extends for most of the length of the NWMR within offshore waters.</p>
Bryde's whale	<p>The Bryde's whale is the least migratory of its genus and is restricted geographically from the equator to approximately 40°N and S, or the 20° isotherm (Bannister <i>et al.</i>, 1996). The species is known to exhibit inshore and offshore forms in other international locations that vary in morphology and migratory behaviours (Bannister <i>et al.</i>, 1996). This appears to also be the case within Australian waters. Bryde's whales have been identified as occurring in both oceanic and inshore waters, with the only key localities recognised in WA being in the Houtman Abrolhos Islands and north of Shark Bay (Bannister <i>et al.</i>, 1996). Data suggests offshore whales migrate seasonally, heading towards warmer tropical waters during the winter; however, information about migration within the NWMR is not well known (McCauley and Duncan, 2011). McCauley (2011) detected Bryde's whales using acoustic loggers deployed in and around Scott Reef from 2006 to 2009. Other acoustic logger data of Bryde's whale vocalisations recorded between Ningaloo and north of Darwin showed no apparent trends or seasonality (McCauley, 2011).</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Southern right whale	<p>The southern right whale occurs primarily in waters between about 20°S and 60°S and moves from high latitude feeding grounds in summer to warmer, low latitude, coastal locations in winter (Bannister <i>et al.</i>, 1996). Southern right whales aggregate in calving areas along the south coast of WA outside of the NWMR. However, there have been sightings in waters of the NWMR as far north as Ningaloo (Bannister and Hedley, 2001), and a stranding record exists for the far north Kimberley coast (ALA, 2020). Southern right whale calving grounds are found at mid to lower latitudes and are occupied during the austral winter and early-mid spring. They are regularly present on the southern Australian coast from about mid-May to mid-November, and peak periods for mating are from mid-July through August. Mating occurs within these breeding grounds as evidenced by many observations of intromission and mating behaviours. Southern right whales in south-western Australia appear to be increasing at the maximum biological rate but there is limited evidence of increase in south-eastern Australian waters (DSEWPAC, 2012d).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
Antarctic minke whale	<p>The Antarctic minke whale is distributed worldwide and has been recorded off all Australian states (but not in the NT), feeding in cold waters and migrating to warmer waters to breed. It is thought that the Antarctic minke whale migrates up the WA coast to about 20°S to feed and possibly breed (Bannister <i>et al.</i>, 1996); however, detailed information about timing and location of migrations and breeding grounds within the NWMR is not well known. In the high latitudinal winter breeding grounds in other regions, the species appears to be distributed off the continental shelf edge. No population estimates are available for Antarctic minke whales in Australian waters.</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Sei whale	<p>The sei whale is a baleen whale with a worldwide oceanic distribution and is expected to seasonally migrate between low latitude wintering areas and high latitude summer feeding grounds (Bannister <i>et al.</i>, 1996; Prieto <i>et al.</i>, 2012). There are no known mating or calving areas in Australian waters. The species has a preference for deep waters, typically occurs in oceanic basins and continental slopes (Prieto <i>et al.</i>, 2012), and exhibits a migration pathway influenced by seasonal feeding and breeding patterns. Sei whales have been infrequently recorded in Australian waters (Bannister <i>et al.</i>, 1996). Reliable estimates of the sei whale population size in Australian waters are currently not possible due to a lack of dedicated surveys and their elusive characteristics. Similarly, the extent of occurrence and area of occupancy of sei whales in Australian waters cannot be calculated due to the</p>

Species	Key Information
	<p>rarity of sighting records. They will typically travel in small pods of three to five individuals, with some segregation by age, sex and reproductive status. Calving grounds are presumed to exist in low latitudes with mating and calving potentially occurring during winter months (Threatened Species Scientific Committee, 2015a).</p> <p>There are no known mating or calving areas in Australian waters, and there are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Fin whale	<p>The fin whale is a large baleen whale distributed worldwide. Fin whales migrate annually between high latitude summer feeding grounds and lower latitude over-wintering areas (Bannister <i>et al.</i>, 1996) and follow oceanic migration paths. The species is uncommonly encountered in coastal or continental shelf waters. Australian Antarctic waters are important feeding grounds for fin whales but there are no known mating or calving areas in Australian waters (Morrice <i>et al.</i>, 2004). The species has been observed in groups of six to 10 individuals, as well as in pairs and alone (Threatened Species Scientific Committee, 2015c). Accurate distribution patterns are not known within Australian waters and the majority of data are from stranding events.</p> <p>Fin whales have been recorded vocalising off the Perth Canyon, WA, between January and April 2000 (McCauley <i>et al.</i>, 2000). It is currently not possible to accurately estimate the population size of fin whales in Australian waters predominantly due to the species' behaviour and local ecology, as the proportion of time they spend at the surface varies greatly depending on these factors. In addition, natural fluctuations of fin whales in Australian waters are unknown; however, long-range movements do appear to be prey-related. A recent study by Aulich <i>et al.</i> (2019) used passive acoustic monitoring as a tool to identify the migratory movements of fin whales in Australian waters. On the west coast, the earliest arrival of these animals occurred at Cape Leeuwin in April, and between May and October they migrated along the WA coastline to the Perth Canyon, which likely acts as a way-station for feeding (Aulich <i>et al.</i>, 2019). Some whales were found to continue migrating as far north as Dampier (Aulich <i>et al.</i>, 2019).</p> <p>There are no identified BIAs for this species in the National Conservation Values Atlas.</p>
Toothed whales (Odontoceti)	
Sperm whale	<p>Sperm whales are the largest of the toothed whales and are distributed worldwide in deep waters (greater than 200 m) off continental shelves and sometimes near shelf edges (Bannister <i>et al.</i>, 1996). The species tends to inhabit offshore areas at depths of 600 m or more and is uncommon in waters less than 300 m deep (Ceccarelli <i>et al.</i>, 2011). There is limited information about sperm whale distribution in Australian waters, however, they are usually found in deep offshore waters, with more dense populations close to continental shelves and canyons. In the open ocean, there is a generalised movement of sperm whales southwards in summer, and corresponding movement northwards in winter, particularly for males. Detailed information about the distribution and migration patterns of sperm whales off the WA coast is not available. Females with young may reside within the NWMR all year round, males may migrate through the region and the species may be associated with canyon habitats (Ceccarelli <i>et al.</i>, 2011).</p> <p>Sperm whales have been recorded in deep waters off North-west Cape and appear to occasionally venture into shallower waters in other areas. Twenty-three (23) sightings of sperm whales (variable pod sizes, ranging from one to six animals) were recorded by marine mammal observers (MMOs) during the North West Cape MC3D marine seismic survey (December 2016 to April 2017) (Woodside, 2020). These animals were observed in deep, continental slope waters of the Montebello Saddle (maximum distance of approximately 90 km from North-west Cape), and the waters overlying the Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF. The deep waters above the gully/saddle on the inner edge of the plateau (the Montebello Saddle) are thought to be important for sperm whales that may feed in the region (based on 19th Century whaling records; Townsend, 1935).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
Killer whale	<p>The preferred habitat of killer whales includes oceanic, pelagic and neritic (relatively shallow waters over the continental shelf) regions, in both warm and cold waters. Killer whales appear to be more common in cold, deep waters; however, they have been observed along the continental slope and shelf, particularly near seal colonies, as well as in shallow coastal areas of WA (Bannister <i>et al.</i>, 1996; Thiele and Gill, 1999). The total number of killer whales in Australian waters is unknown, however, it may be that the total number of mature animals within waters around the continent is less than 10,000. Killer whales are known to make seasonal movements, and probably follow regular migratory routes, but no information is available for the</p>

Species	Key Information
	<p>species in Australian waters. Killer whales are top-level carnivores, and there are reports from around Australia of attacks on dolphins, juvenile humpback whales, blue whales, sperm whales, dugongs and Australian sea lions (Bannister <i>et al.</i>, 1996). Killer whales are known to target humpback whales, particularly calves, off Ningaloo Reef during the humpback southern migration season (Pitman <i>et al.</i>, 2015). Overall, observations suggest that humpback calves are a predictable, plentiful, and readily taken prey source for killer whales off Ningaloo Reef for at least five months of the year. Additionally, there are records of killer whales attacking dugongs in Shark Bay (Anderson and Prince, 1985). However, there are no recognised key localities or important habitats for killer whales within the NWMR (DSEWPAC, 2012a). There are no identified BIAs for this species in the NWMR.</p>
Australian snubfin dolphin	<p>Stranding and museum specimen records indicate that Australian snubfin dolphins occur only in waters off northern Australia, from approximately Broome on the west coast to the Brisbane River on the east coast (Parra <i>et al.</i>, 2002). Aerial and boat-based surveys indicate that Australian snubfin dolphins occur mostly in protected shallow waters close to the coast, and close to river and creek mouths (Parra, 2006; Parra <i>et al.</i>, 2006; Parra <i>et al.</i>, 2002). Within the NWMR, species has been found in the shallow coastal waters and estuaries along the Kimberley coast. Beagle and Pender bays on the Dampier Peninsula, and tidal creeks around Yampi Sound and between Kuri Bay and Cape Londonderry are important areas for Australian snubfin dolphins (DEWHA, 2008). Roebuck Bay has generally been considered the south-western limit of snubfin dolphin distribution across northern Australia, but the species has been recorded in Port Hedland harbour, the Dampier Archipelago, Montebello Islands, Exmouth Gulf and off North-west Cape (Allen <i>et al.</i>, 2012). A first comprehensive catalogue of snubfin dolphin sightings has been compiled for the Kimberley, north-west Western Australia (Bouchet <i>et al.</i> 2021) and documented that snubfin dolphins are consistently encountered in shallow water (<21 m depth) close to (<15 km) freshwater inputs with high detection rates in known hotspots such as Roebuck Bay and Cygnet Bay as well as suitable coastal habitat in the wider Kimberley region. Refer Table 7-3 and Figure 7-3 for the location and type of BIAs for Australian snubfin dolphins in the NWMR.</p>
Indo-Pacific humpback dolphin (Australian humpback dolphin)	<p>Previously included with <i>Sousa chinensis</i>, the Australian humpback dolphin (<i>S. sahalensis</i>) was elevated to a species in 2014. <i>S. chinensis</i> is now applied for humpback dolphins in the eastern Indian and western Pacific Oceans and <i>S. sahalensis</i> for humpback dolphins in the waters of the Sahul Shelf from northern Australia to southern New Guinea (Jefferson and Rosenbaum, 2014). The Australian humpback dolphin is listed as <i>S. chinensis</i> under EPBC Act.</p> <p>The Australian humpback dolphin (referred to as 'humpback dolphin' hereafter) inhabits the tropical/subtropical waters of the Sahul Shelf across northern Australia and southern Papua New Guinea (Jefferson and Rosenbaum, 2014). Based on historical stranding data, museum specimens and opportunistic sightings collected during aerial and boat-based surveys for other fauna it has been inferred that humpback dolphins occur from the WA/NT border south-west to Shark Bay (Hanf <i>et al.</i>, 2016). Allen <i>et al.</i> (2012) suggested that humpback dolphins use a range of inshore habitats, including both clear and turbid coastal waters across northern WA. The waters surrounding North-west Cape are an important area for the species. Boat-based surveys up to 5 km out from the coast (Brown <i>et al.</i>, 2012) recorded humpback dolphins from 0.3 to 4.5 km away from shore and in depths ranging from 1.2 to 20 m, with a mean of ~8 m. Other studies around North-west Cape, surveying waters up to 5 km from the coast, recorded humpback dolphins in water depths of up to 40 m (Hanf <i>et al.</i>, 2016). Based on density, site fidelity and residence patterns, North-west Cape is clearly an important habitat toward the south-western limit of this species' range (Hunt <i>et al.</i>, 2017).</p> <p>Aerial surveys targeting dugongs over the western Pilbara have recorded humpback dolphins more than 60 km from the mainland in shallow shelf waters (i.e. <30 m deep) near Barrow Island and the western Lowendal Islands (Hanf, 2015). The species has also been recorded in fringing coral reef and shallow, sheltered sandy lagoons at the Montebello Islands (Raudino <i>et al.</i>, 2018). Over the past ten years a number of studies have focused on populations of humpback dolphins along the Kimberley coast, including Roebuck Bay, the Dampier Peninsula, Cone Bay, Yampi Sound, Prince Regent River and the Cambridge Gulf (Brown <i>et al.</i>, 2016).</p> <p>Refer Table 7-3 and Figure 7-4 for the location and type of BIAs for Indo-Pacific humpback dolphins in the NWMR.</p>
Indo-Pacific bottlenose dolphin (Spotted bottlenose dolphin)	<p>There are four known sub-populations of spotted bottlenose dolphins, of which the Arafura/Timor Sea populations were identified as potentially occurring within the NWMR. The species is restricted to inshore areas such as bays and estuaries, nearshore waters, open coast environments, and shallow offshore waters including coastal areas around oceanic islands, from Shark Bay to the western edge of the Gulf of Carpentaria. The species</p>

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Species	Key Information
	forages in a range of habitats but is generally restricted to water depths of less than 200 m (DSEWPAC, 2012a). Important foraging/breeding areas include the shallow coastal waters and estuaries along the Kimberley coast and Roebuck Bay. Refer Table 7-3 the location and type of BIAs for spotted bottlenose dolphins in the NWMR.
Sirenians	
Dugong	Dugongs are distributed along the WA coast throughout the Gascoyne, Pilbara and Kimberley. Specific areas supporting dugong populations include: Shark Bay; Ningaloo and Exmouth Gulf; the Pilbara coast (Exmouth Gulf to De Grey River [Marsh <i>et al.</i> , 2002]); and Eighty Mile Beach and the Kimberley coast, including Roebuck Bay (Brown <i>et al.</i> , 2014). Dugong distribution is correlated with the seagrass habitats upon which it feeds, although water temperature has also been correlated with dugong movements and distribution (Preen <i>et al.</i> , 1997; Preen, 2004). Dugongs are known to migrate between seagrass habitats (hundreds of kilometres) (Sheppard <i>et al.</i> , 2006), and in Shark Bay they exhibit seasonal movements as a behavioural thermoregulatory response to winter water temperatures (Holley <i>et al.</i> , 2006; Marsh <i>et al.</i> , 2011). Aerial surveys since the mid-1980s indicate that dugong populations are now stable at a regional scale in Shark Bay and in the Exmouth/Ningaloo Reef. Refer Table 7-3 and Figure 7-5 for the location and type of BIAs for dugong in the NWMR.
Pinnipeds	
Australian sea lion	<p>The Australian sea lion is the only endemic pinniped (true seals, fur seals and sea lions) in Australian waters. It is a member of the Otariidae (eared seals) family. The birth interval in Australian sea lions is around 17–18 months. The Australian sea lion is unique among pinnipeds in being the only species that has a non-annual breeding cycle that is also temporally asynchronous across its range (DSEWPAC, 2013a; Threatened Species Scientific Committee, 2020a). This means the breeding period (copulation and birthing) in one colony will occur at different times to breeding in another colony. The Australian sea lion is considered to be a specialised benthic forager—that is, it feeds primarily on the sea floor. Studies have shown that the species will eat a range of prey, including fish, cephalopods (squid, cuttlefish and octopus), sharks, rays, rock lobsters and penguins (DSEWPAC, 2013a; Threatened Species Scientific Committee, 2020a). The Australian sea lion feeds on the continental shelf, most commonly in depths of 20–100 m, and they typically travel up to about 60 km from their colony on each foraging trip, with a maximum distance of around 190 km when over shelf waters.</p> <p>The current breeding distribution of the Australian sea lion extends from the Houtman Abrolhos Islands on the west coast of WA to the Pages Islands in SA. Sites for the 58 breeding colonies occurring in WA and SA are designated as habitat critical to the survival of the species under the Recovery Plan for the Australian sea lion (DSEWPAC, 2013a). Of these, four are located in the SWMR along the west coast of WA: Abrolhos Islands (Easter Group), Beagle Island, North Fisherman Island and Buller Island. There are also a number of foraging BIAs for both males and females along the west coast, extending from the Abrolhos Islands south to Rockingham.</p> <p>There is no designated habitat critical to survival or identified BIAs for this species in the NWMR. Figure 7-6 shows the foraging BIAs for the Australian sea lion to the south of the NWMR.</p>

7.5 Biological Important Areas in the NWMR

BIAs representing important life cycle stages and behaviours for six species of marine mammal in the NWMR: the humpback whale, the pygmy blue whale, Australian snubfin dolphin, Australian humpback dolphin, spotted bottlenose dolphin and dugong, are presented in **Table 7-3**.

Table 7-3 Marine mammal BIAs within the NWMR

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
Humpback whale ¹	✓	✓	✓	Shark Bay Exmouth Gulf (north migration – early June) (south migration – late Aug to Oct) Southern Kimberley region	No foraging BIA identified within the NWMR	Kimberley coast from the Lacepede Islands to north of Camden Sound (mid Aug – early Sept)	Core calving in waters off the Kimberley coast from the Lacepede Islands to north of Camden Sound (mid Aug – early Sept)	Southern border of the NWMR to north of the Kimberley (arrive June)
Blue whale and Pygmy blue whale ^{1 2}	✓	✓	✓	No resting BIA identified within the NWMR	Possible foraging areas off Ningaloo and Scott Reef	No breeding BIA identified within the NWMR	No calving BIA identified within the NWMR	Augusta to Derby. Along the shelf edge at depths of 500 m to 1000 m; appear close to Ningaloo coast Montebello Islands area on southern migration (north: April – Aug) (south: Oct – late Dec)
Australian snubfin dolphin ¹	✓	✓	-	No resting BIA identified within the NWMR	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay Anjo Peninsula Napier	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay, Anjo Peninsula Napier Broome Bay Deep Bay Prince Regent River King George River Cape Londonderry	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound Talbot Bay Maret Islands Bigge Island Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay Anjo Peninsula Napier Broome Bay Deep Bay Prince Regent River	No migration BIA identified within the NWMR

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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
					Broome Bay Deep Bay Prince Regent River King George River Cape Londonderry Ord River	Ord River	King George River Cape Londonderry Ord River	
Indo-Pacific humpback dolphin	✓	✓	-	No resting BIA identified within the NWMR	Roebuck Bay Willie Creek Prince Regent River King Sound (north) Yampi Sound Talbot Bay Walcott Inlet Doubtful Bay Deception Bay Augustus Island Maret Islands Bigge Island King Sound, southern sector Vansittart Bay, Anjo Peninsula	Roebuck Bay Willie Creek Prince Regent River King Sound (north) Yampi Sound Talbot Bay Walcott Inlet Doubtful Bay Deception Bay Augustus Island	Roebuck Bay Willie Creek Prince Regent River	No migration BIA identified within the NWMR
Spotted bottlenose dolphin	✓	✓	✓	No resting BIA identified within the NWMR	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound	Roebuck Bay Cambridge Gulf Camden Sound area King Sound (south) King Sound (north) Yampi Sound	No calving BIA identified within the NWMR	No migration BIA identified within the NWMR

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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging	Breeding	Calving	Migration
Dugong ¹	✓	✓	✓	No resting BIA identified within the NWMR	Exmouth Gulf Ningaloo Reef Shark Bay Roebuck Bay Dampier Peninsula	No breeding BIA identified within the NWMR	Exmouth Gulf Ningaloo Reef Shark Bay	Not listed as a migratory species

¹ DSEWPAC (2012a)

² Commonwealth of Australia (2015a)

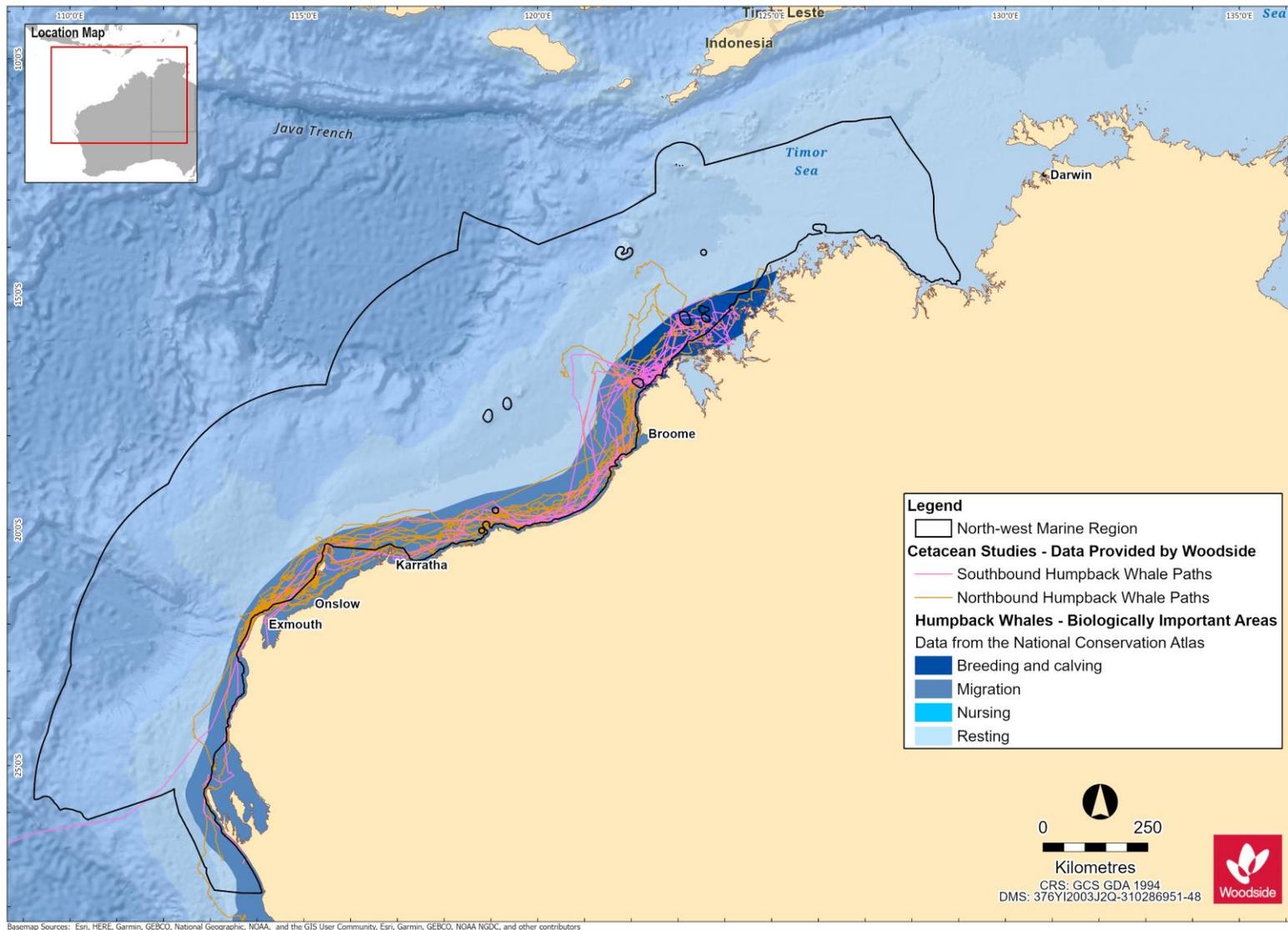


Figure 7-1 Humpback whale BIAs for the NWMR and tagged tracks for north and south bound migrations

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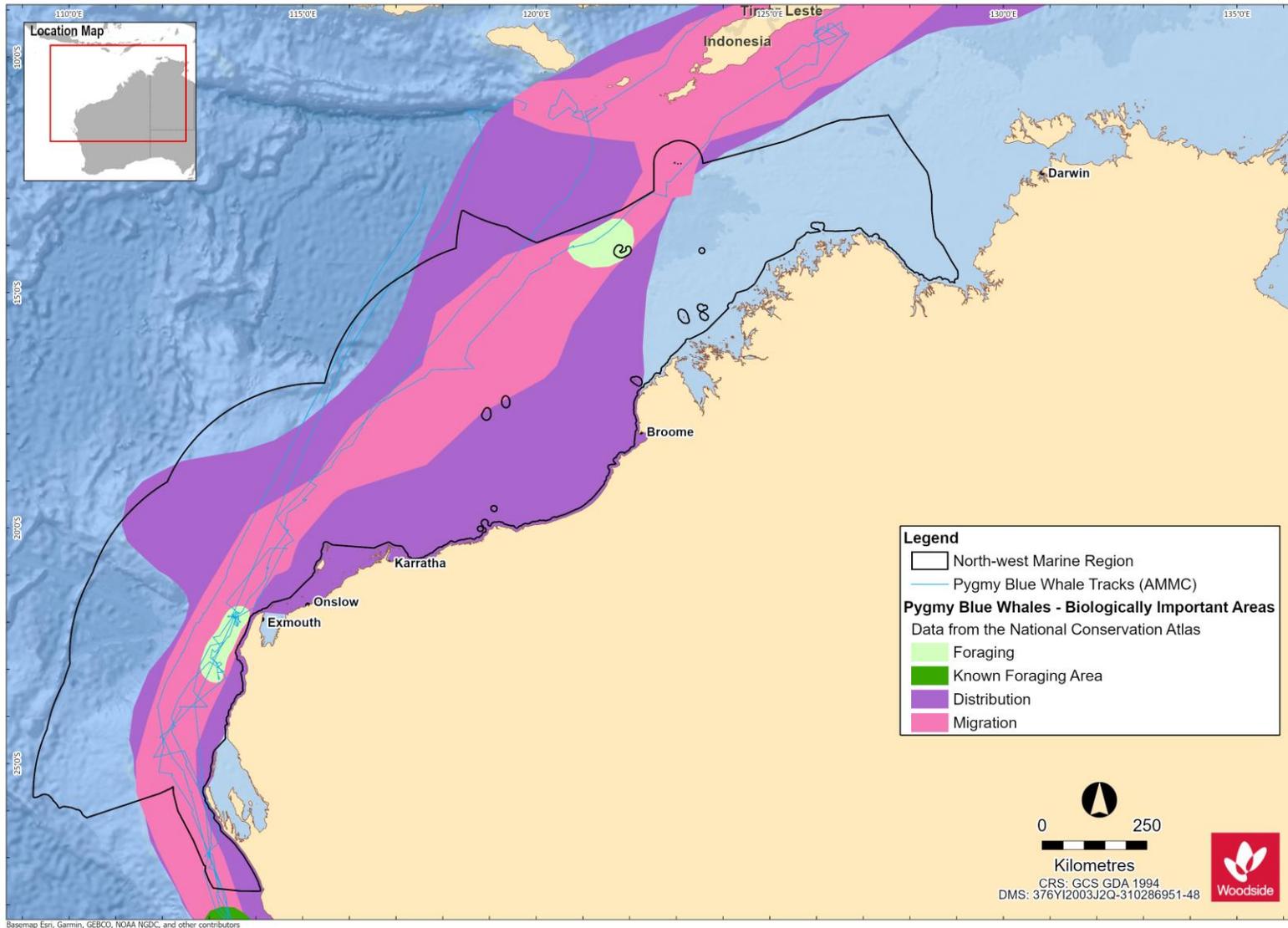


Figure 7-2 Pygmy blue whale BIAs for the NWMR and tagged whale tracks for northbound migration

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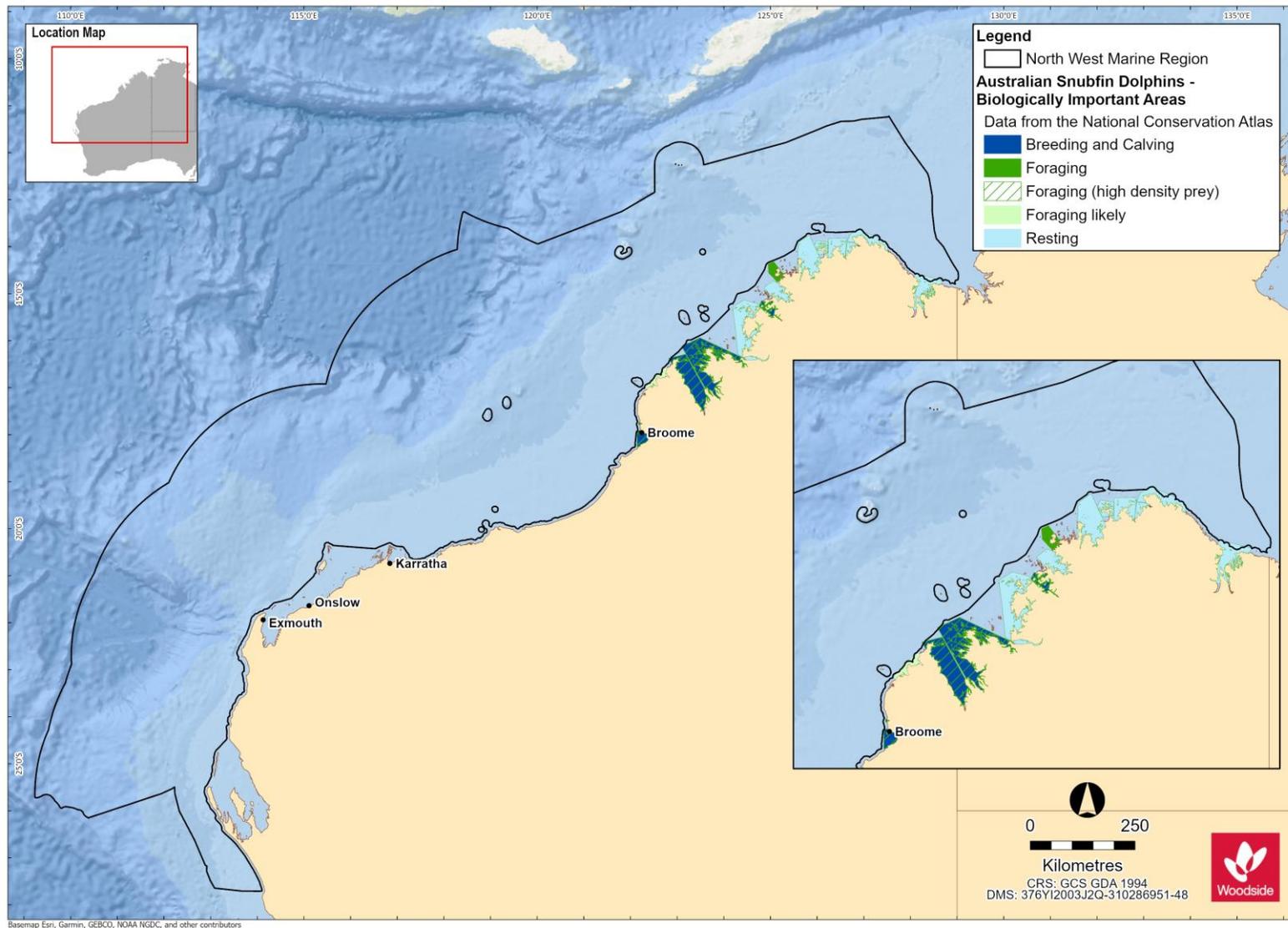


Figure 7-3 Australian snubfin dolphin BIAs for the NWMR

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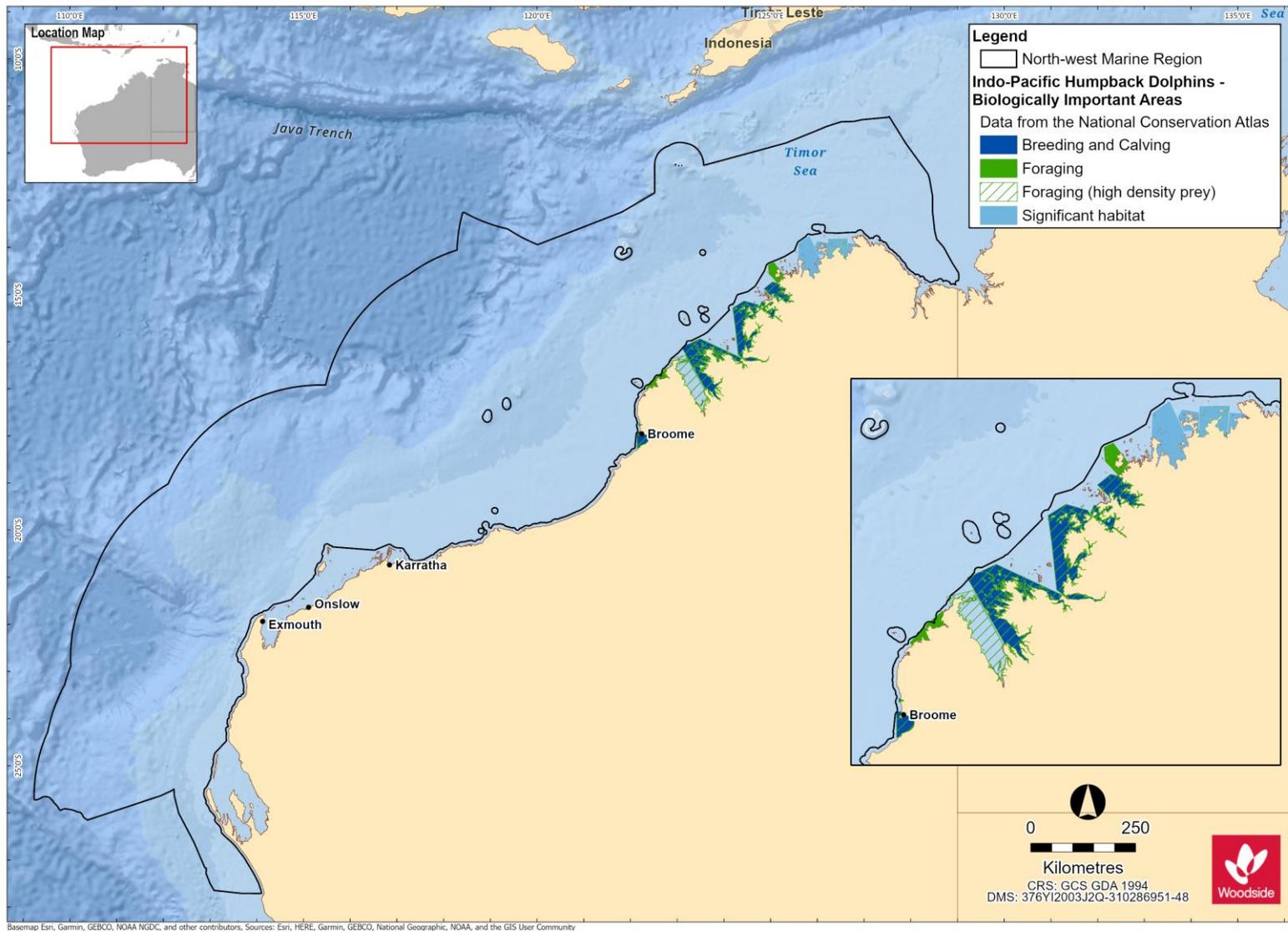


Figure 7-4 Indo-Pacific humpback dolphin BIAs for the NWMR

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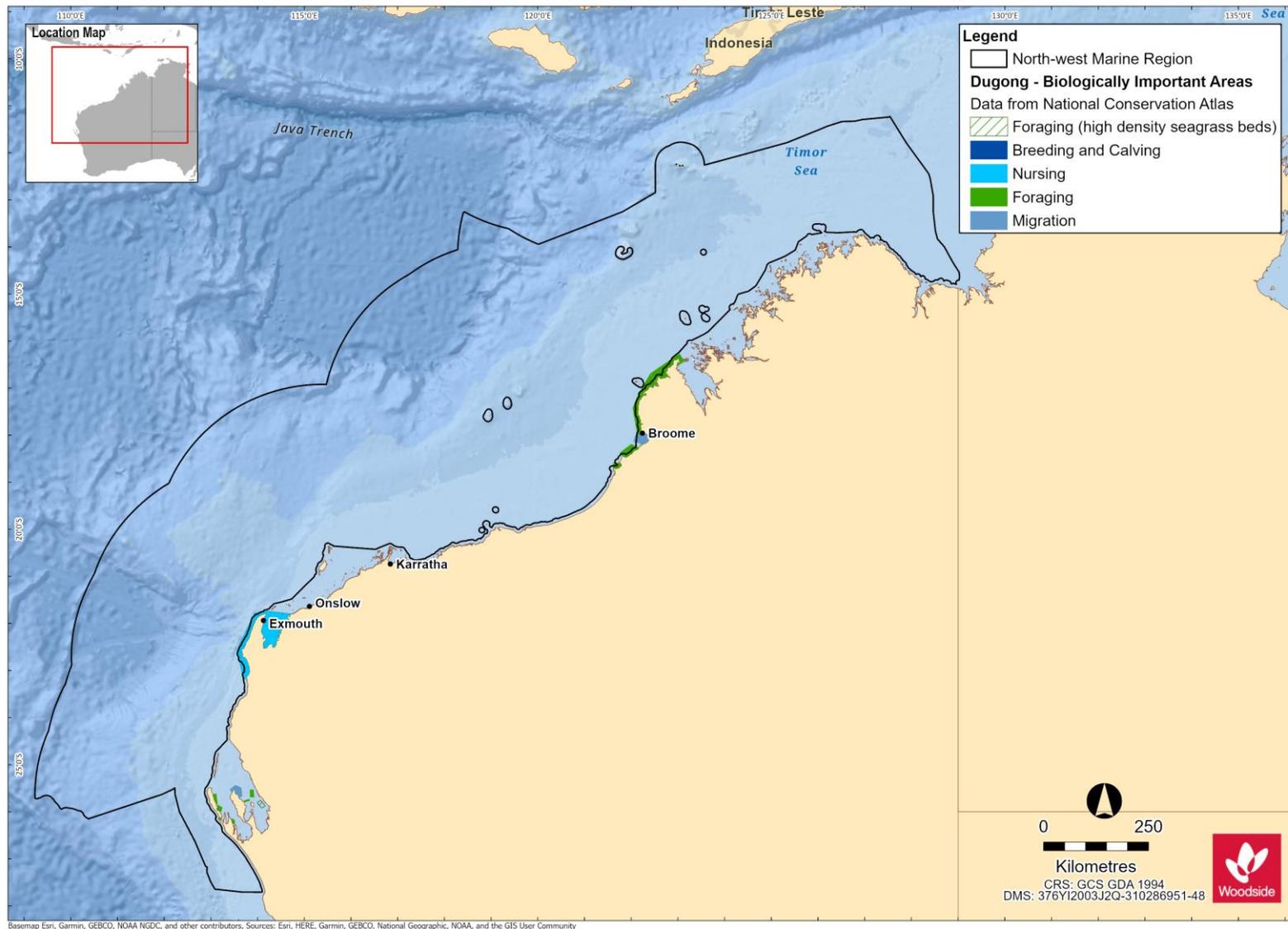


Figure 7-5 Dugong BIA for the NWMR

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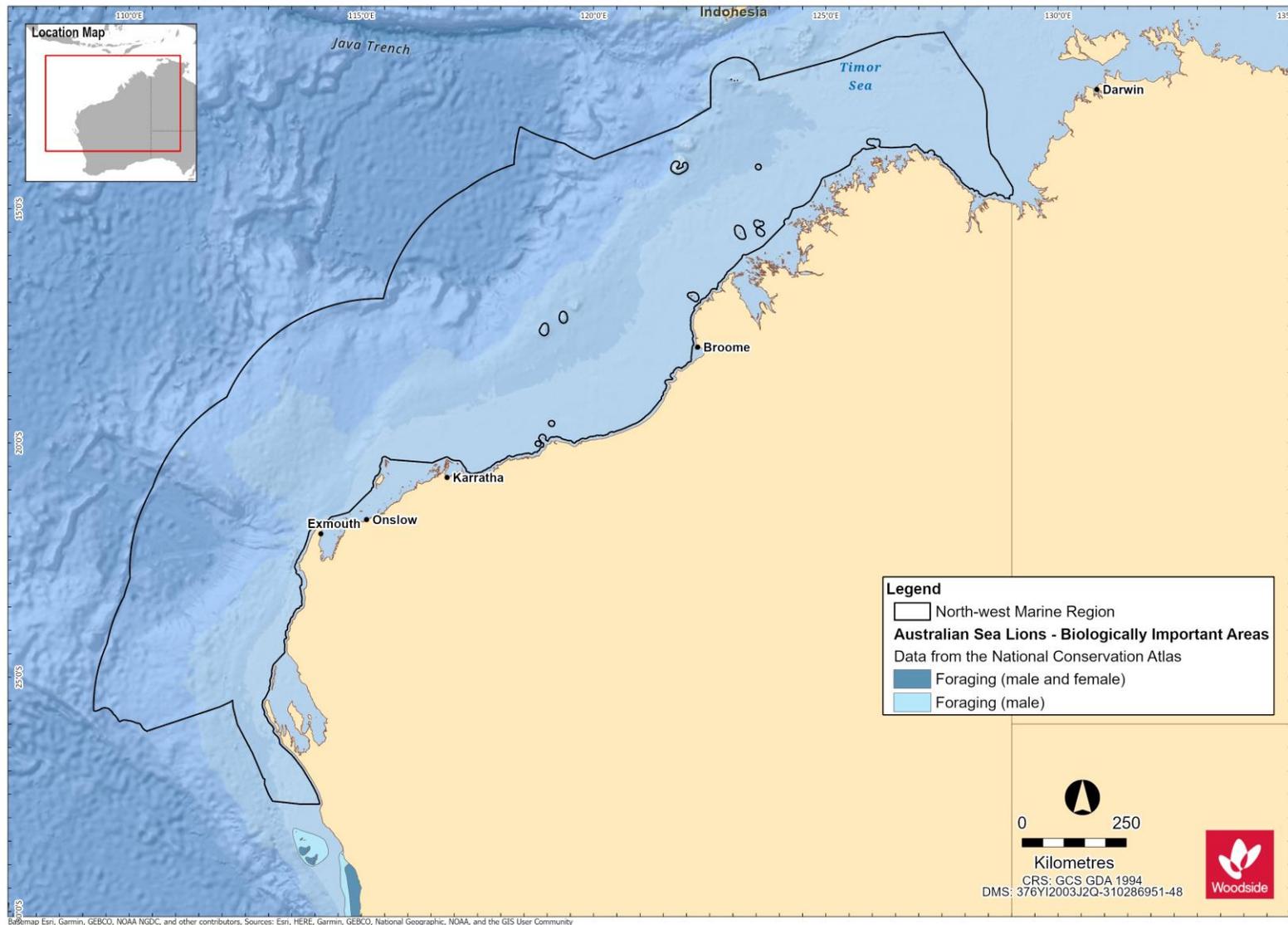


Figure 7-6 Australian sea lion BIAs in the northern extent of the SWMR closest to the NWMR

7.6 Marine Mammal Summary for the NWMR

7.6.1 Browse

The Browse activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (breeding, calving and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.2 North-west Shelf / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas);
- Indo-Pacific humpback dolphin (foraging, breeding and calving areas);
- Australian snubfin dolphin (foraging, breeding and calving areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

7.6.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for three threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas);
- humpback whale (resting and migration areas); and
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in **Table 7-3**.

8. SEABIRDS AND MIGRATORY SHOREBIRDS OF THE NWMR

8.1 Regional Context

The NWMR supports high numbers and species diversity of seabirds and migratory shorebirds including many that are EPBC Act listed, threatened and migratory. The NWMR marine bioregional plan reported 34 seabird species (listed as threatened, migratory and/or marine) that are known to occur, and 30 of 37 species of migratory shorebird species that regularly occur in Australia, are recorded at Ashmore Reef in the NWMR (DSEWPAC, 2012e). The NWMR marine bioregional plan also noted that Roebuck Bay and Eighty Mile Beach are internationally significant and recognised migratory shorebird locations.

Many migratory seabirds and shorebirds are protected through bilateral agreements between Australia and Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), recognising the migratory route and important stopover and resting habitats of the East Asian-Australasian Flyway (EAAF). Important migratory bird habitats are also recognised as part of protected wetlands of the international significance under the Ramsar Convention. Important Bird Areas (IBAs) for the NWMR, which are also recognised as global Key Biodiversity Areas (KBAs) (BirdLife Australia⁴), include:

- Roebuck Bay KBA (and Ramsar site): Internationally significant migratory shorebird species.
- Mandora Marsh and Anna Plains KBA (adjacent to Eighty Mile Beach, Ramsar site): Internationally significant migratory shorebird species.
- Dampier Saltworks KBA: Internationally significant migratory shorebird species.
- Montebello Islands KBA: Shorebird and seabird species.
- Barrow Island KBA: Shorebird and seabird species.
- Exmouth Gulf Mangroves KBA: Internationally significant migratory shorebird species.

Table 8-1 presents a list of the threatened and migratory seabird and shorebird species that occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

4

[https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20\(KBAs,of%20advocacy%20for%20protected%20areas.](https://www.birdlife.org.au/projects/KBA#:~:text=The%20Key%20Biodiversity%20Areas%20(KBAs,of%20advocacy%20for%20protected%20areas.)

Accessed April, 2021.

Table 8-1. Bird species (threatened/migratory) identified by the EPBC Act PMST and other sources of information as potentially occurring within the NWMR

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
Seabirds						
<i>Macronectes giganteus</i>	Southern giant petrel	Endangered	Migratory	Marine	Migratory	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Papasula abbotti</i>	Abbott's booby	Endangered	N/A	Marine	N/A	Conservation Advice for the Abbott's booby - <i>Papasula abbotti</i> (Threatened Species Scientific Committee, 2020b)
<i>Pterodroma mollis</i>	Soft-plumaged petrel	Vulnerable	N/A	Marine	N/A	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	N/A	N/A	Vulnerable	Conservation Advice for <i>Sternula nereis nereis</i> (Fairy Tern) (DSEWPAC, 2011d)
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	Vulnerable	N/A	Marine	Endangered	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)
<i>Thalassarche carteri</i>	Indian yellow-nosed albatross	Vulnerable	Migratory	Marine	Endangered	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC, 2011c)
<i>Anous stolidus</i>	Common noddy	N/A	Migratory	Marine	Migratory	Draft Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2019)
<i>Fregata ariel</i>	Lesser frigatebird	N/A	Migratory	Marine	Migratory	
<i>Fregata minor</i>	Great frigatebird	N/A	Migratory	Marine	Migratory	
<i>Sula leucogaster</i>	Brown booby	N/A	Migratory	Marine	Migratory	
<i>Sula sula</i>	Red-footed booby	N/A	Migratory	Marine	Migratory	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Onychoprion anaethetus</i> (listed as <i>Sterna anaethetus</i>)	Bridled tern	N/A	Migratory	Marine	Migratory	
<i>Thalasseus bergii</i>	Greater crested tern	N/A	Migratory	Marine	Migratory	
<i>Sternula albifrons</i>	Little tern	N/A	Migratory	Marine	Migratory	
<i>Sterna dougallii</i>	Roseate tern	N/A	Migratory	Marine	Migratory	
<i>Onychoprion fuscata</i>	Sooty tern	N/A	N/A	Marine	N/A	
<i>Hydroprogne caspia</i>	Caspian tern	N/A	Migratory	Marine	Migratory	
<i>Ardenna pacifica</i>	Wedge-tailed shearwater	N/A	Migratory	Marine	Migratory	
<i>Puffinus assimillis</i>	Little shearwater	N/A	N/A	Marine	N/A	
<i>Ardenna carneipes</i>	Flesh-footed shearwater	N/A	Migratory	Marine	Vulnerable	
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory	Marine	Migratory	
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory	Marine	Migratory	
<i>Chroicocephalus novaehollandiae</i>	Silver gull	N/A	N/A	Marine	N/A	
Migratory shorebirds						
<i>Numenius madagascariensis</i>	Eastern curlew, Far Eastern curlew	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Numenius madagascariensis</i> eastern curlew (DOE, 2015a)
<i>Calidris ferruginea</i>	Curlew sandpiper	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DOE, 2015b)
<i>Calidris tenuirostris</i>	Great knot	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Calidris tenuirostris</i> Great knot (Threatened Species Scientific Committee, 2016a)
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit (<i>menzbieri</i>)	Critically endangered	Migratory	Marine	Critically endangered	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia). (Threatened Species Scientific Committee, 2016c)

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999			WA Biodiversity Conservation Act 2016	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	
<i>Calidris canutus</i>	Red knot	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Calidris canutus</i> Red knot (Threatened Species Scientific Committee, 2016b)
<i>Charadrius mongolus</i>	Lesser sand plover	Endangered	Migratory	Marine	Endangered	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016e)
<i>Charadrius leschenaultii</i>	Greater sand plover	Vulnerable	Migratory	Marine	Vulnerable	Conservation Advice <i>Charadrius leschenaultia</i> Greater sand plover (Threatened Species Scientific Committee, 2016d)
All migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c).					

8.2 Seabirds in the NWMR

Seabirds are birds that are adapted to life within the marine environment (oceanic and coastal) and are generally long-lived, have delayed breeding and have fewer young than other bird species (Commonwealth of Australia, 2019). At least 34 seabird species listed as threatened, migratory and/or marine under the EPBC Act are known to occur regularly in the NWMR and include a variety of species of terns, noddies, petrels, shearwaters, frigatebirds, and boobies. Many of these species spend most of their lives at sea (predominately pelagic species), ranging over large distances to forage. These pelagic species only come onshore to breed and raise chicks at natal or high-fidelity breeding colonies on remote, offshore island locations in and adjacent to the NWMR. Many species are ecologically significant to the NWMR, as they are endemic to the region, can be present in large numbers in breeding seasons and non-breeding seasons, and many exhibit extensive annual migrations that include marine areas outside the Australian EEZ (DSEWPAC, 2012e).

The presence of seabirds within the NWMR is influenced by seabird species that migrate and forage in the area during the non-breeding season and this includes many seabird species that breed on the Houtman Abrolhos in the SWMR. Pelagic seabirds have been documented foraging at current boundaries and seasonal upwellings within the NWMR (refer to Sutton *et al.*, 2019). The Houtman Abrolhos Islands National Park located in the SWMR, is one of the most significant seabird breeding locations in the eastern Indian Ocean. Sixteen (16) species of seabirds breed there. Eighty percent of common (brown) noddies, 40% of sooty terns and all the lesser noddies found in Australia nest at the Houtman Abrolhos (Surman, 2019). Important seabird areas in the NWMR are as identified by the KBAs (refer to **Section 8.1**) and the information on a select number of seabird species documented for the NWMR (based on the screening criteria presented in **Section 3**), as presented in **Table 8-2**.

Table 8-2 Information on threatened/migratory seabird species of the NWMR

Species	Key Information
Seabirds	
Southern giant petrel	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species giant petrels) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. The giant petrel species distribution is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Abbott's booby	The Abbott's booby is a large, long-lived seabird known to nest only at Christmas Island. The recovery of this species is strongly dependent on the protection of breeding habitat defined habitat critical to the survival of this species on Christmas Island (Threatened Species Scientific Committee, 2020b). This species spends much of its time at sea and known to forage over large distances offshore when nesting and its range includes off the coast of Java, near the Chagos and in the Banda Sea, and may possibly extend into the north-western extent of the NWMR. No BIAs for this species are located in the NWMR.
Soft-plumaged petrel	This petrel species breeds only at two locations in Australian waters within the Southern Ocean (one off Tasmania and Macquarie Island) (Threatened Species Scientific Committee, 2015f). As a mainly sub-Antarctic species they are usually distributed in cooler seas but distribution extends into subtropical waters and its known distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Australian fairy tern	The Australian fairy tern is listed as Vulnerable for the sub-species only recorded for WA. It has a coastal distribution from Sydney, south to Tasmania and around southern WA up to the Dampier Archipelago and out on the offshore island groups of Barrow, Montebello and the Lowendals (DSEWPAC, 2011d). The Australian fairy tern feeds on small baitfish and roosts and nests on sandy beaches below vegetation. These behaviours, generally, occur in inshore waters of island archipelagos and on the Australian mainland shores and adjacent wetlands. Fairy terns breed from August to February. The Australian fairy tern is unlikely to be present
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Species	Key Information
	within the offshore environment of the NWMR. The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Australian lesser noddy	The Houtman Abrolhos, WA is an important breeding habitat for the Australian lesser noddy in the eastern Indian Ocean. This species exhibits nesting habitat specialisation (white mangrove stands) and has a limited foraging range during the breeding season. Furthermore, the lesser noddy forages over shelf waters and appears not to disperse over their non-breeding period as they remain largely in the general vicinity or slightly to the south of the colony in the non-breeding season (February to September; Surman <i>et al.</i> , 2018). No BIAs for this species are located in the NWMR.
Indian yellow-nosed albatross	This species is included in the National recovery plan for threatened albatrosses and giant petrels. Habitat critical to survival is defined for breeding and foraging. There are six known breeding localities under Australian jurisdiction (for all species of albatrosses) and all are located in the Southern Ocean including islands off Tasmania and within the Australian Antarctic Territory (DSEWPAC, 2011c). Habitat critical to survival identified for foraging is defined as waters south of 25 degrees latitude. All albatross species distribution (including the Indian yellow-nose albatross) is mainly within the Southern Ocean but this species does migrate into subtropical waters during the winter and its distribution includes the southern extent of the NWMR. No BIAs for this species are located in the NWMR.
Common noddy	This species is listed as migratory and marine. The common (or brown) noddy is the largest species of noddy found in Australian waters. The species is widespread in tropical and subtropical areas beyond Australia. This seabird species is gregarious and normally occurs in flocks, up to hundreds of individuals, when feeding or roosting. The Houtman Abrolhos, WA is the primary breeding habitat for the common noddy in the Eastern Indian Ocean. This species spends their non-breeding season (March to August) in the NWS area, around 950 km north from the breeding colony (Surman <i>et al.</i> 2018). The species occurs within NWMR waters, particularly around offshore islands such as the Montebello Island group. This species is recorded on unmanned oil and gas platforms within the NWS. No BIAs for this species are located in the NWMR.
Lesser frigatebird Great frigatebird	Both species of frigatebird are listed as migratory and marine. Within the NWMR, the lesser frigatebird is known to breed on Adele, Bedout and West Lacepede islands, Ashmore Reef and Cartier Island (Commonwealth of Australia, 2019). The lesser frigatebird feeds mostly on fish and sometimes cephalopods, and all food is taken while the bird is in flight. Lesser frigatebirds generally forage close to breeding colonies. Breeding/foraging BIAs for the lesser frigatebird are located in the NWMR; refer to Table 8-3 .
Brown booby	The brown booby is the most common booby, occurring throughout all tropical oceans bounded by latitudes 30° N and 30° S. There are large colonies on offshore islands within the NWMR such as the Lacepede Islands (one of the largest colonies in the world), Ashmore Reef, and other offshore Kimberley islands. This seabird species is a specialised plunge diver, mostly eating fish and some cephalopods (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the brown booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Red-footed booby	Within the NWMR, its known breeding sites for this species include Ashmore Reef and Cartier Island. It is a pelagic species and generally occurs away from land. It mainly eats flying fish and squid. Prey abundance is reliant on the high productivity in slope areas off remote islands where the birds breed (Commonwealth of Australia, 2019). Breeding/foraging BIAs for the red-footed booby are located in the NWMR; refer to Table 8-3 and Figure 8-3 .
Greater crested tern	The greater crested tern has a widespread distribution recorded on islands and coastlines of tropical and subtropical areas, ranging from the Atlantic coast of South Africa, Indian Ocean and through south-east Asia and Australia. Outside the breeding season it can be found at sea throughout its range, with the exception of the central Indian Ocean (Commonwealth of Australia, 2019). The largest breeding colony in WA for this species is the Houtman Abrolhos Islands, SWMR (Surman, 2019). No BIAs for this species are located in the NWMR.
Little tern	There are three sub-populations of this species in Australia and two of these occur in the NWMR: northern Australian breeding sub-population occurring around Broome and extending across in to the NMR, and an east Asian breeding sub-population, with the terns present from Shark Bay to south-eastern Queensland during the austral summer. Little terns

Species	Key Information
	usually forage close to breeding colonies in the shallow water of estuaries (Commonwealth of Australia, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Roseate tern	This species is generally tropical in distribution and there are many breeding populations in the NWMR, including Ashmore Reef, Napier Broome Bay, Bonaparte Archipelago, Lacepede Islands, Dampier Archipelago and the Lowendal Islands. A large number of non-breeding roseate terns have been observed at several remote locations in the Kimberley and there are high numbers also recorded for Eighty Mile Beach Ramsar site. The Kimberley colonies are likely to be another sub-species that breeds in east Asia. Roseate terns predominately eat small pelagic fish (Commonwealth of Australia, 2019). The largest breeding colony in Western Australia for this species is in the Houtman Abrolhos Islands, SWMR (Surman, 2019). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-2 .
Wedge-tailed shearwater	The wedge-tailed shearwater is a pelagic, marine seabird known from tropical and subtropical waters. Its distribution is widespread across the Indian and Pacific oceans. It is known to breed on the east and west coasts (and offshore islands) of Australia. This species is known to consume fish, cephalopods, and other biota primarily via contact-dipping. Wedge-tailed shearwaters are now understood to undertake extensive foraging trips (over thousands of kilometres over periods of days when chicking and provisioning young) and much longer and extensive pelagic travels over the north-west Indian Ocean during the non-breeding season, targeting current boundaries and upwellings. The species breeds throughout its range, mainly on vegetated islands, atolls and cays and excavates burrows in the ground where chicks are raised (Commonwealth of Australia, 2019). Large breeding colonies of the wedge-tailed shearwater are located on the Houtman Abrolhos islands (SWMR) (Surman <i>et al.</i> , 2018) and several locations in the NWMR including: Muiron Islands (North-west Cape), Varanus Island and the Dampier Archipelago in the Pilbara where burrow numbers were estimated to several hundred thousand to half a million such as on the Muiron Islands, though it is not known if all burrows are utilised on an annual basis (Birdlife Australia, 2018; Surman <i>et al.</i> , 2018). Cannell <i>et al.</i> (2019) satellite tracked adult wedge-tailed shearwaters during egg incubation and chick rearing on the Muiron Islands in January 2018. For the incubation trips, there was a strong consistency for the birds to travel towards seamounts, typically located north-west of the Muiron Islands, between Australia and Indonesia. One bird however remained south-west of the islands, in the Cape Range Canyon. A similar pattern to utilise areas associated with sea mounts was also observed for the long foraging trips during chick rearing, though some of the foraging was concentrated in deeper waters. A bimodal foraging strategy during chick-rearing was observed, with adults undertaking long foraging trips after a series of shorter foraging trips within the NWMR. Surman <i>et al.</i> (2018) reported most wedge-tailed shearwaters from the breeding colonies on the Houtman Abrolhos undertook extensive non-breeding migrations. This seabird species occupied waters adjacent or to the north of their nesting sites or migrated 4200 km north-west into the equatorial central Indian Ocean near the Ninety East Ridge during the non-breeding season (later April to mid-November). For the description and location of BIAs in the NWMR, refer to Table 8-3 and Figure 8-1 .
Flesh-footed shearwater	The species mainly occurs in the subtropics, over continental shelves and slopes and occasionally inshore waters, with individual birds pass through the tropics and over deeper waters during migration to the North Pacific and Indian oceans (Commonwealth of Australia, 2019). They are a common visitor to the waters off southern Australia, from south-western WA to south-eastern Queensland. The fleshy-footed shearwater is a trans-equatorial migrant, breeding from late September to May off south-western Australia, and migrating north by early May, across the southern Indian and possibly Indonesia to the northern Pacific Ocean. No BIAs for the flesh-footed shearwater are located in the NWMR.
Streaked shearwater	The streaked shearwater has a broad distribution in the western Pacific Ocean, breeding on the coast and offshore islands of Japan, Russia, China and the Korean Peninsula. During winter months (non-breeding season), the species undertakes trans-equatorial migration to the coasts of Vietnam, New Guinea, the Philippines, Australia, southern India and Sri Lanka. The streaked shearwater feeds mainly on fish and squid that it catches by surface-seizing and shallow plunges (Commonwealth of Australia, 2019). No BIAs for the streaked shearwater are located in the NWMR.
White-tailed tropicbird	Tropicbirds are predominately pelagic species and the white-tailed tropicbird forages in warm waters and over long distances (pan-tropical). The species is most common off north-west Australia. In the NWMR, this species is considered a sub-species and are limited in number and distribution. Nesting sites are known for Clerke Reef (Rowley Shoals) and Ashmore

Species	Key Information
	Reef. Christmas Island is also a known nesting site and the species can disperse several thousand kilometres during foraging trips. This species feeds mainly on fish and cephalopods, captured by deep plunge diving (Commonwealth of Australia, 2019). There are breeding BIAs at the Rowley Shoals and Ashmore Reef within the NWMR for the white-tailed tropicbird; refer to Table 8-3 .
Silver gull	The silver gull is typically described as an inshore and coastal foraging seabird and has an Australian-wide distribution including locations within the NWMR. It is noted as it has been recorded on unmanned oil and gas platforms located within the NWS.

8.2.1 Biologically Important Areas in the NWMR

BIAs representing important life cycle stages and behaviours for eight species of seabird in the NWMR are presented in **Table 8-3**.

Table 8-3 Seabird BIAs within the NWMR

Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
Australia fairy tern	-	✓	✓	-	No foraging BIAs in the NWMR Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	-
Wedge-tailed shearwater	✓	✓	✓	Widespread area of the NWMR offshore and inshore waters	Foraging in high numbers: the BIA is located in the SWMR including the Houtman Abrolhos Islands	-	-
Great frigatebird	✓	-	-	Ashmore Reef, Adele Island	-	-	-
Lesser frigatebird	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Brown booby	✓	✓	-	Off Eighty Mile Beach, Lacepedes, Adele Island, North Kimberley and Ashmore Reef	-	-	-
Red-footed booby	✓	-	-	Adele Island, Ashmore Reef	-	-	-
Little tern	✓	✓	-	Rowley Shoals, Adele Island	-	-	-
Roseate tern	✓	✓	✓	-	No foraging BIAs in the NWMR Foraging (provisioning young) and foraging BIAs located in the SWMR – Houtman Abrolhos Islands the	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	Eighty Mile Beach

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Seabird Species	Woodside Activity Area			BIAs			
	Browse	NWS/S	NWC	Breeding/foraging	Foraging	Breeding	Resting
					nearest BIA to the NWMR		
White-tailed tropicbird	✓	-	-			Rowley Shoals Ashmore Reef	

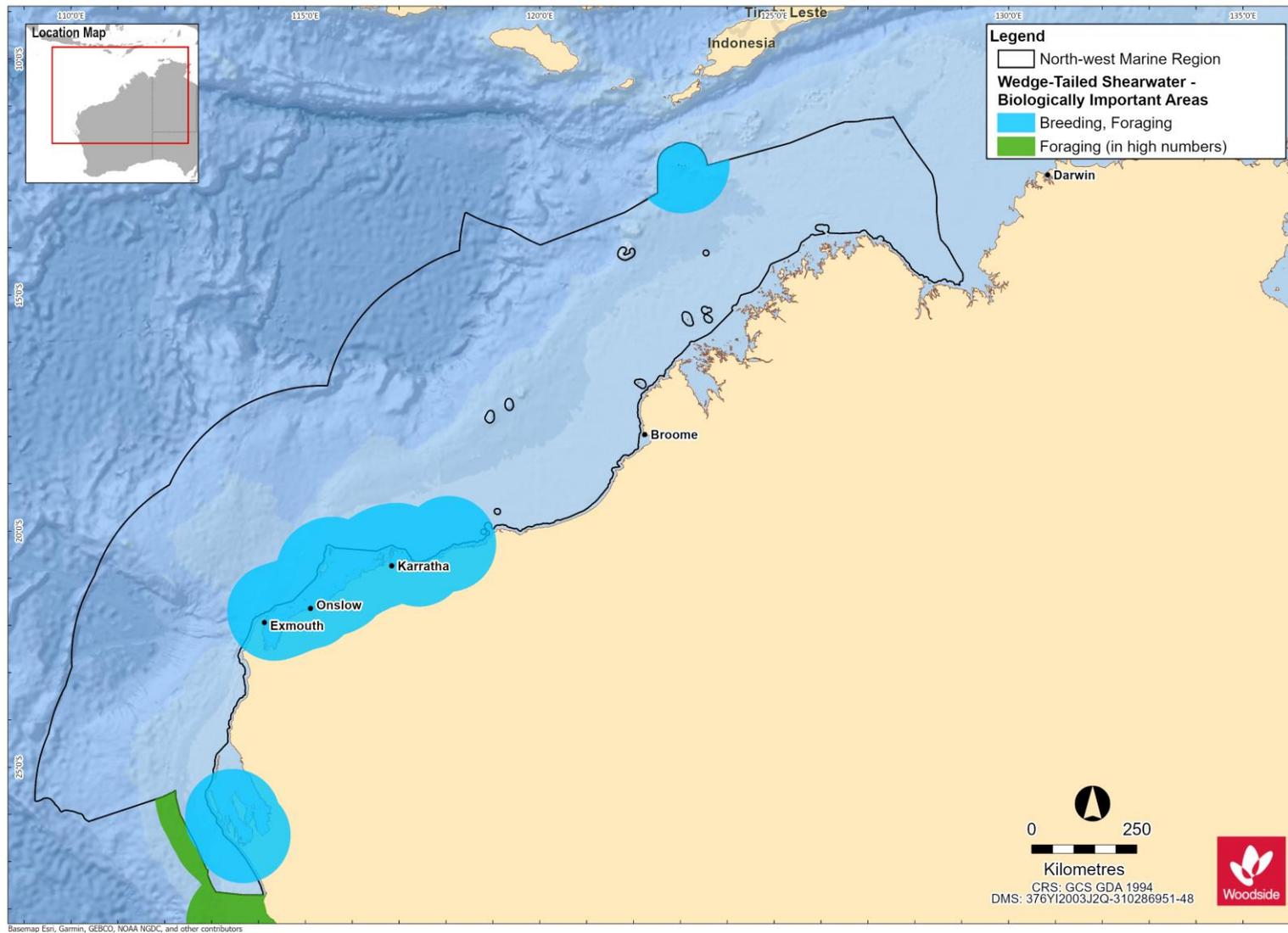


Figure 8-1 Wedge-tailed shearwater BIAs for the NWMR

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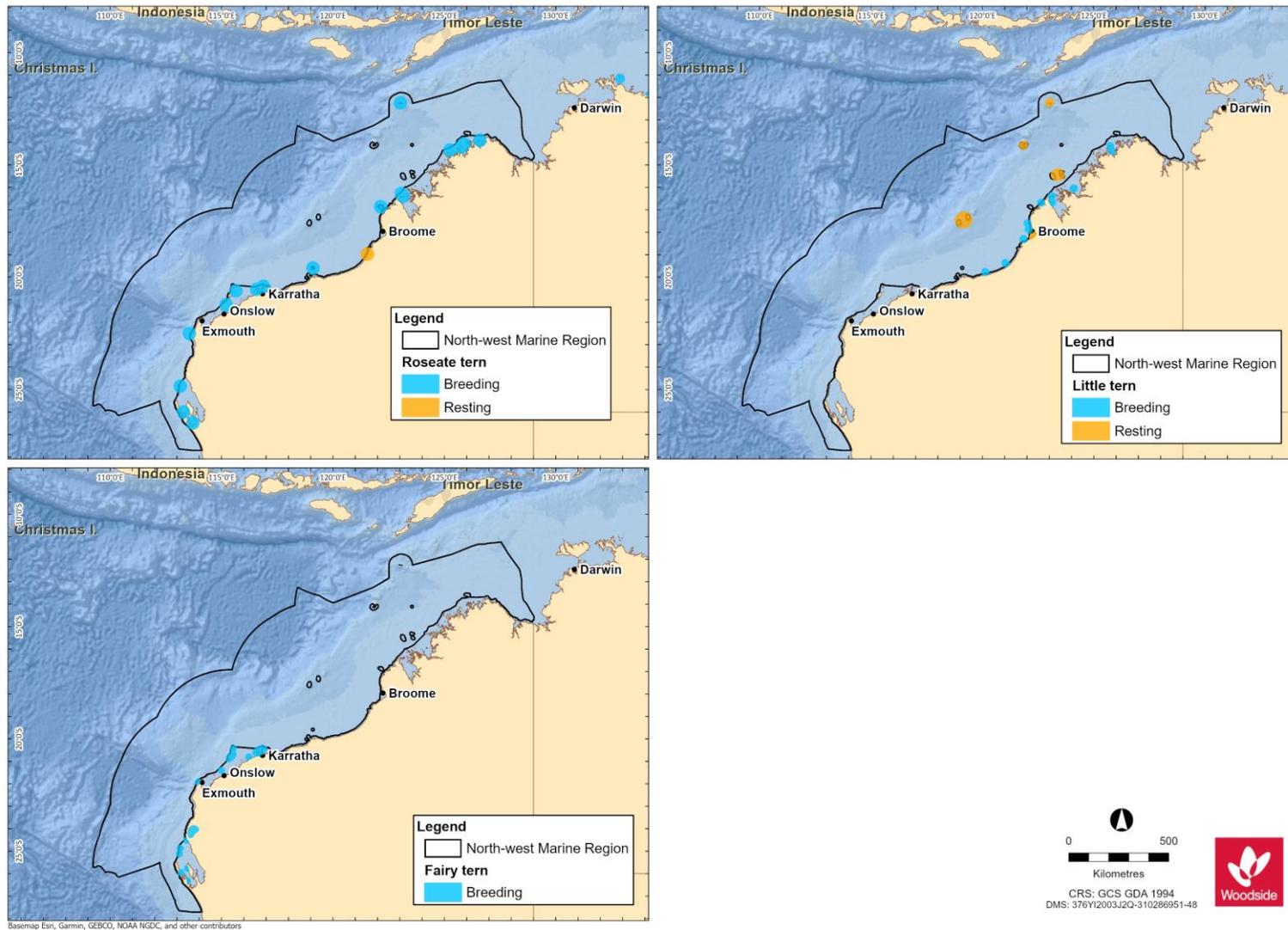


Figure 8-2 Tern species BIAs for the NWMR

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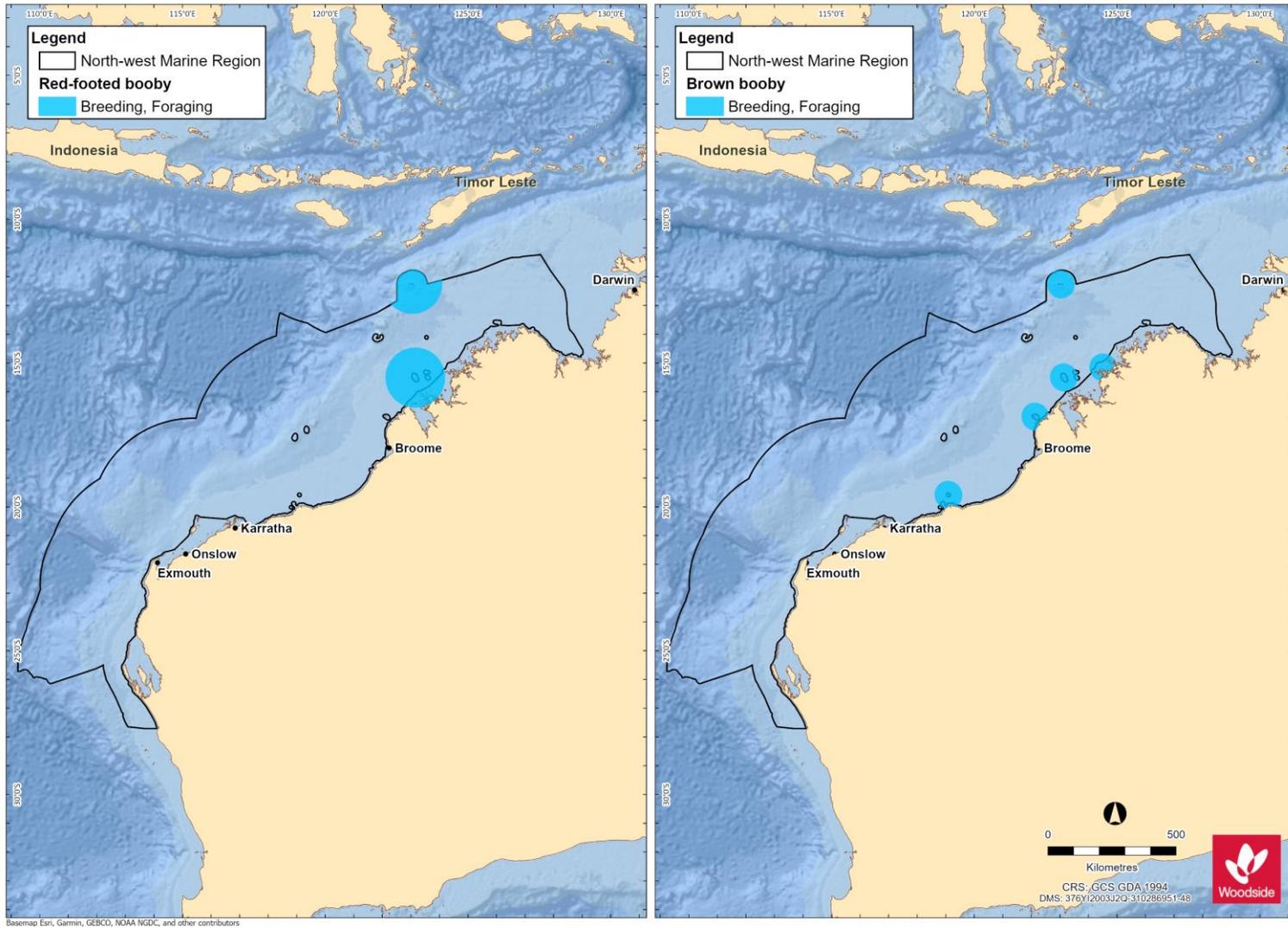


Figure 8-3 Red-footed and brown booby BIAs for the NWMR

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8.2.2 Seabird Summary for NWMR

8.2.2.1 Browse

The Browse activity area includes biologically important habitat for seven threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- great and lesser frigatebirds (breeding/foraging);
- brown booby (breeding/foraging);
- red-footed booby (breeding/foraging);
- little tern (breeding/foraging);
- roseate tern (breeding and resting); and,
- white-tailed tropicbird (breeding).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.2 NWS / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- wedge-tailed shearwater (breeding/foraging);
- lesser frigatebird (breeding/foraging);
- brown booby (breeding/foraging);
- little tern (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.2.2.3 North-west Cape

The North-west Cape activity area includes biologically important habitat for five threatened and/or migratory seabird species:

- Australian fairy tern (breeding);
- wedge-tailed shearwater (breeding/foraging); and
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in **Table 8-3**.

8.3 Shorebirds

Shorebirds (migratory and resident species) are generally associated with wetland or coastal environments, and the NWMR hosts a large number of many shorebird species, particularly in the Austral summer (refer to **Appendix A** for the EPBC Act PMST reports on listed species of shorebirds). Shorebirds may use coastal environments for feeding, nesting or migratory stopovers. In coastal environments, shorebirds generally feed during low tide on exposed intertidal mud and sand flats, and roost in suitable habitat above the high water mark. Many shorebird species undergo annual migrations, typically breeding at high latitudes of the Northern Hemisphere and migrating south for the non-breeding season and Australia is part of the East Asian-Australasian Flyway (EAAF). The EAAF extends from breeding grounds in the Russian tundra, Mongolia and Alaska

southwards through east and south-east Asia, to non-breeding areas of Indonesia, Papua New Guinea, Australia and New Zealand (Weller and Lee, 2017). The EAAF is of most relevance to the NWMR. There are 37 species of shorebird which annually migrate to Australia via the EAAF and 36 of these species spend the austral summer (non-breeding season) foraging and roosting in coastal and wetland habitats (Commonwealth of Australia, 2015c; Weller and Lee, 2017).

Ashmore Reef is documented as a BIA for migratory shorebirds in the NWMR (DSEWPAC, 2012a).

Table 8-4. Information on threatened/migratory shorebird species of the NWMR

Species	Key Information
Shorebirds	
Eastern curlew, Far eastern curlew	This species is the largest, migratory shorebird in the world, with a long neck, long legs and a very long downcurved bill and is a long-haul flyer. The eastern curlew is a coastal species with a continuous distribution north from Barrow Island to the Kimberley region. The species is endemic to the EAAF and is a non-breeding visitor to Australia from August to March, primarily foraging on crabs and molluscs in intertidal mudflats. During the non-breeding season in Australia, this species is most associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (DOE, 2015a).
Curlew sandpiper	The curlew sandpiper breeds in northern Siberia but has a non-breeding range that extends from western Africa to Australia, with small numbers reaching New Zealand (Bamford <i>et al.</i> , 2008). In Australia, curlew sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states and the NT during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north along the EAAF. The species preferred habitat for foraging is mudflats and nearby shallow waters in sheltered coastal areas such as estuaries, bay, inlets and lagoons (DOE, 2015b).
Great knot	The great knot breeds in the Northern Hemisphere and undertakes biannual migrations along the EAAF to non-breeding habitat in Australia. The great knot winters in Australia and has been recorded around the entirety of the Australian coast the greatest numbers are found in northern Western Australia (Pilbara (Dampier Archipelago) and Kimberley and the Northern Territory. In Australia, this species prefers sheltered, coastal habitat with large intertidal mudflats or sandflats (inkling inlets, bays, harbours, estuaries and lagoons). High numbers (exceeding several thousand birds are regularly recorded from Roebuck Bay. The great knot feeds on a variety of invertebrates by pecking at or just below the surface of moist mud or sand (Threatened Species Scientific Committee, 2016a).
Bar-tailed godwit (<i>menzbieri</i>)	The bar-tailed godwit is a large, migratory shorebird and there are two sub-species in the EAAF (<i>Limosa lapponica baueri</i> and <i>L. l. menzbieri</i>). The sub-species <i>L. l. menzbieri</i> breeds in northern Siberia and spends its non-breeding period mostly in the north of WA but also in South-east Asia. The bar-tailed godwit (<i>menzbieri</i>) usually forages near the water in shallow water, mainly in tidal estuaries and harbours with a preference for exposed sandy or soft mud substrates on intertidal flats, banks and beaches (Threatened Species Scientific Committee, 2016c).
Red knot (<i>piersmai</i>)	This species is a small to medium migratory shorebird. There are two sub-species that cannot be distinguished from each other in nonbreeding plumage, however, <i>Calidris canutus piersmai</i> tend to overwinter almost exclusively in north-west Australia. The red knot migrates long distances from breeding grounds in high northern latitudes, where it breeds during the boreal summer, to the Southern Hemisphere during the austral summer with migration along the EAAF. Very large numbers are recorded for the north-west Australia and is common in all suitable habitats around the coast, including inland clay pans near Roebuck Bay (where the species roosts). The red knot usually forages in soft substrate along the waters edge on intertidal mudflats, sandflats and sandy beaches of sheltered coasts (Threatened Species Scientific Committee, 2016b).
Lesser sand plover	The lesser sand plover is a small to medium shorebird and one of 36 migratory shorebirds that breed in the Northern Hemisphere during the boreal summer and are known to annually migrate to the non-breeding grounds of Australia along the EAAF for the austral summer. There are five different sub-species and it is most likely the non-breeding ranges of the sub-species <i>Charadrius m. mongolus</i> overlaps with the NWMR. This species is widespread in coastal regions, preferring sandy beaches, mudflats of coastal bays and estuaries (Threatened Species Scientific Committee, 2016e).
Greater sand plover	The greater sand plover is a small to medium shorebird and in its non-breeding plumage is difficult to distinguish from the lesser sand plover. This species breeds in the Northern

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Species	Key Information
	Hemisphere and undertakes annual migrations to and from Southern Hemisphere feeding grounds in the austral summer along the EAAF. The species distribution in Australia during the non-breeding season is widespread, in WA the greater sand plover is widespread between Northwest Cape and Roebuck Bay (Threatened Species Scientific Committee, 2016d).

9. KEY ECOLOGICAL FEATURES

Key ecological features (KEFs) are elements of the Commonwealth marine environment that are considered to be important for a marine region's biodiversity or ecosystem function and integrity. KEFs have been identified by the Australian Government based on advice from scientists about the ecological processes and characteristics of the area.

KEFs meet one or more of the following criteria:

- a species, group of species, or a community with a regionally important ecological role (e.g. a predator, prey that affects a large biomass or number of other marine species),
- a species, group of species or a community that is nationally or regionally important for biodiversity,
- an area or habitat that is nationally or regionally important for:
 - enhanced or high productivity (such as predictable upwellings – an upwelling occurs when cold nutrient-rich waters from the bottom of the ocean rise to the surface),
 - aggregations of marine life (such as feeding, resting, breeding or nursery areas), or
 - biodiversity and endemism (species which only occur in a specific area),
- a unique seafloor feature, with known or presumed ecological properties of regional significance.

Thirteen KEFs are designated within the NWMR, twelve KEFs within the SWMR and eight KEFs within the NMR. These KEFs have been identified in the Protected Matters search (**Appendix A**) and outlined in **Table 9-1**, **Table 9-2** and **Table 9-3**, and **Figure 9-1**, **Figure 9-2** and **Figure 9-3**.

Table 9-1 Key Ecological Features (KEF) within the NWMM

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Carbonate bank and terrace system of the Sahul Shelf	✓	-	-	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Regionally important because of their role in enhancing biodiversity and local productivity relative to their surrounds. The carbonate banks and terraces provide areas of hard substrate in an otherwise soft sediment environment which are important for sessile species</p>	<p>The Carbonate banks and terrace system of the Sahul Shelf are located in the western Joseph Bonaparte Gulf and to the north of Cape Bougainville and Cape Londonderry. The carbonate banks and terraces are part of a larger complex of banks and terraces that occurs on the Van Diemen Rise in the adjacent NMR.</p> <p>The bank and terrace system of the Van Diemen Rise covers approximately 31,278 km² and forms part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east. The feature is characterised by terrace, banks, channels and valleys (DSEWPAC, 2012c). The banks, ridges and terraces of the Van Diemen Rise are raised geomorphic features with relatively high proportions of hard substrate that support sponge and octocoral gardens. These, in turn, provide habitat to other epifauna, by providing structure in an otherwise flat environment (Przeslawski <i>et al.</i>, 2011). Plains and valleys are characterised by scattered epifauna and infauna that include polychaetes and ascidians. These epibenthic communities support higher order species such as olive ridley turtles, sea snakes and sharks (DSEWPAC, 2012c)</p>
Pinnacles of the Bonaparte Basin	✓	-	-	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species</p> <p>Recognised as a biodiversity hotspot for sponges</p> <p>The Pinnacles of the Bonaparte Basin KEF is located within both the NWMM and NMR (refer Table 9-3)</p>	<p>The Pinnacles of the Bonaparte Basin provide areas of hard substrate in an otherwise relatively featureless environment, the pinnacles are likely to support a high number of species, although a better understanding of the species richness and diversity associated with these structures is required (DSEWPAC, 2012a, 2012c). Covering >520 km² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012a, 2012c).</p>
Ashmore Reef and Cartier Island and surrounding Commonwealth waters	✓	-	-	<p>High productivity, biodiversity and aggregation of marine life that apply to both the benthic and pelagic habitats within the feature</p>	<p>Ashmore Reef is the largest of only three emergent oceanic reefs present in the north-eastern Indian Ocean and is the only oceanic reef in the region with vegetated islands. Ashmore contains a large reef shelf, two large lagoons, several channelled carbonate sand flats, shifting sand cays, an extensive reef flat, three vegetated islands—East, Middle and West islands—and</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
					surrounding waters. Rising from a depth of more than 100 m, the reef platform is at the edge of the NWS and covers an area of 239 km ² . Ashmore Reef and Cartier Island and the surrounding Commonwealth waters are regionally important for feeding and breeding aggregations of birds and other marine life; they are areas of enhanced primary productivity in an otherwise low-nutrient environment (DSEWPAC, 2012a). Ashmore Reef supports the highest number of coral species of any reef off the WA coast.
Seringapatam Reef and the Commonwealth waters in the Scott Reef complex	✓	-	-	Support diverse aggregations of marine life, have high primary productivity relative to other parts of the region, are relatively pristine and have high species richness, which apply to both the benthic and pelagic habitats within the feature	Seringapatam Reef and the Commonwealth waters in the Scott Reef complex are regionally important in supporting the diverse aggregations of marine life, high primary productivity, and high species richness associated with the reefs themselves. As two of the few offshore reefs in the north-west, they provide an important biophysical environment in the region (DSEWPAC, 2012a).
Continental slope demersal fish communities	✓	✓	✓	High biodiversity of demersal fish assemblages, including high levels of endemism	The diversity of demersal fish assemblages on the continental slope in the Timor Province, the Northwest Transition and the North-west Province is high compared to elsewhere along the Australian continental slope (DSEWPAC, 2012a). The continental slope between North-west Cape and the Montebello Trough has more than 500 fish species, 76 of which are endemic, which makes it the most diverse slope bioregion in Australia (Last <i>et al.</i> , 2005). The slope of the Timor Province and the Northwest Transition also contains more than 500 species of demersal fishes of which 64 are considered endemic (Last <i>et al.</i> , 2005), making it the second richest area for demersal fishes throughout the whole continental slope. Demersal fish species occupy two distinct demersal biomes associated with the upper slope (225–500 m water depths) and the mid-slope (750–1000 m). Although poorly known, it is suggested that the demersal slope communities rely on bacteria and detritus-based systems comprised of infauna and epifauna, which in turn become prey for a range of teleost fishes, molluscs and crustaceans (Brewer <i>et al.</i> , 2007). Higher-order consumers may include carnivorous fishes, deepwater sharks, large squid, and toothed whales (Brewer <i>et al.</i> , 2007). Pelagic production is phytoplankton-based, with hot spots around oceanic reefs and islands (Brewer <i>et al.</i> , 2007).

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Ancient coastline at 125 m depth contour	✓	✓	✓	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>Provides areas of hard substrate and therefore may provide sites for higher diversity and enhanced species richness relative to surrounding areas of predominantly soft sediment</p>	<p>Several steps and terraces as a result of Holocene sea level changes occur in the region, with the most prominent of these features occurring as an escarpment along the NWMR and Sahul Shelf at a water depth of 125 m.</p> <p>The Ancient Coastline is not continuous throughout the NWMR and coincides with a well-documented eustatic stillstand at about 130 m worldwide (Falkner <i>et al.</i>, 2009).</p> <p>Where the Ancient Coastline provides areas of hard substrate, it may contribute to higher diversity and enhanced species richness relative to soft sediment habitat (Falkner <i>et al.</i>, 2009). Parts of the Ancient Coastline, represented as rocky escarpment, are considered to provide biologically important habitat in an area predominantly made up of soft sediment.</p> <p>The escarpment type features may also potentially facilitate mixing within the water column due to upwelling, providing a nutrient-rich environment. Although the Ancient Coastline adds additional habitat types to a representative system, the habitat types are not unique to the coastline as they are widespread on the upper shelf (Falkner <i>et al.</i>, 2009)</p>
Canyons linking the Argo Abyssal Plain and Scott Plateau	-	✓	-	<p>Facilitates nutrient upwelling, creating enhanced productivity and encouraging diverse aggregations of marine life</p>	<p>Interactions with the Leeuwin Current and strong internal tides are thought to result in upwelling at the canyon heads, thus creating conditions for enhanced productivity in the region (Brewer <i>et al.</i>, 2007). As a result, aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, predatory fishes and seabirds are known to occur in the area due to its enhanced productivity (Sleeman <i>et al.</i>, 2007).</p>
Glomar Shoal	-	✓	-	<p>An area of high productivity and aggregations of marine life including commercial and recreational fish species</p>	<p>Glomar Shoal is a submerged littoral feature located about 150 km north of Dampier on the Rowley shelf at depths of 33–77 m (Falkner <i>et al.</i>, 2009). Studies by Abdul Wahab <i>et al.</i> (2018) found a number of hard coral and sponge species in water depths less than 40 m. One hundred and seventy (170) different species of fishes were detected with greatest species richness and abundance in shallow habitats (Abdul Wahab <i>et al.</i>, 2018). Fish species present include a number of commercial and recreational species such as Rankin cod, brown striped snapper, red emperor, crimson snapper, bream and yellow-spotted triggerfish (Falkner <i>et al.</i>, 2009; Fletcher and Santoro, 2009). These species have recorded high catch rates associated with Glomar Shoal, indicating that the shoal is likely to be an area of high productivity.</p>

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KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
Mermaid Reef and Commonwealth waters surrounding Rowley Shoals	-	✓	-	Regionally important in supporting high species richness, higher productivity and aggregations of marine life	The Mermaid Reef and Commonwealth waters surrounding the Rowley Shoals KEF and is adjacent to the three nautical mile State waters limit surrounding Clerke and Imperieuse reefs, and include the Mermaid Reef Marine Park as described in Section 10 . The reefs provide a distinctive biophysical environment in the region. They have steep and distinct reef slopes and associated fish communities. In evolutionary terms, the reefs may play a role in supplying coral and fish larvae to reefs further south via the southward flowing Indonesian Throughflow. Both coral communities and fish assemblages differ from similar habitats in eastern Australia (Done <i>et al.</i> , 1994).
Exmouth Plateau	-	✓	✓	Unique seafloor feature with ecological properties of regional significance, which apply to both benthic and pelagic habitats Likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of approximately 1000 m	The Exmouth Plateau is a large, mid-slope, continental margin plateau that lies off the northwest coast of Australia. It ranges in depth from about 500 to more than 5000 m and is a major structural element of the Carnarvon Basin (Miyazaki and Stagg, 2013). The large size of the Exmouth Plateau and its expansive surface may modify deep water flow and be associated with the generation of internal tides; both of which may subsequently contribute to the upwelling of deeper, nutrient-rich waters closer to the surface (Brewer <i>et al.</i> , 2007). Satellite observations suggest that productivity is enhanced along the northern and southern boundaries of the plateau (Brewer <i>et al.</i> , 2007). Sediments on the plateau suggest that biological communities include scavengers, benthic filter feeders and epifauna (DSEWPAC, 2012a). Fauna in the pelagic waters above the plateau are likely to include small pelagic species and nekton attracted to seasonal upwellings, as well as larger predators such as billfishes, sharks and dolphins (Brewer <i>et al.</i> , 2007). Protected and migratory species are also known to pass through the region, including whale sharks and cetaceans.
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	-	-	✓	Unique seafloor feature with ecological properties of regional significance The feature is an area of moderately enhanced productivity, attracting aggregations of fish and higher-order consumers such as large predatory	The canyons are associated with upwelling as they channel deep water from the Cuvier Abyssal Plain up onto the slope. This nutrient-rich water interacts with the Leeuwin Current at the canyon heads (DSEWPAC, 2012a). Aggregations of whale sharks, manta rays, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area.

KEF Name	Woodside Activity Area			Values ¹	Description
	Browse	NWS/S	NW Cape		
				fish, sharks, toothed whales and dolphins Likely to be important due to their historical association with sperm whale aggregations	
Commonwealth waters adjacent to Ningaloo Reef	-	-	✓	High productivity and diverse aggregations of marine life The Commonwealth waters adjacent to Ningaloo Reef and associated canyons and plateau are interconnected and support the high productivity and species richness of Ningaloo Reef, globally significant as the only extensive coral reef in the world that fringes the west coast of a continent	The Leeuwin and Ningaloo currents interact, leading to areas of enhanced productivity in the Commonwealth waters adjacent to Ningaloo Reef. Aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, large predatory fish, and seabirds are known to occur in this area (DSEWPAC, 2012a). The spatial boundary of this KEF, as defined in the NCVA, is defined as the waters contained in the existing Ningaloo AMP provided in Section 10 .
Wallaby Saddle	-	-	✓	High productivity and aggregations of marine life: Representing almost the entire area of this type of geomorphic feature in the NWMR. It is a unique habitat that neither occurs anywhere else nearby (within hundreds of kilometres) nor with as large an area (Falkner <i>et al.</i> 2009)	The Wallaby Saddle may be an area of enhanced productivity. Historical whaling records provide evidence of sperm whale aggregations in the area of the Wallaby Saddle, possibly due to the enhanced productivity of the area and aggregations of baitfish (DSEWPAC, 2012a).

¹: Values description sourced from Marine bioregional plan for the North-west Marine Region (DSEWPAC, 2012a) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database.

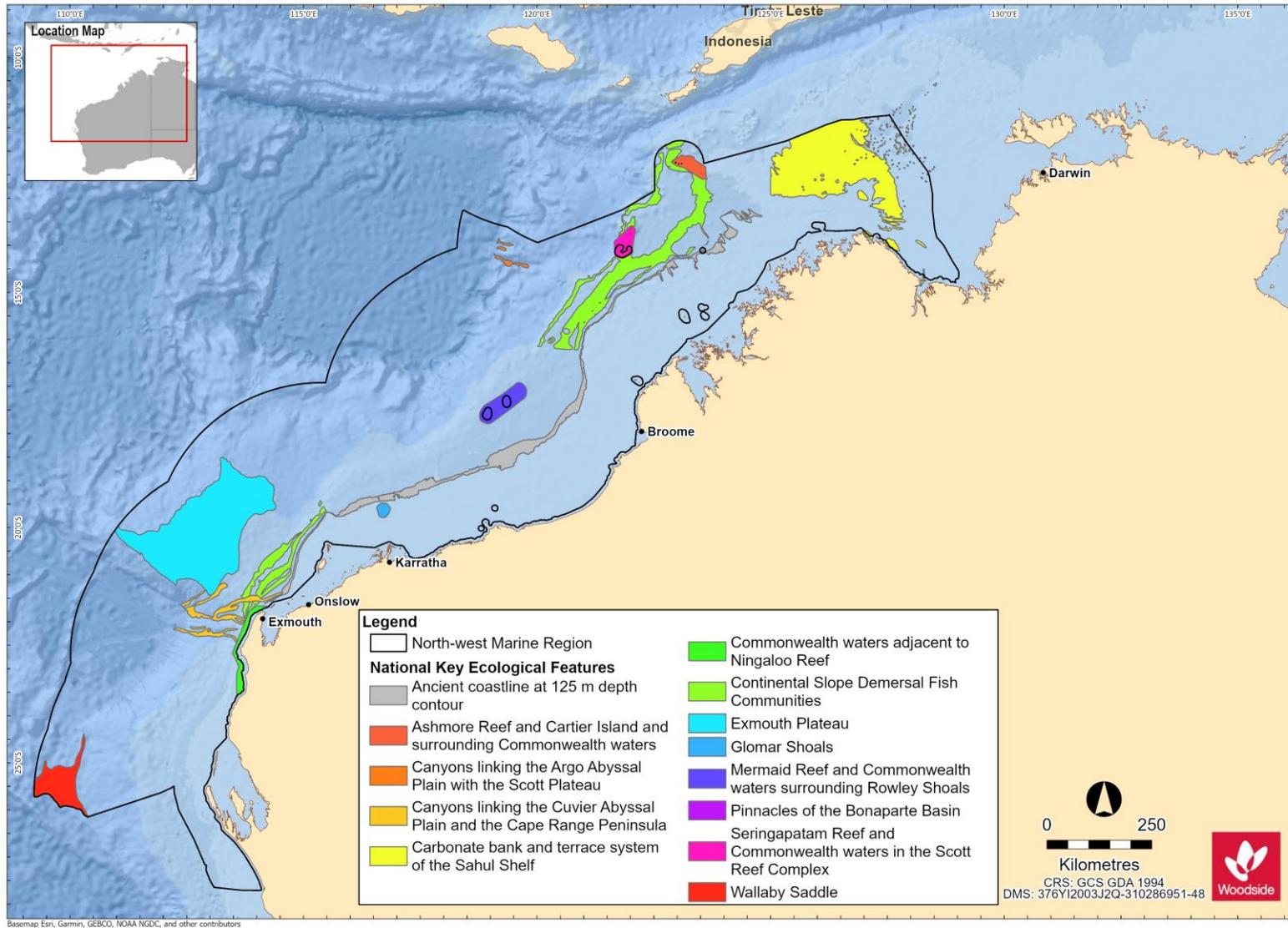


Figure 9-1 Key Ecological Features (KEFs) within the NWMR.

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Table 9-2 Key Ecological Features (KEF) within the SWMR

KEF Name	Values ¹	Description
Albany Canyons group and adjacent shelf break	High productivity and aggregations of marine life, and unique seafloor feature with ecological properties of regional significance Both benthic and demersal habitats within the feature are of conservation value	The Albany Canyons group is thought to be associated with small, periodic subsurface upwelling events, which may drive localised regions of high productivity. The canyons are known to be a feeding area for sperm whale and sites of orange roughly aggregations. Anecdotal evidence also indicates that this area supports fish aggregations that attract large predatory fish and sharks.
Ancient coastline at 90-120 m depth	Relatively high productivity and aggregations of marine life, and high levels of biodiversity and endemism The feature creates topographic complexity, that may facilitate benthic biodiversity and enhanced biological productivity	Benthic biodiversity and productivity occur where the ancient coastline forms a prominent escarpment, such as in the western Great Australian Bight, where the sea floor is dominated by sponge communities of significant biodiversity and structural complexity.
Cape Mentelle upwelling	Facilitates nutrient upwelling, supporting high productivity and diverse aggregations of marine life	The Cape Mentelle upwelling draws relatively nutrient-rich water from the base of the Leeuwin Current, up the continental slope and onto the inner continental shelf, where it results in phytoplankton blooms at the surface. The phytoplankton blooms provide the basis for an extended food chain characterised by feeding aggregations of small pelagic fish, larger predatory fish, seabirds, dolphins and sharks.
Commonwealth marine environment surrounding the Houtman Abrolhos Islands (and adjacent shelf break)	High levels of biodiversity and endemism within benthic and pelagic habitats	The Houtman Abrolhos Islands and surrounding reefs support a unique mix of temperate and tropical species, resulting from the southward transport of species by the Leeuwin Current over thousands of years. The Houtman Abrolhos Islands are the largest seabird breeding station in the eastern Indian Ocean. They support more than one million pairs of breeding seabirds.

KEF Name	Values ¹	Description
Commonwealth marine environment surrounding the Recherche Archipelago	Aggregations of marine life and high levels of biodiversity and endemism within benthic and demersal communities	The Recherche Archipelago is the most extensive area of reef in the SWMR. Its reef and seagrass habitat supports a high species diversity of warm temperate species, including 263 known species of fish, 347 known species of molluscs, 300 known species of sponges, and 242 known species of macroalgae. The islands also provide haul-out (resting areas) and breeding sites for Australian sea lions and New Zealand fur seals.
Commonwealth marine environment within and adjacent to the west-coast inshore lagoons	High productivity and aggregations of marine life within benthic and pelagic habitats Important for benthic productivity and recruitment for a range of marine species	These lagoons are important for benthic productivity, including macroalgae and seagrass communities, and breeding and nursery aggregations for many temperate and tropical marine species. They are important areas for the recruitment of commercially and recreationally important fish species. Extensive schools of migratory fish visit the area annually, including herring, garfish, tailor and Australian salmon.
Commonwealth marine environment within and adjacent to Geographe Bay	High productivity and aggregations of marine life, and high levels of biodiversity, recruitment within benthic and pelagic communities	Geographe Bay is known for its extensive beds of tropical and temperate seagrass that support a diversity of species, many of them not found anywhere else. The bay provides important nursery habitat for many species. Juvenile dusky whaler sharks use the shallow seagrass habitat as nursery grounds for several years, before ranging out to adult feeding grounds along the shelf break. The seagrass also provides valuable habitat for fish and invertebrates (Carruthers <i>et al.</i> , 2007). It is also an important resting area for migratory humpback whales.
Diamantina Fracture Zone	Unique seafloor feature with ecological properties of regional significance which apply to its benthic and demersal habitats	The Diamantina Fracture Zone is a rugged, deep- water environment of seamounts and numerous closely spaced troughs and ridges. Very little is known about the ecology of this remote, deep- water feature, but marine experts suggest that its size and physical complexity mean that it is likely to support deep-water communities characterised by high species diversity, with many species found nowhere else.
Naturaliste Plateau	Unique seafloor feature with ecological properties of regional significance including high species diversity and endemism which apply to its benthic and demersal habitats	The Naturaliste Plateau is Australia's deepest temperate marginal plateau. The combination of its structural complexity, mixed water dynamics and relative isolation indicate that it supports deep- water communities with high species diversity and endemism.
Perth Canyon and adjacent shelf break, and other west-coast canyons	An area of higher productivity that attracts feeding aggregations of deep-diving mammals and large predatory fish. It is also recognised as a unique seafloor feature with ecological properties of regional significance	The Perth Canyon is the largest known undersea canyon in Australian waters. Deep ocean currents rise to the surface, creating a nutrient-rich cold- water habitat attracting feeding aggregations of deep-diving mammals, such as pygmy blue whales and large predatory fish that feed on aggregations of small fish, krill and squid.

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KEF Name	Values ¹	Description
Western demersal slope and associated fish communities of the Central Western Province	Provides important habitat for demersal fish communities and supports species groups that are nationally or regionally important to biodiversity	The western demersal slope provides important habitat for demersal fish communities, with a high level of diversity and endemism. A diverse assemblage of demersal fish species below a depth of 400 m is dominated by relatively small benthic species such as grenadiers, dogfish and cucumber fish. Unlike other slope fish communities in Australia, many of these species display unique physical adaptations to feed on the sea floor (such as a mouth position adapted to bottom feeding), and many do not appear to migrate vertically in their daily feeding habits.
Western rock lobster	A species that plays a regionally important ecological role	This species is the dominant large benthic invertebrate in the region. The lobster plays an important trophic role in many of the inshore ecosystems of the SWMR. Western rock lobsters are an important part of the food web on the inner shelf, particularly as juveniles.

¹. Values description sourced from Marine bioregional plan for the South-west Marine Region (DSEWPAC, 2012b) and the Department of Agriculture, Water and the Environment (DAWE) SPRAT database

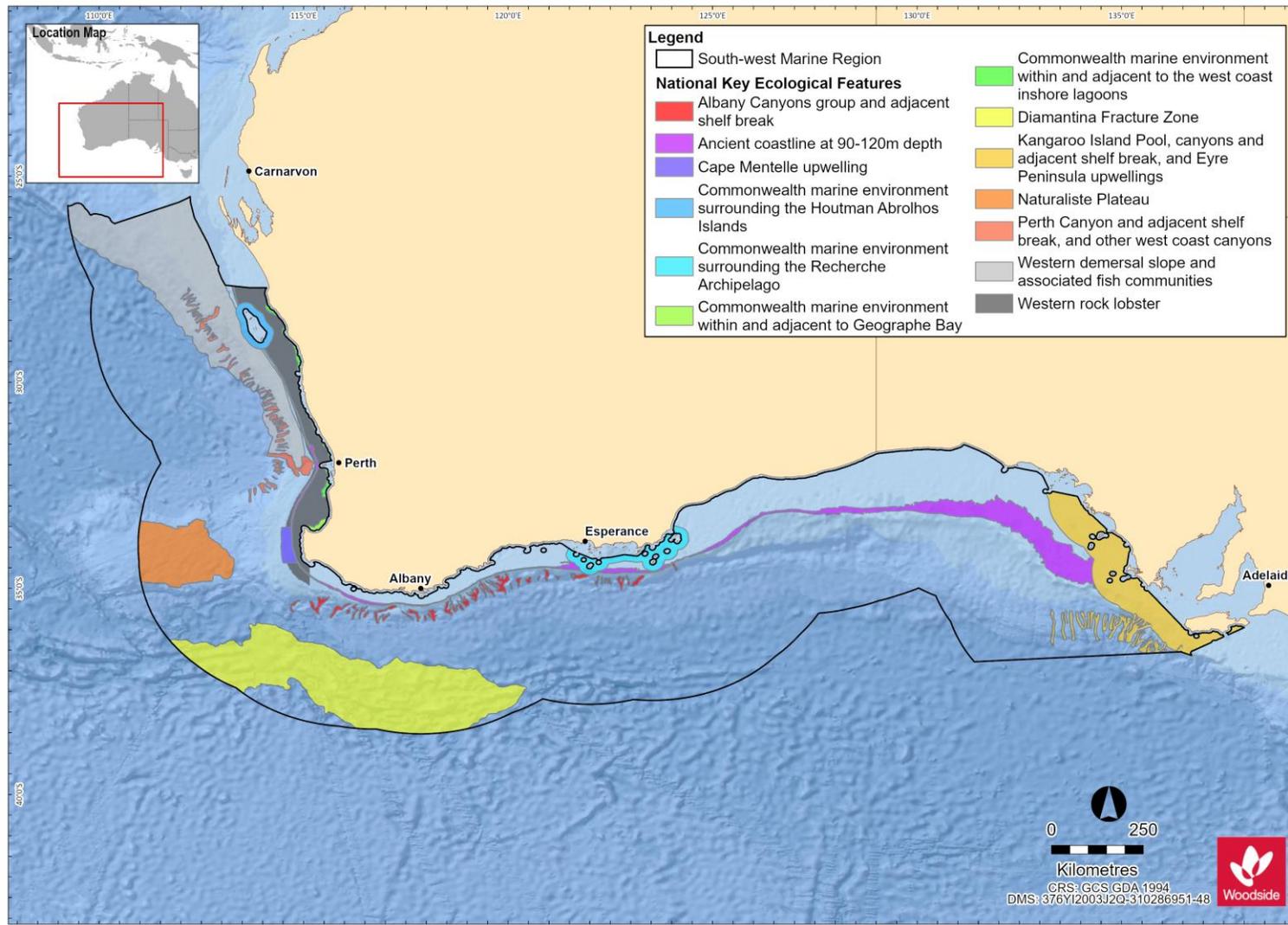


Figure 9-2. Key Ecological Features (KEFs) within the SWMR

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Table 9-3 Key Ecological Features (KEF) within the NMR

KEF Name	Values ¹	Description
Carbonate bank and terrace system of the Van Diemen Rise	Important for its role in enhancing biodiversity and local productivity relative to its surrounds and for supporting relatively high species diversity The feature has been identified as a sponge biodiversity hotspot (Przeslawski <i>et al.</i> 2014)	The bank and terrace system of the Van Diemen Rise is part of the larger system associated with the Sahul Banks to the north and Londonderry Rise to the east; it is characterised by terrace, banks, channels and valleys. The variability in water depth and substrate composition may contribute to the presence of unique ecosystems in the channels. Species present include sponges, soft corals and other sessile filter feeders associated with hard substrate sediments of the deep channels; epifauna and infauna include polychaetes and ascidians. Olive ridley turtles, sea snakes and sharks are also found associated with this feature.
Gulf of Carpentaria basin	Regional importance for biodiversity, endemism and aggregations of marine life relevant to benthic and pelagic habitats	The Gulf of Carpentaria basin is one of the few remaining near-pristine marine environments in the world. Primary productivity in the Gulf of Carpentaria basin is mainly driven by cyanobacteria that fix nitrogen but is also strongly influenced by seasonal processes. The soft sediments of the basin are characterised by moderately abundant and diverse communities of infauna and mobile epifauna dominated by polychaetes, crustaceans, molluscs, and echinoderms. The basin also supports assemblages of pelagic fish species including planktivorous and schooling fish, with top predators such as shark, snapper, tuna, and mackerel.
Gulf of Carpentaria coastal zone	High productivity, aggregations of marine life (including several endemic species) and high biodiversity compared to broader region	Nutrient inflow from rivers adjacent to the NMR generates higher productivity and more diverse and abundant biota within the Gulf of Carpentaria coastal zone than elsewhere in the region. The coastal zone is near pristine and supports many protected species such as marine turtles, dugongs, and sawfishes. Ecosystem processes and connectivity remain intact; river flows are mostly uninterrupted by artificial barriers and healthy, diverse estuarine and coastal ecosystems support many species that move between freshwater and saltwater environments.
Pinnacles of the Bonaparte Basin	Unique seafloor feature with ecological properties of regional significance Provide areas of hard substrate in an otherwise soft sediment environment and so are important for sessile species Recognised as a biodiversity hotspot for sponges The Pinnacles of the Bonaparte Basin KEF is located within both the NWMR and NMR (refer Table 9-1)	Covering more than 520 km ² within the Bonaparte Basin, this feature contains the largest concentration of pinnacles along the Australian margin. The Pinnacles of the Bonaparte Basin are thought to be the eroded remnants of underlying strata; it is likely that the vertical walls generate local upwelling of nutrient-rich water, leading to phytoplankton productivity that attracts aggregations of planktivorous and predatory fish, seabirds and foraging turtles.

KEF Name	Values ¹	Description
Plateaux and saddle north-west of the Wellesley Islands	High species abundance, diversity and endemism of marine life	Abundance and species density are high in the plateaux and saddle as a result of increased biological productivity associated with habitats rather than currents. Submerged reefs support corals that are typical of northern Australia, including corals that have bleach-resistant zooxanthellae; and particular reef fish species that are different to those found elsewhere in the Gulf of Carpentaria. Species present include marine turtles and reef fish such as coral trout, cod, mackerel, and shark. Seabirds frequent the plateaux and saddle, most likely due to the presence of predictable food resources for feeding offspring.
Shelf break and slope of the Arafura Shelf	The Shelf break and slope of the Arafura Shelf is defined as a key ecological feature for its ecological significance associated with productivity emanating from the slope It also forms part of a unique biogeographic province (Last <i>et al.</i> , 2005)	The shelf break and slope of the Arafura Shelf is characterised by continental slope and patch reefs and hard substrate pinnacles. The ecosystem processes of the feature are largely unknown in the region; however, the Indonesian Throughflow and surface wind-driven circulation are likely to influence nutrients, pelagic dispersal and species and biological productivity in the region. Biota associated with the feature is largely of Timor–Indonesian Malay affinity.
Submerged coral reefs of the Gulf of Carpentaria	High aggregations of marine life, biodiversity and endemism Twenty per cent of the reefs found in the NMR are situated within this KEF (Harris <i>et al.</i> , 2007)	The submerged coral reefs of the Gulf of Carpentaria are characterised by submerged patch, platform and barrier reefs that form a broken margin around the perimeter of the Gulf of Carpentaria basin, rising from the sea floor at depths of 30–50 m. These reefs provide breeding and aggregation areas for many fish species including mackerel and snapper and offer refuges for sea snakes and apex predators such as sharks. Coral trout species that inhabit the submerged reefs are smaller than those found in the Great Barrier Reef and may prove to be an endemic sub-species.
Tributary Canyons of the Arafura Depression	High productivity and high levels of species diversity and endemism of marine life within the benthic and pelagic habitats of the feature	The tributary canyons are approximately 80–100 m deep and 20 km wide. The largest of the canyons extend some 400 km from Cape Wessel into the Arafura Depression, and are the remnants of a drowned river system that existed during the Pleistocene era. Sediments in this feature are mainly calcium-carbonate rich, although sediment type varies from sandy substrate to soft muddy sediments and hard, rocky substrate. Marine turtles, deep sea sponges, barnacles and stalked crinoids have all been identified in the area.

¹. Values description sourced from *Marine bioregional plan for the North Marine Region (DSEWPAC, 2012c)* and *Department of Agriculture, Water and the Environment (DAWE) SPRAT database*.

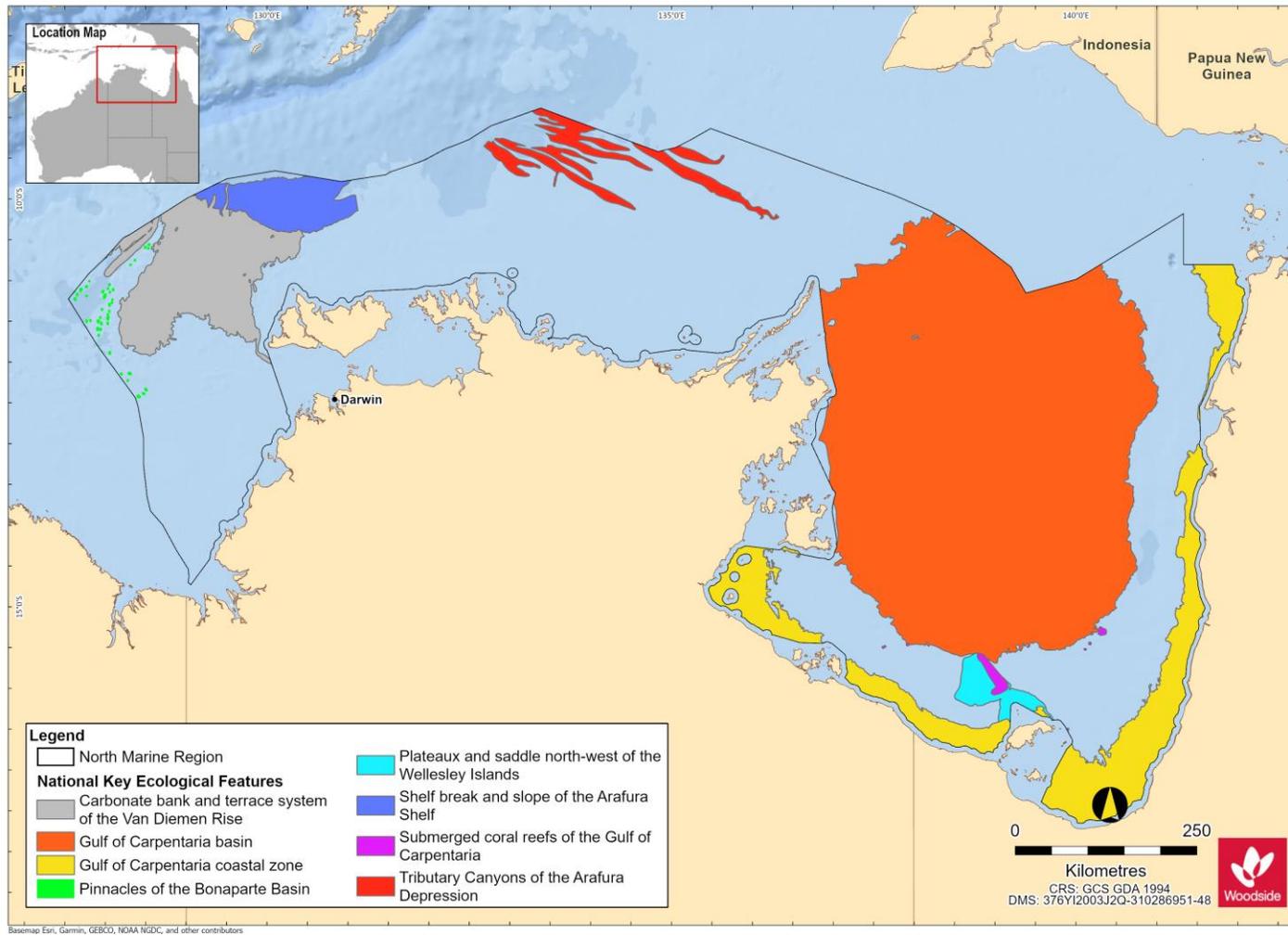


Figure 9-3. Key Ecological Features (KEFs) within the NMR

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10. PROTECTED AREAS

10.1 Regional Context

Protected areas included World Heritage Properties, National Heritage Places, Wetlands of International Importance, Australian Marine Parks, State Marine Parks and Reserves, Threatened Ecological Communities and the Australian Whale Sanctuary. The PMST Reports (**Appendix A**) shows that there are twenty-nine protected areas found in the NWMR, eighteen in the SWMR and nine in the NMR.

Table 10-1, **Table 10-2** and **Table 10-3** outline the protected areas of each of the marine regions NWMR, SWMR and NMR, respectively.

10.2 World Heritage Properties

Properties nominated for World Heritage listing are inscribed on the list only after they have been carefully assessed as representing the best examples of the world's cultural and natural heritage. Only World Heritage listings classed as natural are discussed in this section. World Heritage sites classed as cultural are discussed in **Section 11**.

The list of Australia's World Heritage Properties and the PMST Reports (**Appendix A**) show two World Heritage Properties within the NWMR (**Table 10-1**), no World Heritage Properties within the SWMR (**Table 10-2**), and though not reported in the NMR PMST Report, Kakadu National Park and World Heritage Area is included in **Table 10-3**.

10.3 National and Commonwealth Heritage Places - Natural

The National Heritage List is Australia's list of natural, historic, and Indigenous places of outstanding significance to the nation. The National Heritage List Spatial Database describes the place name, class (Indigenous, natural, historic), and status. Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values which are owned or controlled by the Australian Government.

Only National and Commonwealth Heritage Places classed as natural are discussed in this section. Heritage Places classed as indigenous or historic are discussed in **Section 11**.

A search of the National Heritage List Spatial Database and the PMST Reports (**Appendix A**) identified three natural National Heritage Places in the NWMR (**Table 10-1**), three in the SWMR (**Table 10-2**) and for the NMR, Kakadu National Park (not included in the PMST report) is included in **Table 10-3**.

A search of the Commonwealth Heritage List identified four natural commonwealth heritage places within the NWMR (**Table 10-1**).

10.4 Wetlands of International Importance (listed under the Ramsar Convention)

Australia has 65 Ramsar wetlands that cover >8.3 million ha. Ramsar wetlands are those that are representative, rare, or unique wetlands, or that are important for conserving biological diversity.

The List of Wetlands of International Importance held under the Ramsar Convention and the PMST Reports (**Appendix A**) identified four Ramsar Sites with coastal features within the NWMR (**Table 10-1**), four in the SWMR (**Table 10-2**) and two for the New Territory, included for the NMR (**Table 10-3**).

10.5 Australian Marine Parks

Australian Marine Parks (AMPs), proclaimed under the EPBC Act in 2007 and 2013, are located in Commonwealth waters that start at the outer edge of State and Territory waters, generally three

nautical miles (~5.5 km) from the shore, and extend to the outer boundary of Australia's EEZ, 200 nm (~370 km) from the shore.

PMST Reports (**Appendix A**) show sixteen AMPs within the NWMR (**Table 10-1**), ten within the SWMR (**Table 10-2**) and eight within the NMR (**Table 10-3**).

10.6 Threatened Ecological Communities

No Threatened Ecological Communities (TECs) as listed under the EPBC Act are known to occur within the marine waters of the NWMR, SWMR or NMR as indicated by the PMST Reports (**Appendix A**).

10.7 Australian Whale Sanctuary

The Australian Whale Sanctuary has been established to protect all whales and dolphins found in Australian waters. Under the EPBC Act all cetaceans (whales, dolphins and porpoises) are protected in Australian waters.

The Australian Whale Sanctuary includes all Commonwealth waters from the three nautical mile State/Territory waters limit out to the boundary of the EEZ (i.e. out to 200 nm and further in some places). Within the Sanctuary it is an offence to kill, injure or interfere with a cetacean. Severe penalties apply to anyone convicted of such offences.

10.8 State Marine Parks and Reserves

State Marine Parks and Reserves, proclaimed under the *Conservation and Land Management Act 1984* (CALM Act), are located in State waters and vested in the WA Conservation and Parks Commission. State Marine Parks and Reserves of Western Australia have been considered, with 14 occurring in the NWMR (**Table 10-1**) and six occurring in the SWMR (**Table 10-2**).

10.9 Summary of Protected Areas within the NWMR

Table 10-1 Protected Areas within the NWMR

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
World Heritage Properties						
Shark Bay World Heritage Property	-	-	✓		The Shark Bay World Heritage Property is adjacent to the Shark Bay AMP and was included on the World Heritage List in 1991.	Universal values of the Shark Bay World Heritage Property include large and diverse seagrass beds, stromatolites and populations of dugong and threatened species. Inscribed under Natural Criteria vii, viii, ix and x.
The Ningaloo Coast World Heritage Property	-	-	✓		The Ningaloo Coast World Heritage Property lies within the Ningaloo AMP and was included on the World Heritage List in 2011.	Universal values of the Ningaloo Coast World Heritage Property include high marine species diversity and abundance; in particular, Ningaloo Reef supports both tropical and temperate marine reptiles and mammals. Inscribed under Natural Criteria vii and x.
National Heritage Places - Natural						
Shark Bay	-	-	✓		The Shark Bay National Heritage Place consists of the same area included in the Shark Bay World Heritage Property (refer above) and was established on the National Heritage List in 2007.	The national heritage place has a number of exceptional natural features, including one of the largest and most diverse seagrass beds in the world, colonies of stromatolites and rich marine life including a large population of dugongs, and also provides a refuge for a number of other globally threatened species. Shark Bay meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
The Ningaloo Coast	-	-	✓		The Ningaloo Coast National Heritage Place consists of the same area included in the Ningaloo	The Ningaloo Coast contains one of the best developed near-shore reefs in the world, being home to rugged limestone peninsulas, spectacular coral and sponge gardens and the whale shark.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Coast World Heritage Property (refer above) and was established on the National Heritage List in 2010.	The Ningaloo Coast meets the national heritage listing criteria a, b, c, d, and f.
The West Kimberley	✓	✓	-		The West Kimberley National Heritage Place covers an area of around 192,000 km ² located in the north-west of Australia from Broome to Wyndham, and was established on the National Heritage List in 2011.	The Kimberley plateau, north-western coastline and northern rivers of the West Kimberley provide a vital refuge for many native plants and animals that are found nowhere else or which have disappeared from much of the rest of Australia. In addition, Roebuck Bay is internationally recognised as one of Australia's most significant sites for migratory wading birds. The national heritage place also contains a remarkable history of Aboriginal occupation, with many places of indigenous sacred value. The West Kimberley meets the national heritage listing criteria a, b, c, d, e, f, g, h and i.
Commonwealth Heritage Places - Natural						
Mermaid Reef – Rowley Shoals	-	✓	-	N/A	The Mermaid Reef – Rowley Shoals Commonwealth Heritage Place is located within the boundary of the Mermaid Reef Marine National Nature Reserve. The site was listed as a Commonwealth Heritage Place in 2004.	The Mermaid Reef-Rowley Shoals Commonwealth Heritage Place is regionally important for the diversity of its fauna and together with Clerke and Imperieuse reefs, has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fishes known previously only from Indonesian waters. Rowley Shoals is important for benchmark studies as one of the few places off the north-west coast of Western Australia which have been the site of major biological collection trips by the WA Museum.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ashmore Reef National Nature Reserve	✓	-	-		The Ashmore Reef Commonwealth Heritage Place is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	Ashmore Reef has major significance as a staging point for wading birds migrating between Australia and the Northern Hemisphere and supports high concentrations of breeding seabirds, many of which are nomadic and typically breed on small isolated islands. Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates. The Ashmore Reef Commonwealth Heritage Place is significant for its history of human occupation and use. The island is believed to have been visited by Indonesian fisherman since the early eighteenth century. The islands were used both for fishing and as a staging point for voyages to the southern reefs off Australia's coast.
Scott Reef and Surrounds – Commonwealth Area	✓	-	-		Scott Reef and Surrounds Commonwealth Heritage Place is located within the Western Australian Coastal Waters surrounding North and South Scott Reef. The site was listed as a Commonwealth Heritage Place in 2004.	The Scott Reef and Surrounds Commonwealth Heritage Place is regionally important for the diversity of its fauna and has biogeographical significance due to the presence of species which are at, or close to, the limits of their geographic ranges, including fish known previously only from Indonesian waters. Scott Reef is recognised as important for scientific research and benchmark studies due to its age, the extensive documentation of its geophysical and physical environmental characteristics and its use as a site of major biological collection trips and surveys by the WA Museum and the Australian Institute of Marine Science.

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Ningaloo Marine Area – Commonwealth Waters	-	-	✓		The Ningaloo Marine Area Commonwealth Heritage Place is located within the Commonwealth waters of the Ningaloo Marine Park (refer AMPs below). The site was listed as a Commonwealth Heritage Place in 2004.	The Ningaloo Marine Area Commonwealth Heritage Place provides a migratory pathway for humpback whales and foraging habitat for whale sharks. The place is an important breeding area for billfish and manta ray. The Ningaloo Marine Area provides opportunities for scientific research relating to aspects of the area's unique features including tourism (marine ecology, whales, turtles, whale sharks, fish and oceanography).
Wetlands of International Importance (Ramsar)						
Ashmore Reef National Nature Reserve	✓	-	-	Ramsar	The Ashmore Reef Ramsar site is located within the boundary of the Ashmore Reef Marine Park (refer AMPs below). The site was listed under the Ramsar Convention in 2002.	Ashmore Reef Ramsar site supports internationally significant populations of seabirds and shorebirds, is important for turtles (green, hawksbill and loggerhead) and dugong, and has the highest diversity of hermatypic (reef-building) corals on the WA coast. It is known for its abundance and diversity of sea snakes. However, since 1998 populations of sea snakes at Ashmore Reef have been in decline.
Eighty Mile Beach	-	✓	-	Ramsar	The Eighty Mile Beach Ramsar site covers an area of 1250 km ² , located along a long section of the Western Australian coastline adjacent to the Eighty Mile Beach AMP (refer below).	The Eighty Mile Beach Ramsar site includes saltmarsh and a raised peat bog more than 7000 years old. The site contains the most important wetland for waders in north-western Australia, supporting up to 336,000 birds, and is especially important as a land fall for waders migrating south for the austral summer.
Roebuck Bay	-	✓	-	Ramsar	The Roebuck Bay Ramsar site covers an area of 550	The Roebuck Bay Ramsar site is recognised as one of the most important areas for migratory shorebirds in Australia.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² , located south of Broome and adjacent to the Roebuck AMP (refer below).	The site regularly supports over 100,000 waterbirds, with numbers being highest in the austral spring when migrant species breeding in the Palearctic stop to feed during migration.
Ord River Floodplain	✓			Ramsar	The Ord River Floodplain Ramsar Site is in the East Kimberley region and encompasses an extensive system of river, seasonal creek, tidal mudflat, and floodplain wetlands. The Ramsar Site is a nursery, feeding and/or breeding ground for migratory birds, waterbirds, fish, crabs, prawns, and crocodiles.	The site represents the best example of wetlands associated with the floodplain and estuary of a tropical river system in the Tanami-Timor Sea Coast Bioregion in the Kimberley. In addition, the False Mouths of the Ord are the most extensive mudflat and tidal waterway complex in Western Australia.
Wetlands of National Importance (DAWE, 2019)						
Ashmore Reef	✓	-	-		Ashmore Reef is a shelf-edge platform reef located among the Sahul Banks of north-western Australia. It covers an area of 583 km ² and consists of three islets surrounded by intertidal reef and sand flats.	These islets are major seabird nesting sites with 20 breeding species recorded to date. The total bird population has been estimated to exceed 100,000 during the peak breeding season. The marine reserve also has the highest diversity of marine fauna of the reefs on the NWS and differs from other reefs and coastal areas in the region. The area meets criteria 1, 3, 4 and 5 for inclusion on the Directory of Important Wetlands in Australia.
Mermaid Reef	-	✓	-		Mermaid Reef Marine Park covers an area of around 540 km ² , located ~280 km west north-west of Broome, and is the most north-easterly atoll of the Rowley Shoals.	The reefs of the Mermaid Reef Marine Park have biogeographic value due to the presence of species that are at or close to the limit of their distribution. The coral communities are one of the special values of Mermaid Reef. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.

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	Browse	NWS/S	NW Cape			
Exmouth Gulf East	-	-	✓		Exmouth Gulf East covers an area of 800 km ² and includes wetlands in the eastern part of Exmouth Gulf, from Giralia Bay; to Urala Creek, Locker Point.	The Exmouth Gulf East is an outstanding example of tidal wetland systems of low coast of north-west Australia, with well- developed tidal creeks, extensive mangrove swamps and broad saline coastal flats. The site is one of the major population centres for dugong in WA and its seagrass beds and extensive mangroves provide nursery and feeding areas for marine fishes and crustaceans in the Gulf. The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia.
Hamelin Pool	-	-	✓		Hamelin Pool covers an area of 900 km ² in the far south-east part of Shark Bay.	Hamelin Pool is an outstanding example of a hypersaline marine embayment and supports extensive microbialite (subtidal stromatolite) formations, which are the most abundant and diverse examples of growing marine microbialites in the world. The area meets criteria 1 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Shark Bay East	-	-	✓		Shark Bay East covers a 250 km area of coastline comprising tidal wetlands, and marine waters less than 6 m deep at low tide, in the east arm of Shark Bay.	The site is an outstanding example of a very large, shallow marine embayment, with particularly extensive occurrence of seagrass beds and substantial areas of intertidal mud/sandflats and mangrove swamp. The site supports what is probably the world's largest discrete population of dugong; it is also a major nursery and/or feeding area for turtles, rays, sharks, other fishes, prawns and other marine fauna; and is a major migration stop-over area for shorebirds. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018a)						
Abrolhos Marine Park	-	-	✓	II, IV, VI	Abrolhos Marine Park is located adjacent to the WA Houtman Abrolhos Islands, covering a large offshore	Abrolhos Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					<p>area of 88,060 km² extending from the WA State waters boundary to the edge of Australia's EEZ.</p> <p>The Abrolhos Marine Park is located within both the NWMR and SWMR.</p>	<ul style="list-style-type: none"> • Central Western Province • Central Western Shelf Province • Central Western Transition • South-west Shelf Transition <p>It includes seven KEFs: Commonwealth marine environment surrounding the Houtman Abrolhos Islands; Demersal slope and associated fish communities of the Central Western Province; Mesoscale eddies; Perth Canyon and adjacent shelf break, and other west-coast canyons; Western rock lobster; Ancient coastline at 90-120 m depth; and Wallaby Saddle.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and breeding habitat for seabirds, foraging habitat for Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales. The AMP is adjacent to the northernmost Australian sea lion breeding colony in Australia on the Houtman Abrolhos Islands.</p>
Carnarvon Canyon Marine Park	-	-	✓	IV	Carnarvon Canyon Marine Park covers an area of 6177 km ² , located ~300 km north-west of Carnarvon.	Carnarvon Canyon Marine Park is significant because it contains habitats, species and ecological communities associated with the Central Western Transition bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. There is limited information about species' use of this AMP.
Shark Bay Marine Park	-	-	✓	VI	Shark Bay Marine Park covers an area of 7443 km ² located ~60 km offshore of Carnarvon, adjacent to the Shark Bay World Heritage Property and National Heritage Place.	<p>Shark Bay Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions:</p> <ul style="list-style-type: none"> • Central Western Shelf Province • Central Western Transition. <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under</p>

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, and a migratory pathway for humpback whales.
Gascoyne Marine Park	-	-	✓	II, IV, VI	Gascoyne Marine Park covers an area of 81,766 km ² , located ~20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Marine Park.	Gascoyne Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province. It includes four KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; Continental slope demersal fish communities; and Exmouth Plateau. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, and foraging habitat and migratory pathway for pygmy blue whales.
Ningaloo Marine Park	-	-	✓	II, IV	Ningaloo Marine Park covers an area of 2435 km ² , stretching ~300 km along the west coast of the Cape Range Peninsula, and is adjacent to the WA Ningaloo Marine Park and Gascoyne Marine Park.	Ningaloo Marine Park is significant because it contains habitats, species and ecological communities associated with four bioregions: <ul style="list-style-type: none"> • Central Western Shelf Transition • Central Western Transition • Northwest Province • Northwest Shelf Province. It includes three KEFs: Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula; Commonwealth waters adjacent to Ningaloo Reef; and Continental slope demersal fish communities. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
						or foraging habitat for seabirds, interesting habitat for marine turtles, a migratory pathway for humpback whales, foraging habitat and migratory pathway for pygmy blue whales, breeding, calving, foraging and nursing habitat for dugong and foraging habitat for whale sharks.
Montebello Marine Park	-	✓	-	VI	Montebello Marine Park covers an area of 3413 km ² , located offshore of Barrow Island and 80 km west of Dampier extending from the WA State waters boundary, and is adjacent to the WA Barrow Island and Montebello Islands Marine Parks.	Montebello Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. It includes one KEF: Ancient coastline at 125 m depth contour. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds, interesting, foraging, mating, and nesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for whale sharks.
Dampier Marine Park	-	✓	-	II, IV, VI	Dampier Marine Park covers an area of 1252 km ² , located ~10 km north-east of Cape Lambert and 40 km from Dampier extending from the WA State waters boundary.	Dampier Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province bioregion. The AMP provides protection for offshore shelf habitats adjacent to the Dampier Archipelago, and the area between Dampier and Port Hedland, and is a hotspot for sponge biodiversity. The AMP supports a range of species including those listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, interesting habitat for marine turtles and a migratory pathway for humpback whales.
Eighty Mile Beach Marine Park	-	✓	-	VI	Eighty Mile Beach Marine Park covers an area of 10,785 km ² , located ~74 km north-east of Port Hedland, adjacent to the	Eighty Mile Beach Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists of shallow shelf habitats, including terrace, banks and shoals.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					WA Eighty Mile Beach Marine Park.	The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, interesting and nesting habitat for marine turtles, foraging, nursing and pupping habitat for sawfishes and a migratory pathway for humpback whales.
Argo – Rowley Terrace Marine Park	✓	✓	-	II, VI, VI (Trawl)	Argo-Rowley Terrace Marine Park covers an area of 146,003 km ² , located ~270 km north-west of Broome, and extends to the limit of Australia's EEZ. The AMP is adjacent to the Mermaid Reef Marine Park and the WA Rowley Shoals Marine Park.	Argo-Rowley Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Northwest Transition • Timor Province. It includes two KEFs: Canyons linking the Argo Abyssal Plain with the Scott Plateau; and Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.
Mermaid Reef Marine Park	-	✓	-	II	Mermaid Reef Marine Park covers an area of 540 km ² , located ~280 km north-west of Broome, adjacent to the Argo-Rowley Terrace Marine Park and ~13 km from the WA Rowley Shoals Marine Park. Mermaid Reef is one of three reefs forming the Rowley Shoals. The other two are Clerke Reef and Imperieuse Reef, to the	Mermaid Reef Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Transition. It includes one KEF: Mermaid Reef and Commonwealth waters surrounding Rowley Shoals. The Rowley Shoals have been described as the best geological examples of shelf atolls in Australian waters. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					south-west of the AMP, which are included in the WA Rowley Shoals Marine Park.	
Roebuck Marine Park	-	✓	-	VI	Roebuck Marine Park covers an area of 304 km ² , located ~12 km offshore of Broome, and is adjacent to the WA Yawuru Nagulagun/Roebuck Bay Marine Park.	Roebuck Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Province and consists entirely of shallow continental shelf habitat. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and resting habitat for seabirds, foraging and internesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for dugong.
Kimberley Marine Park	✓	✓	-	II, IV, VI	Kimberley Marine Park covers an area of 74,469 km ² , located ~100 km north of Broome, extending from the WA State waters boundary north from the Lacepede Islands to the Holothuria Banks offshore from Cape Bougainville.	Kimberley Marine Park is significant because it includes habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • Northwest Shelf Province • Northwest Shelf Transition • Timor Province. It includes two KEFs: Ancient coastline at 125 m depth contour; and Continental slope demersal fish communities. The AMP supports a range of species, including protected species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and nesting habitat for marine turtles, breeding, calving and foraging habitat for inshore dolphins, calving, migratory pathway and nursing habitat for humpback whales, migratory pathway for pygmy blue whales, foraging habitat for dugong and foraging habitat for whale sharks.
Ashmore Reef Marine Park	✓	-	-	Ia, IV	Ashmore Reef Marine Park covers an area of 583 km ² , located ~630 km north of	Ashmore Reef Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two KEFs:

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					Broome and 110 km south of the Indonesian island of Roti. The AMP is located in Australia's External Territory of Ashmore and Cartier Islands and is within an area subject to a Memorandum of Understanding (MoU) between Indonesia and Australia, known as the MoU Box.	Ashmore Reef and Cartier Island and surrounding Commonwealth waters; and Continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding, foraging and resting habitat for seabirds, resting and foraging habitat for migratory shorebirds, foraging, mating, nesting and internesting habitat for marine turtles, foraging habitat for dugong, and a migratory pathway for pygmy blue whales.
Cartier Island Marine Park	✓	-	-	Ia	Cartier Island Marine Park covers an area of 172 km ² , located ~45 km south-east of Ashmore Reef Marine Park and 610 km north of Broome. It is also located in Australia's External Territory of Ashmore and Cartier Islands and within an area subject to an MoU between Indonesia and Australia, known as the MoU Box.	Cartier Island Marine Park is significant because it includes habitats, species and ecological communities associated with the Timor Province. It includes two key ecological features: Ashmore Reef and Cartier Island and surrounding Commonwealth waters and continental slope demersal fish communities. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting, nesting and foraging habitat for marine turtles and foraging habitat for whale sharks. The AMP is also internationally significant for its abundance and diversity of sea snakes, some of which are listed species under the EPBC Act.
Joseph Bonaparte Gulf Marine Park	✓	-	-	VI	Joseph Bonaparte Gulf Marine Park covers an area of 8597 km ² and is located ~15 km west of Wadeye, NT, and ~90 km north of Wyndham, WA, in the Joseph Bonaparte Gulf.	Joseph Bonaparte Gulf Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It includes one KEF: Carbonate bank and terrace system of the Sahul Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					It is adjacent to the WA North Kimberley Marine Park. The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR.	the EPBC Act. BIAs within the AMP include foraging habitat for marine turtles and the Australian snubfin dolphin.
Oceanic Shoals Marine Park	✓	-	-	II, IV, VI	Oceanic Shoals Marine Park covers an area of 71,743 km ² and is located west of the Tiwi Islands, ~155 km north-west of Darwin, NT and 305 km north of Wyndham, WA. The Oceanic Shoals Marine Park is located within both the NWMR and NMR.	Oceanic Shoals Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition bioregion. It contains four KEFs: Carbonate bank and terrace systems of the Van Diemen Rise; Carbonate bank and terrace systems of the Sahul Shelf; Pinnacles of the Bonaparte Basin; and Shelf break and slope of the Arafura Shelf. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging and interesting habitat for marine turtles.
State Marine Parks and Reserves						
North Kimberley Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The North Kimberley Marine Park covers approx. 18,450 km ² with its south-western boundary located ~270 km north-east of Derby.	The coral reefs of the north Kimberley have the greatest diversity in Western Australia and are some of the most pristine and remarkable reefs in the world. The park surrounds more than 1000 islands and is home to listed species such as dugongs, marine turtles, and sawfishes (DPAW, 2016a).
Lalang-garram / Horizontal Falls Marine Park and North Lalang-garram Marine Park (jointly managed)	✓	-	-	Sanctuary, Special Purpose and General Use Zones	The Lalang-garram / Horizontal Falls Marine Park covers ~3530 km ² from Talbot Bay in the west and Glenelg River in the east. The North Lalang-garram Marine Park covers ~1100	The Lalang-garram / Horizontal Falls Marine Park's most celebrated attraction is created by massive tides of up to 10 m and narrow gaps in two parallel tongues of land meaning the tide falls faster than the water can escape, producing 'horizontal falls'. There are also islands with fringing coral reefs and mangrove-lined creeks and bays. The North Lalang-garram Marine Park has a number of islands fringed with coral reef and has been identified as an

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
					km ² between Camden Sound and North Kimberley Marine Parks.	ecological hotspot and supports more than 1% of the world's population of brown boobies, with up to 2000 breeding pairs. About 500 pairs of crested terns also nest on the island (DPAW, 2016b).
Lalang-garram / Camden Sound Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	Lalang-garram / Camden Sound Marine Park covers 7050 km ² located about 150 km north of Derby.	The Lalang-garram / Camden Sound Marine Park is the most important humpback whale nursery in the Southern Hemisphere. It also features the spectacular coastal Montgomery Reef. The marine park is home to six species of threatened marine turtle. Australian snubfin and Indo-Pacific humpback dolphins, dugongs, saltwater crocodiles, and several species of sawfish (DPAW, 2013).
Rowley Shoals Marine Park	-	✓	-	Sanctuary, Recreation and General Use Zones	The Rowley Shoals comprise of three reef systems, Mermaid Reef, Clerke Reef and Imperieuse Reef, all 30-40 km apart. These reef systems are located ~300 km west north-west of Broome.	The three coral atolls of the Rowley Shoals Marine Park comprise of shallow lagoons inhabited by diverse corals and abundant marine life, each covering around 80 km ² at the edge of Australia's continental shelf. Further offshore, the seafloor slopes away to the abyssal plain, some 6000 m below. Undersea canyons slice the slope; these features are commonly associated with diverse communities of deep-water corals and sponges and create localised upwellings that aggregate pelagic species like tunas and billfish (DEC, 2007a).
Yawuru Nagulagun / Roebuck Bay Marine Park	-	✓	-	Special Purpose Zone	Yawuru Nagulagun / Roebuck Bay Marine Park is a series of intertidal flats lying on the coast to the south-east of Broome.	Roebuck Bay is an internationally significant wetland and one of the most important feeding grounds for migratory shorebirds in Australia. Australian snubfin and Australian humpback dolphins frequent the waters and humpback whales pass through on their annual migration. Flatback turtles nest on the shores and are found in the bay's waters with other sea turtle species. Seagrass and macroalgae communities provide food for protected species such as the dugong and flatback turtle (DPAW, 2016c).
Eighty Mile Beach Marine Park	-	✓	-	Sanctuary, Recreation, Special	Eighty Mile Beach Marine Park covers ~2000 km ² stretching across 220km of	Eighty Mile Beach Marine Park is one of the world's most important feeding grounds for small wading birds that migrate to the area each summer, travelling from countries

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	Browse	NWS/S	NW Cape			
				Purpose and General Use Zones	coastline between Port Hedland and Broome.	thousands of kilometres away. The marine park is a major nesting area for flatback turtles which are found only in northern Australia. Sawfishes, dugongs, dolphins and millions of invertebrates inhabit the sand and mud flats, seagrass meadows, coral reefs and mangroves (DPAW, 2014).
Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area (jointly managed)	-	✓	-	Sanctuary, Recreation, General Use and Special Purpose Zones	The Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area are located off the north-west coast of WA, ~1600 km north of Perth, and cover areas of ~583 km ² , 42 km ² and 1,147 km ² , respectively.	The Montebello/Barrow islands marine conservation reserves have very complex seabed and island topography, resulting in a myriad of different habitats subtidal coral reefs, macroalgal and seagrass communities, subtidal soft-bottom communities, rocky shores and intertidal reef platforms, which support a rich diversity of invertebrates and finfish. The reserves are important breeding areas for several species of marine turtles and seabirds, which use the undisturbed sandy beaches for nesting. Humpback whales migrate through the reserves and dugongs occur in the shallow warm waters (DEC, 2007b).
Ningaloo Marine Park and Muiron Islands Marine Management Area (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Ningaloo Marine Park and Muiron Islands Marine Management Area are located off the North-west Cape of WA, ~1200 km north of Perth, and cover areas of ~2633 km ² and 286 km ² , respectively.	Ningaloo Reef is the largest fringing coral reef in Australia. Temperate and tropical currents converge in the Ningaloo region resulting in highly diverse marine life including spectacular coral reefs, abundant fishes and species with special conservation significance such as turtles, whale sharks, dugongs, whales and dolphins. The region has diverse marine communities including mangroves, algae and filter-feeding communities and has high water quality. These values contribute to the Ningaloo Marine Park being regarded as the State's premier marine conservation icon. The Muiron Islands Marine Management Area is also important, containing a very diverse marine environment, with coral reefs, filter-feeding communities and macroalgal beds. In addition, the Islands are important seabird and green turtle nesting areas. (CALM, 2005a).

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
	Browse	NWS/S	NW Cape			
Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	The Shark Bay Marine Park and Hamelin Pool Marine Nature Reserves are located 400 km north of Geraldton, covering areas of ~7487 km ² and 1270 km ² , respectively.	Seagrass covers over 4000 km ² of the Shark Bay Marine Park, with 12 different species making it one of the most diverse seagrass assemblages in the world. Dugongs regularly use this habitat, with the bay containing one of the largest dugong populations in the world. Humpback whales also use the bay as a staging post in their migration along the coast. Green and loggerhead turtles occur in the bay with Dirk Hartog Island providing the most important nesting site for loggerheads in Western Australia. Hamelin Pool contains the most diverse and abundant examples of stromatolites found in the world. These are living representatives of stromatolites that existed some 3500 million years ago (CALM, 1996).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

VI: Protected area with sustainable use of natural resources – allow human use but prohibits large scale development.

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the North-west Marine Parks Network Management Plan 2018 (DNP, 2018a)

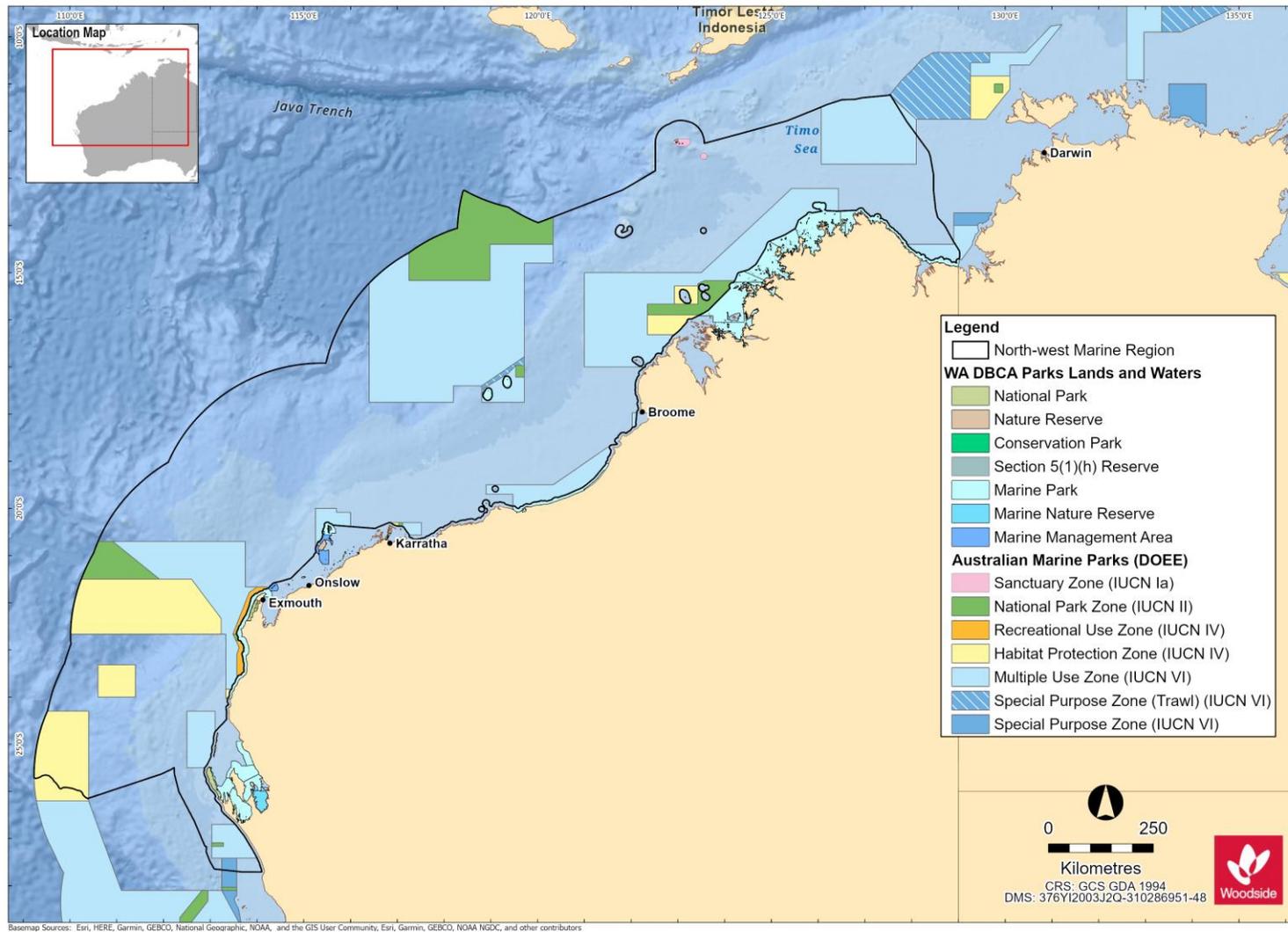


Figure 10-1 Commonwealth and State Marine Protected Areas for the NWMR

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10.10 Summary of Protected Areas within the SWMR

Table 10-2 Protected Areas within the SWMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
World Heritage Properties			
N/A			
National Heritage Places - Natural			
N/A			
Commonwealth Heritage Places - Natural			
N/A			
Wetlands of International Importance (Ramsar)			
Beecher Point Wetlands	Ramsar	Beecher Point Wetlands is a system of about sixty small wetlands located near Rockingham in south-west WA, covering an area of around 7 km ² . The site was listed under the Ramsar Convention in 2001.	The wetlands support sedgeland, herbland, grassland, open-shrubland and low open-forest. The sedgelands that occur within the linear wetland depressions of the Ramsar site are a nationally listed TEC. At least four species of amphibians and twenty-one (21) species of reptiles have been recorded on the site. The site also supports the southern brown bandicoot. The site meets criteria 1 and 2 of the Ramsar Convention.
Forrestdale and Thomsons Lakes	Ramsar	Forrestdale Lake is located in the City of Armadale and Thomsons Lake is located in the City of Cockburn both of which lie within the southern Perth metropolitan area, in Western Australia. The site was listed under the Ramsar Convention in 1990.	The lakes are surrounded by medium density urban development and some agricultural land. The sediments of Thomsons Lake are between 30,000 and 40,000 years old, which are the oldest lake sediments discovered in WA to date. These lakes are the best remaining examples of brackish, seasonal lakes with extensive fringing sedgeland, typical of the Swan Coastal Plain. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Peel-Yalgorup System	Ramsar	Peel-Yalgorup System, located adjacent to the City of Mandurah in	Peel-Yalgorup System Ramsar site is the most important area for waterbirds in south-western Australia. It supports a large number of waterbirds, and a

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		WA, is a large and diverse system of shallow estuaries, coastal saline lakes and freshwater marshes. The site was listed under the Ramsar Convention in 1990.	wide variety of waterbird species. It also supports a wide variety of invertebrates, and estuarine and marine fish. The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention.
Vasse-wonnerup system	Ramsar	Vasse-Wonnerup System Ramsar wetland is situated in the Perth Basin, south-western WA. The site was listed under the Ramsar Convention in 1990.	Vasse-Wonnerup System is an extensive, shallow, nutrient-enriched wetland system of highly varied salinities. Large areas of the wetland dry out in late summer. Vasse-Wonnerup System supports tens of thousands of resident and migrant waterbirds of a wide variety of species. More than 80 species of waterbird have been recorded in the System such as red-necked avocets and black-winged stilts, wood sandpiper, sharp-tailed sandpiper, long-toed stint, curlew sandpiper and common greenshank. Thirteen waterbird species are also known to breed at the Ramsar site, including the largest regular breeding colony of black swans in south-western Australia. The site meets criteria 5 and 6 of the Ramsar Convention.
Wetlands of National Importance (DAWE, 2019)			
Rottneest Island Lakes		The Rottneest Island Lakes site is the cluster of 18 lakes and swamps on the north-east part of Rottneest Island.	An outstanding example of a series of lakes/swamps of varied depth and salinity located on an offshore island; the only island among 200 plus in WA exceeding 10 ha in area, that has a salt-lake complex; the only known example of seasonally meromictic lakes in Australia. The area meets criteria 1, 2, 3 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018b)			
Abrolhos Marine Park	II, IV, VI	The Abrolhos Marine Park is located within both the NWMR and SWMR. Refer Table 10-1 for description and conservation values.	
Bremer Marine Park	II, VI	Bremer Marine Park covers an area of 4472 km ² and is located approximately half-way between Albany and Esperance, offshore from the Fitzgerald River National Park, extending from the WA State waters boundary.	Bremer Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Southern Province • South-west Shelf Province. It includes two KEFs: Albany Canyon group and adjacent shelf break; and Ancient coastline at 90-120 m depth.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, and white sharks, a migratory pathway for humpback whales, and a significant calving area for southern right whales. The AMP includes canyons—important aggregation areas for killer whales.
Eastern Recherche Marine Park	II, VI	Eastern Recherche Marine Park covers an area of 20,575 km ² and is located ~135 km east of Esperance, adjacent to the Recherche Archipelago, close to the WA Cape Arid National Park.	Eastern Recherche Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions: <ul style="list-style-type: none"> • South-west Shelf Province • Southern Province • Great Australian Bight Shelf Transition. It includes three KEFs: Mesoscale eddies; Ancient coastline at 90-120 m depth; and Commonwealth marine environment surrounding the Recherche Archipelago. <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.</p>
Geographe Marine Park	II, IV, VI	Geographe Marine Park covers an area of 977 km ² and is located in Geographe Bay, ~8 km west of Bunbury and 8 km north of Busselton, adjacent to the WA Ngari Capes Marine Park.	Geographe Marine Park is significant because it contains habitats, species and ecological communities associated with the South-west Shelf Province bioregion. <p>It includes two KEFs: Commonwealth marine environment within and adjacent to Geographe Bay; and Western rock lobster.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.</p>
Great Australian Bight Marine Park	II, VI	Great Australian Bight Marine Park covers an area of 45,822 km ² and is located ~12 km south-east of Eucla and 174 km west of Ceduna, adjacent to the SA Far West Coast and Nuyts Archipelago Marine Parks.	Great Australian Bight Marine Park is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> • Great Australian Bight Shelf Transition • Southern Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Benthic invertebrate communities of the eastern Great Australian Bight; and Small pelagic fish of the South-west Marine Region.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			pygmy blue and sperm whales, and a calving area, migratory pathway and large aggregation area for southern right whales.
Jurien Marine Park	II, VI	Jurien Marine Park covers an area of 1851 km ² and is located ~148 km north of Perth and 155 km south of Geraldton, adjacent to the WA Jurien Bay Marine Park.	<p>Jurien Marine Park is significant because it includes habitats, species and ecological communities associated with two bioregions:</p> <ul style="list-style-type: none"> • South-west Shelf Transition • Central Western Province. <p>It includes three KEFs: Ancient coastline at 90-120 m depth; Demersal slope and associated fish communities of the Central Western Province; and Western rock lobster</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales.</p>
Perth Canyon Marine Park	II, IV, VI	Perth Canyon Marine Park covers an area of 7409 km ² and is located ~52 km west of Perth and ~19 km west of Rottnest Island.	<p>Perth Canyon Marine Park is significant because it includes habitats, species and ecological communities associated with four bioregions:</p> <ul style="list-style-type: none"> • Central Western Province • South-west Shelf Province • Southwest Transition • South-west Shelf Transition. <p>It includes four KEFs: Perth Canyon and adjacent shelf break, and other west-coast canyons; Demersal slope and associated fish communities of the Central Western Province; Western rock lobster; and Mesoscale eddies.</p> <p>The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Antarctic blue, pygmy blue and sperm whales, a migratory pathway for humpback, Antarctic blue and pygmy blue whales, and a calving buffer area for southern right whales.</p>
South-west Corner Marine Park	II, IV, VI	South-west Corner Marine Park covers an area of 271,833 km ² and is located adjacent to the WA Ngari Capes Marine Park. It covers an extensive offshore area that is closest to WA State waters ~48 km west of Esperance, 73 km west of Albany and 68 km west of Bunbury.	<p>South-west Corner Marine Park is significant because it contains habitats, species and ecological communities associated with three bioregions:</p> <ul style="list-style-type: none"> • Southern Province • South-west Transition • South-west Shelf Province. <p>It includes six KEFs: Albany Canyon group and adjacent shelf break; Cape Mentelle upwelling; Diamantina Fracture Zone; Naturaliste Plateau; Western rock lobster; and Ancient coastline at 90 m-120 m depth.</p>

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
			The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions, white sharks and sperm whales, a migratory pathway for Antarctic blue, pygmy blue and humpback whales, and a calving buffer area for southern right whales.
Twilight Marine Park	II, VI	Twilight Marine Park covers an area of 4641 km ² and is located ~245 km south-west of Eucla and 373 km north-east of Esperance, adjacent to the WA State waters boundary.	Twilight Marine Park is significant because it contains habitats, species and ecological communities associated with the Great Australian Bight Shelf Transition bioregion. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.
Two Rocks Marine Park	II, VI	Two Rocks Marine Park covers an area of 882 km ² and is located ~25 km north-west of Perth, to the north-west of the WA Marmion Marine Park.	Two Rocks Marine Park is significant because it includes habitats, species and ecological communities associated with the South-west Shelf Transition bioregion. It includes three KEFs: Commonwealth marine environment within and adjacent to the west-coast inshore lagoons; Western rock lobster; and Ancient coastline at 90-120 m depth. The AMP supports a range of species including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat for seabirds and Australian sea lions, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.
State Marine Parks and Reserves			
Jurien Bay Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Jurien Bay Marine Park is located on the central west coast of WA ~200 km north of Perth and covers an area of 824 km ² .	An extensive limestone reef system parallel to the shore has created a huge shallow lagoon that provides perfect habitat for Australian sea lions, dolphins and a myriad of juvenile fish. Extensive seagrass meadows inside the reef shelter many marine animals such as western rock lobsters, octopus and cuttlefish that make up the diet of young sea lions. The marine park also surrounds dozens of ecologically important islands that contain rare and endangered animals found nowhere else in the world (CALM, 2005b).
Marmion Marine Park	Sanctuary, Recreation and Special Use Zones.	The Marmion Marine Park lies within State waters between Trigg Island and Burns Beach and encompasses a coastal area of ~95 km ² . Marmion	The marine park has a number of sanctuary zones including Little Island, The Lumps and the Boyinaboat Reef protecting a variety of habitats from limestone reefs, seagrass beds and clear shallow lagoons that support a diversity of marine life. In addition, to a general use zone and the Waterman Recreation Area. The marine park contains important habitat for the endemic Australian

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		Marine Park was the State's first marine park, declared in 1987.	sea lion, an array of seabird species migratory whales are regular visitors (CALM, 1992; DPAW, 2016d).
Swan Estuary Marine Park	Special Purpose and Nature Reserve Zones.	Three biologically important areas of Perth's Swan River make up the Swan Estuary Marine Park, including Alfred Cove, Pelican Point and Crawley. These three sites cover a total area of 3.4 km ² .	The sand flats, mud flats and beaches at the three locations of the Swan Estuary Marine Park provide the only remaining significant feeding and resting areas in the Swan Estuary, for trans-equatorial migratory wading and waterbirds. The Park and adjacent reserves also provide habitat for a diverse assemblage of aquatic and terrestrial flora and fauna (CALM, 1999).
Shoalwater Islands Marine Park	Sanctuary, Special Purpose and General Use Zones.	The Shoalwater Islands Marine Park is located adjacent to Rockingham on the south-west coast of WA, ~50 km south of Perth and covers an area of ~66 km ² .	The Shoalwater Islands Marine Park consists of a complex seabed and coastal topography consisting of islands, limestone ridges and reef platforms, protected inshore areas and deeper basins, sandbars and beaches, and is home to five species of cetacean and 14 species of sea and shore bird. The waters of the marine park are also used to access feeding grounds for the little penguin (<i>Eudyptula minor</i>) colony on Penguin Island, which is close to the northernmost limit of the species' range and is the largest known breeding colony in Western Australia (DEC, 2007c).
Ngari Capes Marine Park	Sanctuary, Special Purpose and Recreation Zones.	The Ngari Capes Marine Park is located off the south-west coast of WA, ~250 km south of Perth, covering ~1238 km ² .	The Ngari Capes Marine Park consists of a complex arrangement of sandy bays, high energy limestone and granite reefs bordered by headlands and cliffs and two weathered capes. Coral communities consist of both tropical and temperate species. Cetaceans and pinnipeds are resident in and/or transient through the marine park as well as a diverse range of seabirds and shorebirds (DEC, 2013).
Walpole and Nornalup Inlets Marine Park	Recreation Zone.	The Walpole and Nornalup Inlets Marine Park is located adjacent to the towns of Walpole and Nornalup on the south coast of WA, ~120 km west of Albany, and covers ~14 km ² .	The Walpole and Nornalup Inlets Marine Park consists of a geologically complex lagoonal estuarine system comprising three significant rivers and two connected inlets that are permanently open to the ocean. Approximately 40 marine and estuarine finfish species commonly inhabit the inlet system, as well as a variety of shark and ray species and numerous seabirds and shorebirds. The sandy beaches and shoreline vegetation of the inlet system are of high ecological and social importance to the marine park (DEC, 2009).

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: national Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

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VI: Protected area with sustainable use of natural resources – allow human use but prohibits large scale development.

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the South-west Marine Parks Network Management Plan 2018 (DNP, 2018b)

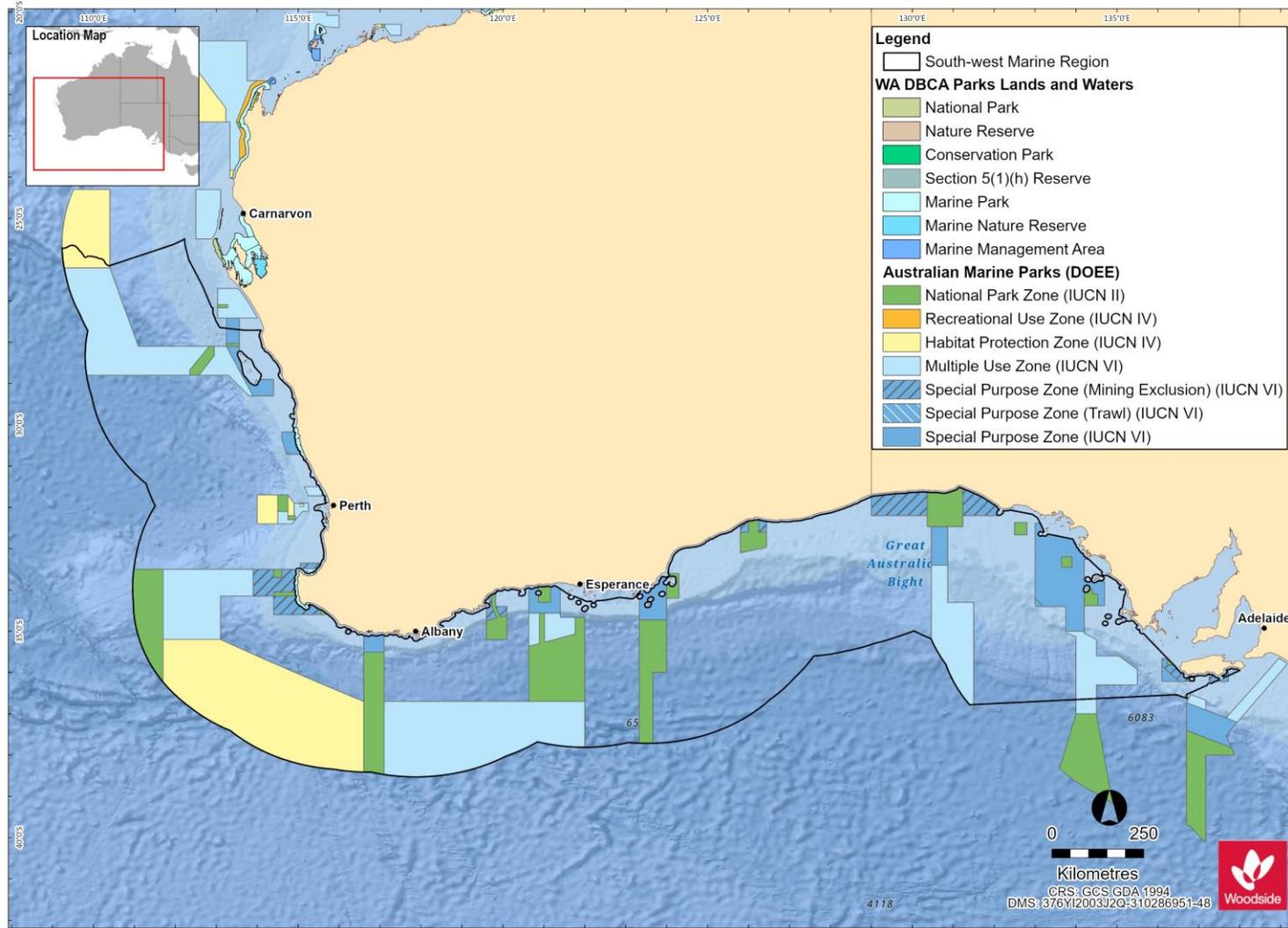


Figure 10-2. Commonwealth and State Marine Protected Areas for the SWMR

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10.11 Summary of Protected Areas within the NMR

Table 10-3 Protected Areas within the NMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
World Heritage Properties			
Kakadu National Park		Kakadu National Park is a living landscape with exceptional natural and cultural values. It is the largest National Park in Australia and preserves the greatest variety of ecosystems on the Australian continent including extensive areas of floodplains, mangroves, tidal mudflats, coastal areas and monsoon forests. The park was inscribed the World Heritage list in three stages over 11 years. It is located in tropical north Australia covering a total area of 19,804 square kilometres.	The conservation values reflect the WHA Criterion: (i), (vi), (vii) and (ix): Natural features relate to Criterion (vii) – the remarkable contrast between the internationally recognised Ramsar-listed wetlands and the spectacular rocky escarpment and its outliers and Criterion (ix) – four major river systems of tropical Australia and floodplains that are dynamic environments, shaped by changing sea levels and big floods every wet season. These floodplains illustrate the ecological and geomorphological effects that have accompanied Holocene climate change and sea level rise. Kakadu National Park contains important and significant habitats supporting a diverse range of flora and fauna.
National Heritage Places - Natural			
Kakadu National Park		Refer to World Heritage property description above.	Refer to World Heritage property conservation values above
Commonwealth Heritage Places - Natural			
N/A			
Wetlands of International Importance (Ramsar)			
Kakadu National Park		Australian Ramsar site number 2. The stage 1 and 2 Ramsar sites, established in 1980, 1985 and 1989, respectfully were combined into a single Ramsar site in 2010.	The Kakadu National Park Ramsar site straddles the western edge of the Arnhem Land Plateau encompassing a range of landforms and extensive floodplains. It is a mosaic of contiguous wetlands comprising the catchments of two large river systems, the East and South Alligator rivers and encompasses extensive tidal mudflat areas. It is an internationally important site for migratory shorebirds as part of the EAAF.
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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
Cobourg Peninsula		Australian Ramsar site number 1 established in 1974. This Ramsar site includes freshwater and extensive intertidal areas but excludes subtidal areas. It is in a remote location and there has been minimal human impact on the site.	The wetlands encompassed in the Ramsar site are some of the better protected and near-natural wetlands in the bioregion and there is a diverse array of wetland in a confined area. The site supports important turtle nesting habitat and habitat for coastal dolphin species and is an internationally significant migratory shorebird habitat as part of the EAAF and an important location for seabird breeding colonies.
Wetlands of National Importance (DAWE, 2019)			
Southern Gulf Aggregation		The site is a complex continuous wetland aggregation in the Gulf of Carpentaria, covering an area of ~5460 km ² located 58 km east of Burketown, Queensland.	The Southern Gulf Aggregation is the largest continuous estuarine wetland aggregation of its type in northern Australia. It is one of the three most important areas for shorebirds in Australia. The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia.
Australian Marine Parks (DNP, 2018c)			
Arafura Marine Park	VI	Arafura Marine Park covers an area of 22,924 km ² is located ~256 km north-east of Darwin and 8 km offshore of Croker Island, NT. It extends from NT waters to the limit of Australia's EEZ.	The AMP is significant because it contains habitats, species and ecological communities associated with two bioregions: <ul style="list-style-type: none"> •Northern Shelf Province •Timor Transition. It includes one KEF: Tributary canyons of the Arafura Depression. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting habitat for marine turtles and important foraging and breeding habitat for seabirds.
Arnhem Marine Park	VI	Arnhem Marine Park covers an area of 7125 km ² and is located ~100 km south-east of Croker Island and 60 km south-east of the Arafura Marine Park. It extends from NT waters surrounding the Goulburn Islands, to the waters north of Maningrida.	Arnhem Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include foraging habitat and a migratory pathway for marine turtles and seabirds.
Gulf of Carpentaria Marine Park	II, VI	Gulf of Carpentaria Marine Park covers an area of 23,771 km ² and is located ~90 km north-west of Karumba, Queensland and is adjacent to the Wellesley Islands in	Gulf of Carpentaria Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf Province bioregion.

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		the south of the Gulf of Carpentaria basin.	It includes four KEFs: Gulf of Carpentaria basin; Gulf of Carpentaria coastal zone; Plateaux and saddle north-west of the Wellesley Islands; and Submerged coral reefs of the Gulf of Carpentaria. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging areas for seabirds and interesting and foraging areas for turtles.
Joseph Bonaparte Gulf Marine Park	VI	The Joseph Bonaparte Gulf Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Limmen Marine Park	IV	Limmen Marine Park covers an area of 1399 km ² and is located ~315 km south-west of Nhulunbuy, NT, in the south-west of the Gulf of Carpentaria. It extends from NT waters, between the Sir Edward Pellew Group of Islands and Maria Island in the Limmen Bight, adjacent to the NT Limmen Bight Marine Park.	Limmen Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include interesting and foraging habitat for marine turtles.
Oceanic Shoals Marine Park	II, IV, VI	The Oceanic Shoals Marine Park is located within both the NWMR and NMR. Refer Table 10-1 for description and conservation values.	
Wessel Marine Park	IV, VI	Wessel Marine Park covers an area of 5908 km ² and is located ~22 km east of Nhulunbuy, NT. It extends from NT waters adjacent to the tip of the Wessel Islands to NT waters adjacent to Cape Arnhem.	Wessel Marine Park is significant because it contains habitats, species and ecological communities associated with the Northern Shelf bioregion. It includes one KEF: Gulf of Carpentaria basin. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding habitat for seabirds and interesting and foraging habitat for marine turtles.
West Cape York Marine Park	II, IV, VI	West Cape York Marine Park covers an area of 16,012 km ² and is located adjacent to the northern end	West Cape York Marine Park is significant because it contains species and ecological communities associated with two bioregions: • Northeast Shelf Transition

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description	Conservation Values
		of Cape York Peninsula ~25 km south-west of Thursday Island and 40 km north-west of Weipa, Queensland.	<ul style="list-style-type: none"> Northern Shelf Province. It includes two KEFs: Gulf of Carpentaria basin; and Gulf of Carpentaria coastal zone. The AMP supports a range of species, including species listed as threatened, migratory, marine or cetacean under the EPBC Act. BIAs within the AMP include breeding and foraging habitat for seabirds, internesting and foraging habitat for marine turtles and dugong, and foraging, breeding and calving habitat for dolphins.
Territory Marine Parks and Reserves			
Cobourg Marine Park	II, IV, VI	Cobourg Marine Park covers an area of 2,290 km ² and is located in the waters surrounding the Cobourg Peninsula ~220 km north-east of Darwin. The Marine Park is part of the larger Garig Gunak Barlu National Park. Garig Gunak Barlu National Park includes both the Marine Park and the Cobourg Sanctuary.	Cobourg Marine Park is located in the Cobourg and Van Diemen Gulf marine bioregions with the northern portion of the Park covered by the Cobourg marine bioregion and the southern portion covered by the Van Diemen Gulf marine bioregion. The Marine Park is characterised by a number of deeply incised bays and estuaries on its northern shores. These bays are ancient river valleys that were drowned during periods of sea level rise and provide a varied environment and habitat that is quite distinct from the open water areas of the Park. The areas of the Park that have been studied and where extensive collections have been made indicates that the Park supports rich and diverse marine life including live coral reefs, seagrass, diverse reef and pelagic fish populations, marine turtles and dugong.

*Conservation objectives for IUCN categories include:

Ia: Strict Nature Reserve

Ib: Wilderness Area

II: National Park

III: Natural Monument or Feature

IV: Habitat/Species Management Area

V: Protected Landscape

VI: Protected area with sustainable use of natural resources – allow human use but prohibits large scale development.

IUCN categories for the marine park are provided and, in brackets, the IUCN categories for specific zones within each Marine Park as assigned under the North Marine Parks Network Management Plan 2018 (DNP, 2018c)

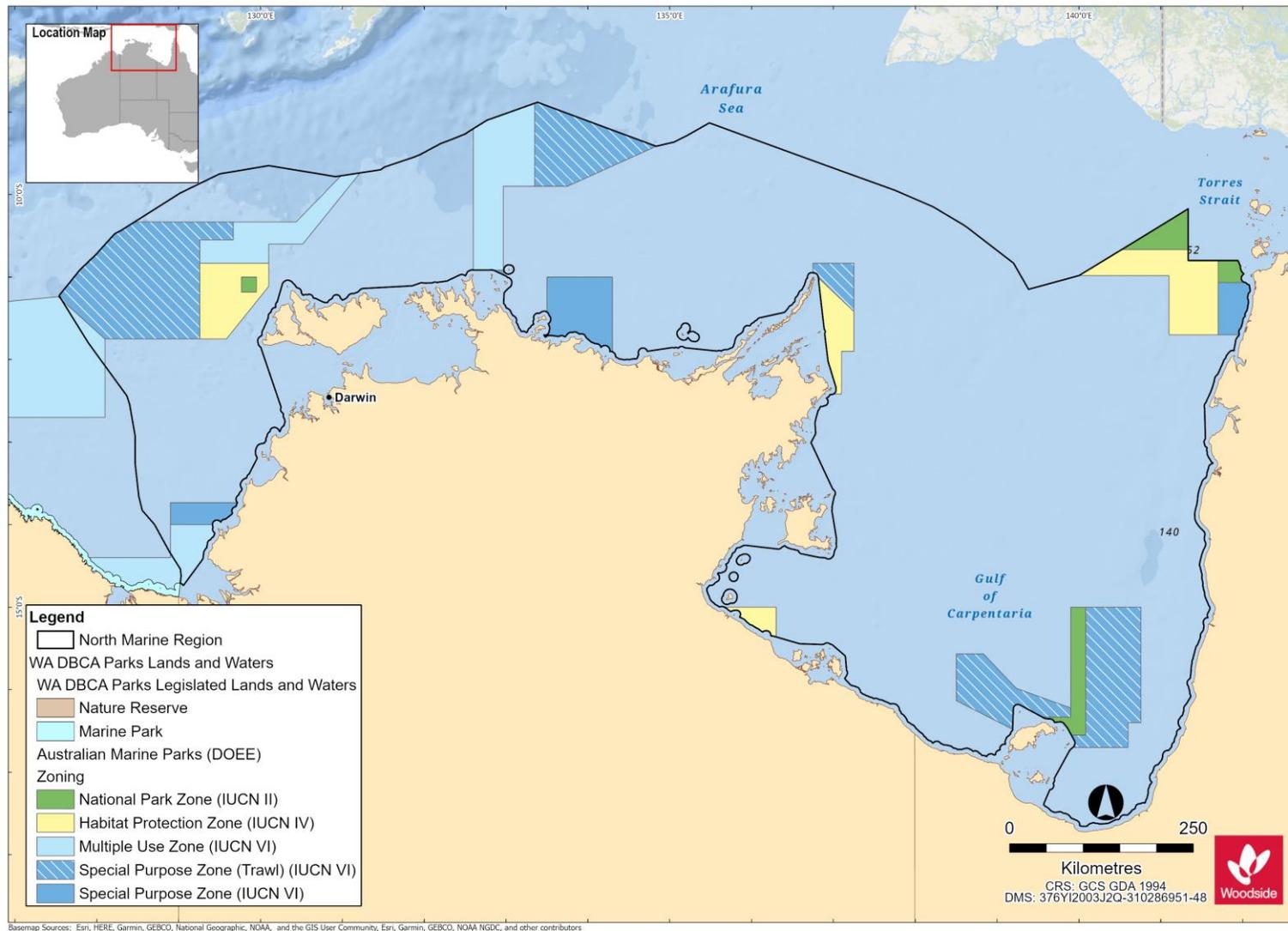


Figure 10-3. Commonwealth and State Marine Protected Areas within the NMR

11. SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

This section summarises the information relating to the socio-economic and cultural environment of the regions offshore Western Australia, with a focus on the NWMR and to a lesser extent the SWMR and NWR.

The cultural environment includes Indigenous and European heritage values, including underwater values such as historic shipwrecks. Socio-economic values include commercial and traditional fishing, tourism and recreation, shipping, oil and gas activities and defence activities.

11.1 Cultural Heritage

11.1.1 Indigenous Sites of Significance

Murujuga (the Burrup Peninsula) has a very high density of significant Indigenous heritage sites and places with tangible and intangible heritage values. The area has one of the largest, densest, and most diverse collections of rock art in the world. It is estimated that the peninsula and surrounding islands contain over a million petroglyphs (rock engravings) covering a broad range of styles and subjects. The landscape also contains quarries, middens, fish traps, rock shelters, ceremonial sites, artefact scatters, grinding patches and stone arrangements that evidence tens of thousands of years of human occupation. These places are linked to Aboriginal cosmology, Dreaming stories and songs through the stories, knowledge and customs that are still held by traditional custodians.

In 2007 the Dampier Archipelago (including the Burrup Peninsula) was included on the National Heritage List due to outstanding heritage values relating to Australia's cultural history contained in the large number, density, diversity, distribution and fine execution of rock art. Within the National Heritage Place, the Murujuga National Park covers 4913 ha and is co-managed by the Murujuga Aboriginal Corporation and the Department of Biodiversity, Conservation and Attractions. The Murujuga Cultural Landscape was also added to Australia's Tentative World Heritage List in 2020, with full World Heritage Listing anticipated in 2024.

Woodside also recognises the potential for heritage to survive in submerged landscapes. Sea-level rises since the last ice age mean that areas now under the sea were once exposed, that many of today's islands would have been connected to the mainland, and that Aboriginal people are highly likely to have inhabited these places. Woodside works with traditional custodians, academics and heritage professionals to identify tangible and intangible heritage values in the submerged landscape to avoid disturbing heritage where possible and to minimise impacts where heritage cannot be avoided.

It is an offence to excavate, destroy, damage, conceal or alter Indigenous heritage onshore or in state waters under section 17 of the *Aboriginal Heritage Act 1972 (WA) (AHA)* without ministerial authorisation. Where there is a risk of injury or desecration to a significant Aboriginal area, even where permitted under the AHA, any Aboriginal person may apply to the federal Environment Minister for a declaration under sections 9 or 10 of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* for the protection and preservation of that area.

The Department of Planning, Lands and Heritage maintains a register of registered sites and heritage places including middens, burial, ceremonial [sites], artefacts, rock shelters, mythological [sites] and engraving sites. There are over 1600 registered sites on Murujuga and the Dampier Archipelago with around 1100 other heritage places. This register is not comprehensive and will be complemented by heritage surveys where necessary. Protection of National and World Heritage values is also legislated through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*. Murujuga National Park is managed under the *Conservation and Land Management Act 1984 (WA)*.

11.1.2 European Sites of Significance

European sites of significance and heritage value are found along adjacent foreshores of the SWMR, NWMR and NWR. Heritage values are protected in Western Australia under the *Heritage Act 2018*.

11.1.3 Underwater Cultural Heritage

Places of historic cultural significance are protected under Commonwealth, State and local regimes. Places inscribed on the National or World Heritage list are protected through various provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Historic places may also be protected under the *Heritage Act 2018* (WA); under section 129 the prohibited alteration, demolition, damage, despoilment or removal of objects from a registered place may result in a fine of A\$1 million. Protection of heritage by local government typically emanates from local planning schemes produced under Part 5 of the *Planning and Development Act 2005* (WA).

The remains of vessels and aircraft in Commonwealth waters, along with any associated article, are automatically protected under the *Underwater Cultural Heritage Act 2018* (Cth) after 75 years. Remains and relics of any ship lost, wrecked or abandoned in Western Australian waters before 1900 are protected by the *Maritime Archaeology Act 1973* (WA).

The Australian National Shipwreck Database and the WA Maritime Museum Shipwreck Database list these protected wrecks.

11.1.4 National and Commonwealth Listed Heritage Places

Australia's National Heritage Sites are those of outstanding natural, historic and/or Indigenous significance to Australia. National Heritage places classed as natural are discussed in **Section 10.3**. Historic and/or Indigenous National Heritage Listed Places of the NWMR include:

- Dampier Archipelago (including Burrup Peninsula)
- Dirk Hartog Landing Site/Cape Inscription
- HMAS Sydney II and the HSK Kormoran Shipwreck Sites
- Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos

Commonwealth Heritage Places are a collection of sites recognised for their Indigenous, historical and/or natural values, which are owned or controlled by the Australian Government. A number of these sites are owned or controlled by the Department of Defence, as well as Government agencies relating to maritime safety, customs and communication. Commonwealth Heritage places classed as natural are discussed in **Section 10.3**. Listed Heritage Places in the NWMR include:

- Mermaid Reef – Rowley Shoals (refer **Section 10.3**)
- Ashmore Reef National Nature Reserve (refer **Section 10.3**)
- Scott Reef and Surrounds – Commonwealth Area (refer **Section 10.3**)
- Ningaloo Marine Area (refer **Section 10.3**)

World Heritage Properties are those sites that hold universal value which transcends any value they may be held by any one nation. These sites and their qualities are detailed in the Convention concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention), to which Australia is a founding member. The Protected Matters Search Report (**Appendix A**) lists two natural World Heritage Properties in the NWMR (refer **Section 10.2**). There are no cultural heritage listings located within the NWMR.

Summary tables of heritage places for NWMR, SWMR and NMR are presented in **Table 11-1, Table 11-2** and **Table 11-3**.

11.2 Summary of Heritage Places within the NWMR

Table 11-1 Heritage Places (Indigenous and Historic) within the NWMR

Heritage Places	Woodside Activity Area			Class	Description	Conservation Values
	Browse	NWS/S	NW Cape			
National Heritage Properties						
Dampier Archipelago (including Burrup Peninsula)	-	✓	-	Indigenous	The Dampier Archipelago (including the Burrup Peninsula) contains one of the densest concentrations of rock engravings in Australia with some sites containing thousands or tens of thousands of images.	The rock engravings comprise images of avian, marine and terrestrial fauna, schematised human figures, figures with mixed human and animal characteristics and geometric designs. At a national level it has an exceptionally diverse and dynamic range of schematised human figures some of which are arranged in complex scenes. The fine execution and dynamic nature of the engravings, particularly some of the composite panels, exhibit a degree of creativity that is unusual in Australian rock engravings.
Dirk Hartog Landing Site 1616 – Cape Inscription Area	-	-	✓	Historic	Cape Inscription is the site of the oldest known landings of Europeans on the WA coastline.	The Cape Inscription area displays uncommon aspects of Australia's cultural history because of the cumulative effect its association with these explorers and surveyors had on growing knowledge of the great southern continent in Europe. The association of the site with these early navigators stimulated the development of the European view of the great southern continent at a time when they began to look at the world with a modern scientific outlook.
Commonwealth Heritage Properties						
N/A						

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11.3 Summary of Heritage Places within the NMR

Table 11-2 Heritage Places (Indigenous and Historic) within the NMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
None			
Commonwealth Heritage Properties			
None			

11.4 Summary of Heritage Places within the SWMR

Table 11-3 Heritage Places (Indigenous and Historic) within the SWMR

Heritage Places	Class	Description	Conservation Values
National Heritage Properties			
Cheetup Rock Shelter	Indigenous	Cheetup meaning “place of the birds” is the name of a spacious rock shelter located in Cape Le Grand National Park, about 55 km east of Esperance in WA. Aboriginal people associated with the place identify themselves as Nyungar/Noongar, Ngadju (shortened from Ngadjunmaia) or Mirning.	Cheetup rock shelter provides outstanding evidence for the antiquity of processing and use of cycad seeds by Aboriginal people. The seeds of the cycad are extremely toxic and can cause speedy death if eaten fresh without proper preparation to remove the toxins. The presence of <i>Macrozamia riedlei</i> seeds in a pit lined with Xanthorrhoea (grass tree) leaf bases indicates that the Aboriginal people in the Esperance region had the knowledge to remove the toxins of this important source of carbohydrate and protein at least 13,200 years ago.

Heritage Places	Class	Description	Conservation Values
Batavia Shipwreck Site and Survivor Camps Area 1629 – Houtman Abrolhos	Historic	The Batavia and its associated sites hold an important place in the discovery and delineation of the WA coastline. The wreck of the Batavia, and other Dutch ships like her, convinced the VOC (Dutch East India Company) of the necessity of more accurate charts of the coastline and resulted in the commissioning of Vlamingh's 1696 voyage.	Because of its relatively undisturbed nature the archaeological investigation of the wreck itself has revealed a range of objects of considerable value as well as to artefact specialists and historians.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	The naval battle fought between the Australian warship HMAS Sydney II and the German commerce raider HSK Kormoran off the WA coast during World War II was a defining event in Australia's cultural history. HMAS Sydney II was Australia's most famous warship of the time and this battle has forever linked the stories of these warships to each other. The loss of HMAS Sydney II along with its entire crew of 645 following the battle with HSK Kormoran, remains as Australia's worst naval disaster.	The shipwreck sites of HMAS Sydney II and HSK Kormoran have outstanding heritage value to the nation because of their importance in a defining event in Australia's cultural history and for their part in development of the process of the defence of Australia.
Commonwealth Heritage Properties			
Cliff Point Historic Sites	Historic	Cliff Head is a limestone bluff on the east coast of Garden Island. Evidence of occupation has been reported from the beach just north of the head, the immediate hinterland, the ridge above and on the south face of the ridge.	The Cliff Point Historic Site, individually significant within the area of Garden Island is important as the first site inhabited by Governor Stirling's party in 1829 when founding the colony of WA, and as WA's first official non-convict settlement. The site was occupied in the first instance by Captain Charles Fremantle before the arrival of Captain Stirling. The party occupied the site for two months before a move was made to the Swan River settlement on the mainland.
HMAS Sydney II and HSK Kormoran Shipwreck Sites	Historic	As above	As above
J Gun Battery	Historic	J Battery comprised two 155 mm long range guns, the other similar battery being at Cape Peron on the mainland at the entrance to Cockburn Sound. Located in the dune systems at the north western	J Gun Battery (1942) is individually significant within the area of Garden Island (Register No. 019544) and is historically important as the first gun battery constructed on Garden Island and as one of two long range gun batteries which played a

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Heritage Places	Class	Description	Conservation Values
		corner of Garden Island elements of the J Battery complex are now covered in part by sand.	strategic role in the coastal defences of Cockburn Sound and Fremantle following the entry of Japan into the Second World War (1939-45).

11.5 Fisheries - Commercial

11.5.1 Commonwealth and State Fisheries

The diverse range of habitats and species offshore WA has allowed for various fisheries to develop and operate throughout the region.

The Australian Fisheries Management Authority (AFMA) manages fisheries on behalf of the Commonwealth Government and is bound by objectives under the Commonwealth *Fisheries Management Act 1991*.

WA State commercial fisheries are managed by the WA Department of Primary Industries and Regional Development (WA DPIRD) under the WA *Fish Resources Management Act 1994* (FRMA), Fisheries Resources Management Regulations 1995, relevant gazetted notices and licence conditions, and applicable Fishery Management Plans.

Commonwealth and State managed fisheries that operate within the NWMR and in areas beyond this region are summarised in the **Table 11-4**.

Table 11-4 Commonwealth and State managed fisheries

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Commonwealth Managed Fisheries						
Southern Bluefin Tuna Fishery	✓	✓	✓	Management area	The Southern Bluefin Tuna Fishery (SBTF) covers the entire EEZ around Australia, out to 200 nm from the coast. They do not fish in the Woodside activity area.	
				Species targeted	Fishing methods	Fishing depth
				Southern bluefin tuna (<i>Thunnus maccoyii</i>)	Longline and purse seine fishing.	Southern bluefin tuna is a pelagic species which can be found to depths of 500 m (AFMA, 2021a)
				Fishing effort	Most of the Australian fishing effort is by purse-seine vessels in the Great Australian Bight and waters off South Australia during summer months, and by longline off the New South Wales coastline during winter months (Patterson <i>et al.</i> , 2020). SBTF is a fishery that is shared amongst many countries. Australia currently has a 35% share of the total global allowable catch, and while wild capture fishing in Australia to sell directly to market can occur anywhere throughout the SBTF's range, currently the vast majority of that quota is value-added through ranching (on-growing the wild captured fish for extra 5-6 months). Ranching requires significant infrastructure, a resident labour force, plus proximity to a fishery able to supply a large quantity of natural feed/sardines (40,000+ tonnes) (for example as available in Port Lincoln). North-west WA is critically important regardless of how the quota is fished because of the proximity to the single spawning ground of this global roaming species. The stock remains classified as overfished.	
Active licences/vessels	Seven purse seine vessels, 20 longline vessels (Patterson <i>et al.</i> , 2020).					
Western Skipjack Tuna Fishery	✓	✓	✓	Management area	The combined western and eastern skipjack tuna (<i>Katsuwonus pelamis</i>) fisheries (STF) encompass the entire Australian EEZ. The Western Skipjack Tuna Fishery (WSTF) extends westward from the SA/Victorian border across the Great Australian Bight and around the west coast of WA to the Cape York Peninsula.	

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Fishery	Woodside Activity Area			Description														
	Browse	NWS/S	NW Cape															
				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Western skipjack tuna (<i>Katsuwonus pelamis</i>)</td> <td>Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.</td> <td>Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i>, 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">No active vessels operating since 2009.</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Western skipjack tuna (<i>Katsuwonus pelamis</i>)	Fishers use purse seine gear (about 98% of catch) and sometimes pole and line when fishing for skipjack tuna.	Western skipjack tuna is a pelagic species that can be found to depths of 260 m (AFMA, 2021b).	Fishing effort:	The Skipjack Tuna Fishery (STF) has not been actively fished since the 2008-2009 fishing season (Patterson <i>et al.</i> , 2020). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.		Active licences/vessels:	No active vessels operating since 2009.			
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Western Tuna and Billfish Fishery	✓	✓	✓	<table border="1"> <thead> <tr> <th>Management area</th> <td>The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.</td> </tr> </thead> <tbody> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> <tr> <td>Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)</td> <td>Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.</td> <td>Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i>, 2020).</td> </tr> </tbody> </table>	Management area	The Western Tuna and Billfish Fishery (WTBF) extends to the Australian EEZ boundary in the Indian Ocean.	Species targeted	Fishing methods	Fishing depth	Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Swordfish (<i>Xiphias gladius</i>) Albacore (<i>Thunnus alalunga</i>) Striped marlin (<i>Kajikia audax</i>)	Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used.	Species have a broad depth distribution, with tuna occurring at 150 – 300 m, striped marlin at 150 m and swordfish at up to 600 m (BRS, 2007).	Fishing effort:	The WTBF operates in Australia’s EEZ and high seas of the Indian Ocean. Fishing effort in recent years has been concentrated off south-west WA, with occasional activity off SA.		Active licences/vessels:	Two pelagic longline vessels and two minor longline vessels (Patterson <i>et al.</i> , 2020).	
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Western Deepwater Trawl Fishery			✓	<table border="1"> <thead> <tr> <th>Management area</th> <td>The Western Deepwater Trawl Fishery (WDTF) is located in deep water off WA, from the line approximating the 200 m isobath to the edge of the Australian Fishing Zone (AFZ).</td> </tr> </thead> </table>	Management area	The Western Deepwater Trawl Fishery (WDTF) is located in deep water off WA, from the line approximating the 200 m isobath to the edge of the Australian Fishing Zone (AFZ).												
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Fishery	Woodside Activity Area			Description														
	Browse	NWS/S	NW Cape															
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Active licences/vessels:	One active vessel in 2018-2019 (Patterson <i>et al.</i> , 2020).																	
North-west Slope Trawl Fishery	✓	✓		Management area	The North-west Slope Trawl Fishery (NWSTF) extends, from 114 °E to 125 °E, from the 200 m isobath to the outer limit of the AFZ (200 nm from the coastline, which is the boundary of the Australian EEZ).													
				Species targeted	Fishing methods	Fishing depth												
				Australian scampi (<i>Metanephrops australiensis</i>) and smaller quantities of velvet and Boschma's scampi (<i>M. velutinus</i> and <i>M. boschmai</i>) Mixed snappers have historically been an important component of the catch.	Demersal trawl.	Typically at depths of 350 to 600 m (Patterson <i>et al.</i> , 2017), however stakeholder consultation has indicated that this may be to depths of 800 m.												

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: The NWSTF commenced in 1985 and the number of active vessels peaked at 21 in the 1986-1987 season and declined through the 1990s before increasing to 10 vessels in 2000-2001 and 2002-2002 seasons. Four vessels operated in the 2017-2018 and 2018-2019 seasons (Patterson <i>et al.</i> 2020). Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson <i>et al.</i>, 2017).</p> <p>Active licences/vessels: Four vessels (Patterson <i>et al.</i>, 2020).</p>		
State Managed Fisheries						
Pilbara Fish Trawl (Interim) Managed Fishery		✓		<p>Management area The Pilbara Trawl (Interim) Managed Fishery is of high intensity and is divided into two zones and an area governed by Schedule 5 (prohibited to trawling). In addition to the Prohibited Trawl Fishing area, no fish trawl units are allocated for use in Zone 1 or Areas 3 and 6 of Zone 2 (which comprises six management areas) (Newman <i>et al.</i>, 2020a). No fish trawl units have been allocated for use in Area 6 of Zone 2 since the management plan commenced operation in 1998.</p>		
				<p>Species targeted</p> <p>The Pilbara Fish Trawl (Interim) Managed Fishery (PFTIMF) targets more than 50 scalefish species. The five main demersal scalefish species landed by the fisheries in the Pilbara region are blue-spotted emperor, crimson snapper, rosy threadfin bream, red emperor and goldband snapper in 2018 (Newman <i>et al.</i>, 2020a).</p>	<p>Fishing methods</p> <p>Demersal trawl.</p>	<p>Fishing depth</p> <p>The Pilbara Fish Trawl Fishery lands the largest component of the catch and operates in waters between 50 and 200 m water depth (Allen <i>et al.</i>, 2014, Newman <i>et al.</i> 2015). Stakeholders have advised that trawling can occur in depths of up to approximately 800 m.</p>
				<p>Fishing effort:</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years:</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Pilbara Trawl (Interim) Managed Fishery caught 1996 t in 2018-19, 1780 t in 2017-18, 1529 t in 2016-17, 1172 t in 2015-16, 1105 t in 2014-15.</p> <p>Active licences/vessels: Two Pilbara Trawl (Interim) Managed Fishery vessels in 2017 (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Fish Trawl Interim Managed Fishery (Newman <i>et al.</i>, 2020a).</p>		
Pilbara Trap Managed Fishery		✓	✓	<p>Management area The Pilbara Trap Fishery covers the area from Exmouth northwards and eastwards to the 120° line of longitude, and offshore as far as the 200 m isobath. Like the trawl fishery, the trap fishery is also managed using input controls in the form of individual transferable effort allocations monitored with a satellite-based vessel management system. The fishery includes six licences allocated to three vessels, operating principally from Onslow.</p>		
				<p>Species targeted</p> <p>Pilbara Trap Managed Fishery catch is made up of around 45-50 different fish species. The four main species landed by the fisheries in the Pilbara region are blue-spotted emperor, red emperor, goldband snapper and Rankin cod.</p>	<p>Fishing methods</p> <p>Demersal fish traps.</p>	<p>Fishing depths</p> <p>Greatest effort in waters less than 50 m depth targeting high value species such as red emperor and goldband snapper.</p>
				<p>Fishing effort</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years: Pilbara Trap Managed Fishery caught 563 t in 2018-19, 573 t in 2017-18, 495 t in 2016-17, 510 t in 2015-16, 268 t in 2014-15. In 2018, the total catch for the Pilbara Trap Managed Fishery was 563 t, making up 21% of the total catch by the Pilbara Demersal Scale Fishery (Newman <i>et al.</i>, 2019).</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Active licences/vessels</p> <p>In the 2019 season, there were six licences in the Pilbara Trap Managed Fishery, (Newman <i>et al.</i>, 2020a). Active vessels data are confidential as there were fewer than three vessels in the Pilbara Trap Managed Fishery (Newman <i>et al.</i>, 2019).</p>		
Pilbara Line Managed Fishery		✓	✓	<p>Management area</p> <p>The Pilbara Line Managed Fishery boat licences are permitted to operate anywhere within "Pilbara waters", bounded by a line commencing at the intersection of 21°56'S latitude and the high water mark on the western side of the North-west Cape on the mainland of WA; west along the parallel to the intersection of 21°56'S latitude and the boundary of the AFZ and north to longitude 120°E.</p>		
				<p>Species targeted</p> <p>The Pilbara Line Managed Fishery catch is made up around 45-50 different fish species.</p> <p>The Pilbara Line Managed Fishery targets similar demersal species to the Pilbara Trap and Trawl fisheries, as well as some deeper offshore species such as ruby snapper and eightbar grouper</p> <p>The Pilbara Line Managed Fishery operates on an exemption basis that enables licence holders to fish for any nominated five-month block during the year.</p>	<p>Fishing method</p> <p>Demersal long line.</p>	<p>Fishing depths</p> <p>Pilbara Line Fishing Depth: Operates up to a depth of 600 m.</p>
				<p>Fishing effort</p> <p>Based on State of the Fisheries annual reports provided by DPIRD, catch trends are seen to be increasing over the past reporting years:</p> <p>Pilbara Line Managed Fishery caught 93 t in 2018-19, 143 t in 2017-18, 126 t in 2016-17, 97 t in 2015-16, 40 t in 2014-15.</p> <p>The total catch in 2018 for the Pilbara Line Managed Fishery was 93 t, making up 3% of the total catch by the Pilbara Demersal Scalefish Fishery (Newman <i>et al.</i>, 2019).</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Active licences/vessels In the 2018 season there are nine individual licences in the Pilbara Line Fishery, held by seven operators. Active vessels data is confidential as there were fewer than three vessels in the Pilbara Line Fishery (Newman <i>et al.</i> , 2018).		
Mackerel Managed Fishery	✓	✓	✓	Management area The commercial fishery extends from Geraldton to the Northern Territory border. There are three managed fishing areas: Kimberley (Area 1), Pilbara (Area 2), and Gascoyne and West Coast (Area 3).		
				Species targeted Spanish mackerel (<i>Scomberomorus commerson</i>) Grey mackerel (<i>S. semifasciatus</i>) Other species from the genus <i>Scomberomorus</i>	Fishing methods Near-surface trawling gear. Jig fishing.	Fishing depth Previous engagement with WAFIC suggests that the depth of fisheries may extend to 70 m.
				Fishing effort: Most of the catch is taken from waters off the Kimberley coasts (Lewis and Brand-Gardner, 2018), reflecting the tropical distribution of mackerel species (Molony <i>et al.</i> , 2015). Most fishing activity occurs around the coastal reefs of the Dampier Archipelago and Port Hedland area, with the seasonal appearance of mackerel in shallower coastal waters most likely associated with feeding and gonad development before spawning (Mackie <i>et al.</i> , 2003). Based on State of the Fisheries annual reports provided by DPIRD, catch trends are as follows: 213 t in 2018-19 (the lowest on record (Lewis <i>et al.</i> , 2020), 283 t in 2017-18, 276 t in 2016-17, 302 t in 2015-16, 322 t in 2014-15.		
				Active licences/vessels: Fifteen boats fished in 2018, with approximately 35-40 people directly employed in the Mackerel Managed Fishery, primarily from May-November (Lewis <i>et al.</i> , 2020).		
Marine Aquarium Managed Fishery	✓	✓	✓	Management area The Marine Aquarium Managed Fishery is able to operate in all State waters. The fishery is typically more active in waters south of Broome and higher levels of effort around the Capes region, Perth, Geraldton, Exmouth, Dampier and Broome (Newman <i>et al.</i> , 2020b).		
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Finfish, hard coral, soft coral, tridacnid clams, syngnathids (seahorses and pipefish), other invertebrates (including molluscs, crustaceans, echinoderms etc.), algae, seagrasses and 'live rock'.	The fishery is diver-based, which typically restricts effort to safe diving depths (less than 30 m).	Less than 30 m, as advised by WAFIC.
				Fishing effort:	Total catch for the Marine Aquarium Managed Fishery in 2018 was 156,188 fishes, 32.025 t of coral, live rock and living sand and 176.02 L of marine plants and live feed.	
				Active licences/vessels:	Eleven licences were active in 2019 (Newman <i>et al.</i> , 2020b).	
Beche-de-mer Fishery	✓	✓	✓	Management area	Fishing occurs in the northern half of WA from Exmouth Gulf to the NT border and is managed under Ministerial Exemptions.	
				Species targeted	Fishing methods	Fishing depth
				The sea cucumber fishery targets two main species: sandfish (<i>Holothuria scabra</i>) and redfish (<i>Actinopyga echinites</i>).	Diving	The targeted species typically inhabit nearshore in shallow depths.
				Fishing effort	Based on State of the Fisheries annual reports provided by DPRID, catch trends are as follows: 62t in 2018 (Gaughan and Santoro, 2020), 135t in 2017, 93t in 2016, 38t in 2015	
				Active licences/vessels	Six active licences in 2019 (Hart <i>et al.</i> , 2019). Active vessels data is confidential as there were fewer than three vessels.	
Onslow Prawn Managed Fishery		✓		Management area	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description						
	Browse	NWS/S	NW Cape							
				<p>The fishery targets: Western king prawns (<i>Penaeus esculentus</i>) Brown tiger prawns (<i>Penaeus esculentus</i>) Blue endeavour prawns (<i>Metapenaeus endeavouri</i>)</p> <p>Low opening, otter prawn trawl systems.</p> <p>Prawn trawling takes place in water depths of approximately 30 metres and less (licence holder feedback). Fishery and or fishing activity overlaps the Beadon Creek dredging scope (Sporer <i>et al.</i>, 2015).</p> <p>Fishing effort: The total landings for the Onslow Prawn Managed Fishery in 2018 were less than 60 t below the target catch range (Kangas <i>et al.</i>, 2020a).</p> <p>Active licences/vessels: One vessel (Kangas <i>et al.</i>, 2020a).</p>						
Pearl Oyster Managed Fishery	✓	✓	✓	<p>Management area Located in shallow coastal waters with the pearl oyster managed fishery designated by four zones extending from Exmouth to Kununurra and the seaward boundary demarcated by the 200 nm EEZ.</p> <table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Pearl oysters (<i>Pinctada maxima</i>).</td> <td>Drift diving.</td> <td>Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).</td> </tr> </tbody> </table> <p>Fishing effort: In 2018, catch was taken from Zones 2 and 3 with no fishing in Zone 1. The number of pearl oysters caught for 2018-19 was 614,002. Total effort was 15,637 dive hours, this was an increase from 2017 effort of 12,845 hours. No fishing occurred in Zone 1 in 2017 and 2018 (Gaughan and Santoro, 2020).</p> <p>Active licences/vessels: 15,637 diver hours (Hart <i>et al.</i>, 2020a).</p>	Species targeted	Fishing methods	Fishing depth	Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).
Species targeted	Fishing methods	Fishing depth								
Pearl oysters (<i>Pinctada maxima</i>).	Drift diving.	Fishing effort is mostly focussed in shallow coastal waters (10-15 m depth), with a maximum depth of 35 m (Lulofs <i>et al.</i> 2002).								
		✓	✓	<p>Management area The Pilbara Crab Managed Fishery comprises WA waters off the north-western coast of WA north of 23° 34' south latitude and west of 120° 00' east longitude. Areas of the fishery north and east of Exmouth and</p>						

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Pilbara Crab Managed Fishery				nearshore are currently closed as per Schedule 2 of the Draft Management Plan for the Pilbara Crab Managed Fishery.			
				Species targeted	Fishing methods	Fishing depth	
				Crabs of the Family Portunidae, excluding crabs of the genus <i>Scylla</i> .	Traps.	Up to 50 m deep.	
				Fishing effort:	The capacity of the fishery is 600 traps.		
				Active licences/vessels:	No information available at this time.		
South-west Coast Salmon Managed Fishery	✓	✓	✓	Management area			
				Species targeted	Fishing methods	Fishing depth	
				Western Australian salmon (<i>Arripis truttaceus</i>)	Beach seine nets.	Information not available however, species generally found in shallow waters (up to 30 m).	
				Fishing effort:	No fishing occurs north of the Perth metropolitan area, despite the managed fishery boundary extending to Cape Beaufort (WA/Northern Territory border), as advised by WAFIC. The 2018 commercial catch was 191 t, with 72% taken by the South West Coast Salmon Managed Fishery, 25% by the South Coast Salmon Managed Fishery and 3% by other fisheries (Duffy and Blay, 2020a).		
				Active licences/vessels:	Six licences.		
	✓	✓	✓	Management area			
				The Specimen Shell Managed Fishery (SSMF) encompasses the entire WA coastline, but effort is concentrated in areas adjacent to the population centres such as Broome, Exmouth, Shark Bay,			

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
Specimen Shell Managed Fishery				Geraldton, Perth, Mandurah, the Capes area and Albany (Hart <i>et al.</i> , 2020b). There are a number of closed areas where the SSMF is not permitted to operate. These include various marine parks and aquatic reserves, such as Ningaloo Marine Park.			
				Species targeted	Fishing methods	Fishing depth	
				The Specimen Shell Managed Fishery targets the collection of specimen shells for display, collection, cataloguing and sale.	Collection is predominantly by hand when diving to wading in shallow, coastal waters, though in deeper water collection may be conducted by remotely operated vehicles (limited to one per licence).	For collection by hand, (diver-based) this typically restricts effort to safe diving depths (less than 30 m). ROV collection could enable depths up to 300 m (Hart <i>et al.</i> , 2017). In the past there has been one licence holder in the Specimen Shell Managed Fishery who has trialled ROV means of shell collection, WAFIC have provided advice that this fishery is no longer active.	
				Fishing effort:	Information not available.		
				Active licences/vessels:	In 2018 there were 31 licences with only two divers allowed in the water per licences at one time (Hart <i>et al.</i> , 2018). The number of people employed regularly in the fishery is likely to be about 21 (Hart <i>et al.</i> , 2018).		
West Australian Abalone Fishery	✓	✓	✓	Management area			
				The Western Australian Abalone Fishery includes all coastal waters from the WA and SA border to the WA and NT border. The fishery is concentrated on the south coast and the west coast.			
				Species targeted	Fishing methods	Fishing depth	
Greenlip abalone (<i>Haliotis laevis</i>) Brownlip abalone (<i>Haliotis conicopora</i>) Roe's abalone (<i>Haliotis roei</i>)	Divers.	Distribution to 5 m depth for Roe's abalone and 40 m depth for greenlip / brownlip abalone (DOF, 2011).					

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: In 2018, the total commercial catch was 48 t, 1 t less than the catch in each of the last two seasons. No commercial fishing for abalone north of Moore River (Zone 8 of the managed fishery) has occurred since 2011–2012 (Strain <i>et al.</i>, 2018).</p> <p>Active licences/vessels: 26 vessels active in Roe's abalone fishery (WAFIC⁵).</p>		
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	✓	<p>Management area The West Coast Deep Sea Crustacean Managed Fishery extends north from Cape Leeuwin to the WA/NT border in water depths greater than 150 m within the AFZ.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>The fishery targets deepwater crustaceans. Catches were dominated by crystal crabs of which 99% of their Total Allowable Catch (TAC) was landed (How and Orme, 2020a). Crystal (snow) crab (<i>Chaceon albus</i>) Giant (king) crab (<i>Pseudocarcinus gigas</i>) Champagne (spiny) crabs (<i>Hypothalassia acerba</i>)</p>	<p>Baited pots, or traps, are operated in long-lines which have between 80 and 180 pots attached to a main line marked by a float at each end.</p>	<p>Deeper than 150 m (and mostly at depths of between 500 m – 800 m). Most of the commercial Crystal crab catch is taken in depths of 500 m – 800 m (WAFIC⁶).</p>
				<p>Fishing effort: The total landings in 2018 was 168. t. Two vessels operated in the fishery in 2017, using baited pots operated in a longline formation in the shelf edge waters, mostly in depths between 500 and 800 m (How and Orme, 2020a). Fishing effort was concentrated between Fremantle and Carnarvon.</p>		
				<p>Active licences/vessels: There were four active vessels in 2018 (How and Orme, 2020a).</p>		

⁵ <https://www.wafic.org.au/fishery/roes-abalone-fishery/>

⁶ <https://www.wafic.org.au/fishery/west-coast-deep-sea-crustacean-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
Abrolhos Islands and Mid-West Trawl Fishery			✓	Management area	The Abrolhos Islands and Mid-West Trawl Fishery (AIMWTMF) operates around the Abrolhos Islands within the SWMR.	
				Species targeted	Fishing methods	Fishing depth
				Saucer scallops (<i>Ylistrum balloti</i> , formerly <i>Amusium balloti</i>)	Trawl.	Information not available, however, the species occurs at depth of around 30-60 m and therefore fishing effort would likely be at these depths (Himmelman <i>et al.</i> , 2009).
				Fishing effort:	The scallop landings in the AIMWTMF were 31.0 t meat weight (154.8 t whole weight). Between 2011 and 2015, the annual pre-season surveys showed very low recruitment (1-year old), as a result of the 2011 extreme marine heatwave and subsequent poor spawning stock (Kangas <i>et al.</i> , 2020b). The fishery was closed between 2011 and 2016.	
				Active licences/vessels:	Information about licences or vessels is not available but the Department of Primary Industry and Regional Development reported 774 t of catch from this fishery in the 2019 annual report (DPIRD, 2019).	
Broome Prawn Managed Fishery	✓			Management area	The Broome Prawn Managed Fishery (BPMF) operates off Broome and forms part of the North Coast Prawn Fishery.	
				Species targeted	Fishing methods	Fishing depth
				Western king prawn (<i>Penaeus latisulcatus</i>) Coral prawn	Trawl.	Trawling is generally in waters between 30 and 60 m deep, however can occur down to 100 m (DOEH, 2004).
				Fishing effort:	BPMF recorded extremely low fishing effort in 2018. Only two vessels undertook trial fishing to investigate whether the catch rates were sufficient for commercial fishing. This resulted in negligible landings of Western king prawn (Kangas <i>et al.</i> , 2020a).	

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				Active licences/vessels: Two vessels conducting fishing trial operated in 2018 (Kangas <i>et al.</i> , 2020a).			
Exmouth Gulf Prawn Managed Fishery			✓	Management area The estimated employment in the fishery in 2017 was 18 people including skippers and other crew (Kangas <i>et al.</i> , 2018). The fishery occupies a total area of 4000 km ² , with only half of this area being trawled (Fletcher and Santoro, 2015).			
				Species targeted	Fishing methods	Fishing depth	
				Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>) Blue endeavour prawn (<i>Metapenaeus endeavouri</i>) Banana prawn (<i>Penaeus merguinensis</i>)	Trawl.	Information not available.	
				Fishing effort:	The total landings of prawns in 2018 were 880 t (Kangas <i>et al.</i> , 2020a). In the 2016 season, a fishing effort of about 23,000 hours resulted in a catch of 822 t.		
				Active licences/vessels:	The precise number of vessels is unreported. Eighteen people were said to be employed in this fishery in 2018 (Kangas <i>et al.</i> , 2019); however, in 2013 it was reported that 18 skippers as well as other crew and support staff were employed (WAFIC ⁷).		
Gascoyne Demersal Scalefish Managed Fishery			✓	Management area The Gascoyne Demersal Scalefish Fishery (GDSF) is located between the southern Ningaloo Coast to south of Shark Bay (23°07.30'S to 26°.30'S) with a closure area at Point Maud to Tantabiddi (21°56.30'S) (WAFIC ⁸).			
				Species targeted	Fishing methods	Fishing depth	

⁷ <https://www.wafic.org.au/fishery/exmouth-gulf-prawn-fishery/>

⁸ <https://www.wafic.org.au/fishery/gascoyne-demersal-scalefish-fishery/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Pink snapper (<i>Chrysophrys auratus</i>) Goldband snapper (<i>Pristipomoides multidentis</i>) Red emperor (<i>Lutjanus sebae</i>) Cods (<i>Gadus morhua</i>) Emperors (<i>Lethrinus miniatus</i>)	Mechanised handlines.	Information not available.
				Fishing effort:	The GDSF reported a total commercial catch of 210 t in 2017-18.	
				Active licences/vessels:	In 2018, 13 vessels fished during the season, in the 2017 season there were 16 vessels (Gaughan and Santoro, 2018).	
Kimberley Developing Mud Crab Fishery	✓			Management area	The Kimberley Developing Mud Crab Fishery is one of two small trap-based crab fisheries that exist in the North Coast Bioregion between Cambridge Gulf and Broome (Gaughan and Santoro, 2018).	
				Species targeted	Fishing methods	Fishing depth
				Brown mud crab (<i>Scylla olivacea</i>) Green mud crab (<i>Scylla serrata</i>)	Trap.	Information not available.
				Fishing effort:	The catch landed represents all commercially caught mud crabs landed in WA for 2018. A nominal catch rate of 0.66 kg/traplift was recorded for 2018, which is a 28% decrease from 2017 but remains above the harvest strategy threshold (Johnston <i>et al.</i> , 2020).	
				Active licences/vessels:	There are currently three licences issued to commercial operators (600 trap limit), and three exemptions issued to Indigenous groups (total of 210 traps currently allocated of a maximum 600 traps) (Johnston <i>et al.</i> , 2020).	
Nickol Bay Prawn Managed Fishery		✓		Management area	The Nickol Bay Prawn Managed Fishery operates in nearshore and offshore waters of the Pilbara region along the NWS.	
				Species targeted	Fishing methods	Fishing depth

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Banana prawn (<i>Penaeus merguianus</i>) Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>) Blue endeavour prawn (<i>Metapenaeus endeavouri</i>)	Trawl.	Information not available.
				Fishing effort:	Trawling has been reported to occur at several locations along the Pilbara coast to the east of the Burrup Peninsula, including within the waters of Nickol Bay (Fletcher and Santoro, 2015). The total landings for the 2018 season were 81 t. Fishing effort was less than half at 138 days, compared to 281 boat days in 2017 (Kangas <i>et al.</i> , 2020a).	
				Active licences/vessels:	The precise number of vessels is unreported, though low effort produced a catch of 17 t in 2016 (Kangas <i>et al.</i> , 2018).	
Northern Demersal Scalefish Managed Fishery	✓			Management area	The fishery is divided into two fishing areas: an inshore sector (Area 1) and an offshore sector (Area 2) (Newman <i>et al.</i> , 2018). Area 1 permits line fishing only, between the high water mark and the 30 m isobath. Area 2 permits handline, dropline and fish trap fishing methods and is further divided into zones. Zone A is an inshore area, Zone B comprises the area with most historical fishing activity, and Zone C is an offshore deep slope area representing waters deeper than 200 m (Fletcher <i>et al.</i> , 2017).	
				Species targeted	Fishing methods	Fishing depth
				Goldband snapper (<i>Pristipomoides multidentis</i>) Blue-spotted emperor (<i>Lethrinus punctulatus</i>) Red emperor (<i>Lutjanus sebae</i>) Rankin cod (<i>Epinephelus multinotatus</i>)	Line fishing, handline, dropline and fish trap fishing.	Information not available.

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				<p>Fishing effort: In 2018, the fishery reported a total catch of 1297 t. Most of the catch is landed from Zone B, with a catch of 1106 t in 2018. The level of catch in Zone B is the highest reported since zoning was implemented in 2006 (Newman <i>et al.</i>, 2019).</p> <p>Active licences/vessels: Six vessels fished in the 2018 season and at least 20 people were directly employed (Gaughan and Santoro, 2018).</p>			
Octopus Interim Management Fishery				<p>Management area The developing Octopus Fishery operates from Kalbarri Cliffs in the north to Esperance in the south.</p>			
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>	
				<p><i>Octopus sp. cf. tetricus</i></p>	<p>Passive shelter pots and active traps.</p>	<p>In inshore waters to a depth of 70 m (DPIRD, 2018).</p>	
				<p>Fishing effort:</p>	<p>In 2019, the total commercial octopus catch was 314 t, which was 22% higher than the 2017 catch of 257 t. In 2016, about 200 vessels reported a total catch of 252 t (Hart <i>et al.</i>, 2020c).</p>		
				<p>Active licences/vessels:</p>	<p>About 21 vessels fish within the octopus specific fisheries, and about 200 vessels from the West Coast Rock Lobster Fishery catch octopus as bycatch (Gaughan and Santoro, 2018).</p>		
Shark Bay Beach Seine and Mesh Net Managed Fishery				<p>Management area The Shark Bay Beach Seine and Mesh Net Managed Fishery operates from Denham.</p>			
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>	
				<p>Whiting (yellowfin <i>Sillago schomburgkii</i> and goldenline <i>S. analis</i>) Sea mullet (<i>Mugil cephalus</i>) Tailor (<i>Pomatomus saltatrix</i>) Western yellowfin bream (<i>Acanthopagrus australis</i>)</p>	<p>Beach seine and mesh net.</p>	<p>Information not available.</p>	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Fishing effort: In 2018, the total catch was 176 t (Gaughan and Santoro, 2020). The fishery currently employs about 14 fishers based on the seven fishery licences in operation (WAFIC⁹).</p> <p>Active licences/vessels: Six vessels operated employing around 12 fishers (Gaughan and Santoro, 2018).</p>		
Shark Bay Crab Managed Fishery				<p>Management area The Shark Bay Crab Managed Fishery operates within the NWMR.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				Blue swimmer crab (<i>Portunus armatus</i>)	Trap and trawl.	Information not available.
				<p>Fishing effort: Commercial fishing for blue swimmer crabs in Shark Bay was voluntarily halted by industry in 2012 to facilitate stock rebuilding. The stock is still in a recovery phase; however, the fishery has resumed and reported a total commercial catch of 518 t in the 2017/18 season. The average commercial trap catch rate was 1.5 kg/traplift during 2017/18 (Chandrapavan <i>et al.</i>, 2017).</p>	<p>Active licences/vessels: The precise number of vessels in the Shark Bay Blue Swimmer Crab Fishery is unreported. There are five crab trap permits. These permits are consolidated onto three active vessels (WAFIC¹⁰).</p>	
				<p>Management area The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns.</p>		
Shark Bay Prawn and Scallop Managed Fishery				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				Western king prawn (<i>Penaeus latisulcatus</i>) Brown tiger prawn (<i>Penaeus esculentus</i>)	Low-opening otter trawls.	Information not available.
				<p>Management area The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns.</p>		

⁹ <https://www.wafic.org.au/fishery/inner-shark-bay-scalefish-fishery/>

¹⁰ <https://www.wafic.org.au/fishery/shark-bay-prawn-and-scallop-managed-fisheries/>

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Endeavour prawns (<i>Metapenaeus endeavouri</i>) Coral prawns (<i>Metapenaeopsis sp.</i>) Saucer scallop (<i>Amusium balloti</i>)</p> <p>Fishing effort: The Shark Bay Scallop Managed Fishery is currently in a recovery phase due to the results from the pre-season survey of stock abundance (Fletcher and Santoro, 2015; Kangas <i>et al.</i>, 2018).</p> <p>Active licences/vessels: The precise number of vessels in the Shark Bay Prawn Managed Fishery is unreported; however, about 100 people are employed in this fishery (Gaughan and Santoro, 2018). About 20 skippers and crew are employed in scallop fishing in the Shark Bay and South Coast fisheries across 18 vessels in 2015 (Sporer <i>et al.</i>, 2015).</p>		
South Coast Crustacean Managed Fishery	-	-	-	<p>Management area The South Coast Crustacean Managed Fishery comprises four fisheries: the Windy Harbour/Augusta Rock Lobster Managed Fishery, the Esperance Rock Lobster Managed Fishery, the Southern Rock Lobster Pot Regulation Fishery and the South Coast Deep-Sea Crab Fishery.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>Southern rock lobster (<i>Jasus edwardsii</i>) Western rock lobster (<i>Panulirus cygnus</i>) Giant crab (<i>Pseudocarcinus gigas</i>) Crystal crab (<i>Chaceon albus</i>) Champagne crab (<i>Hypothalassia acerba</i>)</p>	<p>Pots.</p>	<p>Information not available.</p>
				<p>Fishing effort: The South Coast Crustacean Managed Fishery reported a total catch of 101.2 t in 2018 season and the value of the fishery for 2017/2018 was about \$5.9 million (Howe and Orme, 2020b).</p>	<p>Active licences/vessels: The number of vessels is unknown; however, a total of 1977 pots are licensed to be used.</p>	
				<p>Management area The fishery is active in coastal waters between Cape Leeuwin and the South Australia border. Landings are primarily at Albany, Bremer Bay and Esperance (Norriss and Blazeski, 2020).</p>		
	-	-	-	<p>Management area The fishery is active in coastal waters between Cape Leeuwin and the South Australia border. Landings are primarily at Albany, Bremer Bay and Esperance (Norriss and Blazeski, 2020).</p>		

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Fishery	Woodside Activity Area			Description												
	Browse	NWS/S	NW Cape													
South Coast Purse Seine Managed Fishery				<table border="1"> <thead> <tr> <th>Species targeted</th> <th>Fishing methods</th> <th>Fishing depth</th> </tr> </thead> <tbody> <tr> <td>Small pelagic finfish such as pilchards and yellowtail scad using purse seine nets from vessels. Sandy sprat (<i>Hyperlophus vittatus</i>) Blue sprat (<i>Spratelloides robustus</i>)</td> <td>Purse seine.</td> <td>Information not available.</td> </tr> <tr> <td>Fishing effort:</td> <td colspan="2">In the 2017/18 season the total catch effort was 2,168 t (Norriss and Blazeski, 2020).</td> </tr> <tr> <td>Active licences/vessels:</td> <td colspan="2">Nine active vessels in 2017/18 (Norriss and Blazeski, 2020).</td> </tr> </tbody> </table>	Species targeted	Fishing methods	Fishing depth	Small pelagic finfish such as pilchards and yellowtail scad using purse seine nets from vessels. Sandy sprat (<i>Hyperlophus vittatus</i>) Blue sprat (<i>Spratelloides robustus</i>)	Purse seine.	Information not available.	Fishing effort:	In the 2017/18 season the total catch effort was 2,168 t (Norriss and Blazeski, 2020).		Active licences/vessels:	Nine active vessels in 2017/18 (Norriss and Blazeski, 2020).	
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Active licences/vessels:	Only one boat fished in 2018 for a total of 5 boat days for minimal catch (Fairclough and Walters, 2018).															

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
The South Coast Salmon Managed Fishery	-	-	-	Management area	The South Coast Salmon Managed Fishery is one of two fisheries operating in the South Coast Bioregion that target nearshore and estuarine finfish.	
				Species targeted	Fishing methods	Fishing depth
				Western Australian salmon (<i>Arripis truttaceus</i>) Southern school whiting (<i>Sillago bassensis</i>) Australian herring (<i>Arripis georgianus</i>) King George whiting (<i>Sillaginodes punctatus</i>) Sea mullet (<i>Mugil cephalus</i>) Estuary cobbler (<i>Cnidoglanis macrocephalus</i>) Black bream (<i>Acanthopagrus butcheri</i>)	Beach seines, haul nets and gill nets.	Information not available.
				Fishing effort:	The total catch for 2018 was 243 t (Duffy and Blay, 2020b).	
				Active licences/vessels:	Number of vessels is unknown; however, 12 commercial fishers were employed in 2018 (Duffy and Blay, 2020b).	
West Coast Beach Bait Managed Fishery	-	-	-	Management area	Primarily active in the Bunbury areas in the SWMR.	
				Species targeted	Fishing methods	Fishing depth
				Whitebait	Beach-based haul nets.	Information not available.
				Fishing effort:	In recent years the fishery is primarily active in the Bunbury area. Total catch of whitebait in 2015 was 40.2 t (Duffy and Blay, 2020c).	

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Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NW Cape				
				Active licences/vessels: Number of vessels is unknown; however, only one license was issued (DPIRD, 2019).			
West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery	-	-	-	Management area The West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery (WCDGDLF) is part of the Temperate Demersal Gillnet and Demersal Longline Fishery (TDGDLF), which operates between 26° and 33° S, and the Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery (JASDGDLF), which operates from 33° S to the WA/SA border (Braccini and Blay, 2020).			
				Species targeted	Fishing methods	Fishing depth	
				Gummy shark (<i>Mustelus antarcticus</i>) Dusky shark (<i>Carcharhinus obscurus</i>) Whiskery shark (<i>Furgaleus macki</i>) Sandbar shark (<i>C. plumbeus</i>)	Gillnet and longline.	Information not available.	
				Fishing effort:	Catch estimated annual value of the fishery was \$0.2 million for 2017 to 2018 (Braccini and Blay, 2020).		
				Active licences/vessels:	Vessel numbers are unknown; however, 17 interim managed fishery permits were held in 2019 (DPIRD, 2019) and between 18 and 21 skippers and crew were employed between 2016 and 2017.		
West Coast Demersal Scalefish Fishery	-	-	-	Management area These fisheries include the West Coast Demersal Scalefish (Interim) Managed Fishery (51 boats), the West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery and the temperate Demersal Gillnet and Demersal Longline Fisheries. The West Coast Demersal Scalefish Managed Fishery is the main commercial fishery that targets demersal species in the West Coast Bioregion. It encompasses the waters from just south of Shark Bay down to just east of Augusta and extends seaward to the 200 nm boundary. The fishery is divided into four inshore management areas and one offshore management area.			
				Species targeted	Fishing methods	Fishing depth	
				Baldchin groper (<i>Choerodon rubescens</i>) Dhufish (<i>Glaucosoma hebraicum</i>) Pink snapper (<i>Pagrus auratus</i>)	Lines.	Inshore species – 20 to 250 m water depth.	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				<p>Offshore species – more than 250 m water depth.</p> <p>Fishing effort: In 2016, the West Coast Demersal Scalefish (interim) Managed Fishery reported a total catch of 256 t.</p> <p>Active licences/vessels: The precise number of vessels in the West Coast Demersal Scalefish Fisheries is unreported; however, it is restricted to 60 interim managed fishery permit holders.</p>		
West Coast Purse Seine Managed Fishery	-	-	-	<p>Management area Located in waters from Cape Bouvard extending to Lancelin.</p>		
				<p>Species targeted</p>	<p>Fishing methods</p>	<p>Fishing depth</p>
				<p>Small pelagic finfish such as: Scaly mackerel (<i>Sardinella lemuru</i>) Pilchards (<i>Sardinops sagax</i>) Australian anchovy (<i>Engraulis australis</i>) Yellowtail scad (<i>Trachurus novaezelandiae</i>) Maray (<i>Etrumeus teres</i>)</p>	<p>Purse seine.</p>	<p>Information not available.</p>
				<p>Fishing effort: Information not available</p>	<p>Active licences/vessels: Seven vessels in 2017 (Gaughan and Santoro, 2018).</p>	
West Coast Rock Lobster Managed Fishery			✓	<p>Management area The West Coast Rock Lobster Fishery operates from Shark Bay south to Cape Leeuwin. The fishery is managed using zones, seasons and total allowable catch. The recreational fishery targets the western rock lobsters using baited pots and by diving between North-west Cape and Augusta.</p>		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NW Cape			
				Species targeted	Fishing methods	Fishing depth
				Western rock lobster (<i>Panulirus cygnus</i>)	Baited pots.	Less than 20 m.
				Fishing effort:	In 2018, 234 vessels reported a total catch of 6400 t in 2017 (de Lestang <i>et al.</i> , 2018). In 2016, 226 vessels reported a total catch of 6,086 t (Gaughan and Santoro, 2018).	
				Active licences/vessels:	234 vessels operated in 2017 and 233 vessels operated in 2018 (Gaughan and Santoro, 2018).	

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11.5.2 Aquaculture

Aquaculture operations in the northwest are typically restricted to inland and shallow coastal waters.

West Coast Bioregion

Aquaculture activities in the West Coast bioregion, defined by the Department of Primary Industries and Regional Development (DPIRD) (as the government body responsible management of primary industries in WA) are focused on blue mussels and edible oysters (mainly in Cockburn Sound) and marine algae for production of beta-carotene, used as a food additive and as a nutritional supplement. Offshore marine finfish production is also being developed, initially focusing on yellowtail kingfish.

There is also an emerging black pearl industry (from the *Pinctada margaritifera* oyster) in the Abrolhos Islands. As well as expansion in the production of Akoya pearls (small white pearls from *Pinctada fucata martensi*), *Pinctada albina* (small, yellow pearls) and *Pteria penguin*, which are often used to produce half (mabe) pearls in pink and bluish shades.

Aquaculture licences for producing coral and live rock (pieces of old coral reefs colonised by marine life, such as beneficial bacteria, for aquariums) at the Abrolhos Islands have also been issued and other applications are being assessed.

Gascoyne Coast Bioregion

In the Gascoyne Coast bioregion, aquaculture activities are focused on the blacklip oyster (*Pinctada margaritifera*) and Akoya pearl oyster (*Pinctada imbricata*) (Gaughan and Santoro, 2020). Several hatcheries supply *P. margaritifera* juveniles to the region's developing black pearl farms.

Other aquaculture developments in the Gascoyne Coast bioregion include emerging producers of coral and live rock species for aquariums.

North Coast Bioregion

Aquaculture activities in the North Coast bioregion is dominated by the production of pearls. A large number of pearl oysters for seeding are obtained from wild stocks and supplemented by hatchery produced oysters, with major hatcheries operating at Broome and around the Dampier Peninsula (Gaughan and Santoro, 2018). Primary spawning of the pearl oyster occurs from mid-October to December. A smaller secondary spawning occurs in February and March (Gaughan and Santoro, 2020).

Other aquaculture developments in the North Coast include emerging producers of coral and live rock species for aquariums as well as barramundi (*Lates calcarifer*) farms and microalgae culturing for Omega-3, biofuels and protein biomass (Gaughan and Santoro, 2020).

11.6 Fisheries – Traditional

Traditional or customary fisheries are typically restricted to shallow coastal waters and/or areas with structures such as reef.

Dugong, fish and marine turtles that move between coastal and Commonwealth waters are important components of the Aboriginal people's culture and diet. Aboriginal people continue to actively manage their sea country in coastal waters of WA in order to protect and manage the marine environment, its resources and cultural values.

Indonesian fishers can fish within designated areas under the Australia-Indonesia Memorandum of Understanding regarding the Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974 (MoU 74). Traditional fishing is allowed within the MoU Box (**Figure 11-1**), which encompasses: Ashmore Reef (Pulau Pasir), Cartier Island (Pulau Baru), Seringapatam Reef (Afringan), Scott Reef (Pulau Dato) and Browse Island (Berselan). Restrictions have since been introduced around Ashmore Reef and Cartier Island following their

designation as Nature Reserves under the Commonwealth's *National Parks and Wildlife Conservation Act 1975* in 1983 and 2000, respectively.

The MoU allows Indonesian fishers to fish in designated areas using traditional methods only. These methods include reef gleaning, free-diving, hand lining and other non-mechanised methods. Scott Reef is currently the principal reef in the MoU 74 Box and is utilised seasonally by Indonesian fishers to harvest trepang, trochus shells and other reef species. The peak season is July to October due to more favourable wind conditions, and to allow fishers to sun dry their catch on their boat decks (ERM, 2009). Browse Island is also frequently visited by shark fishers who mostly fish along the eastern margin of the MoU 74 Box.

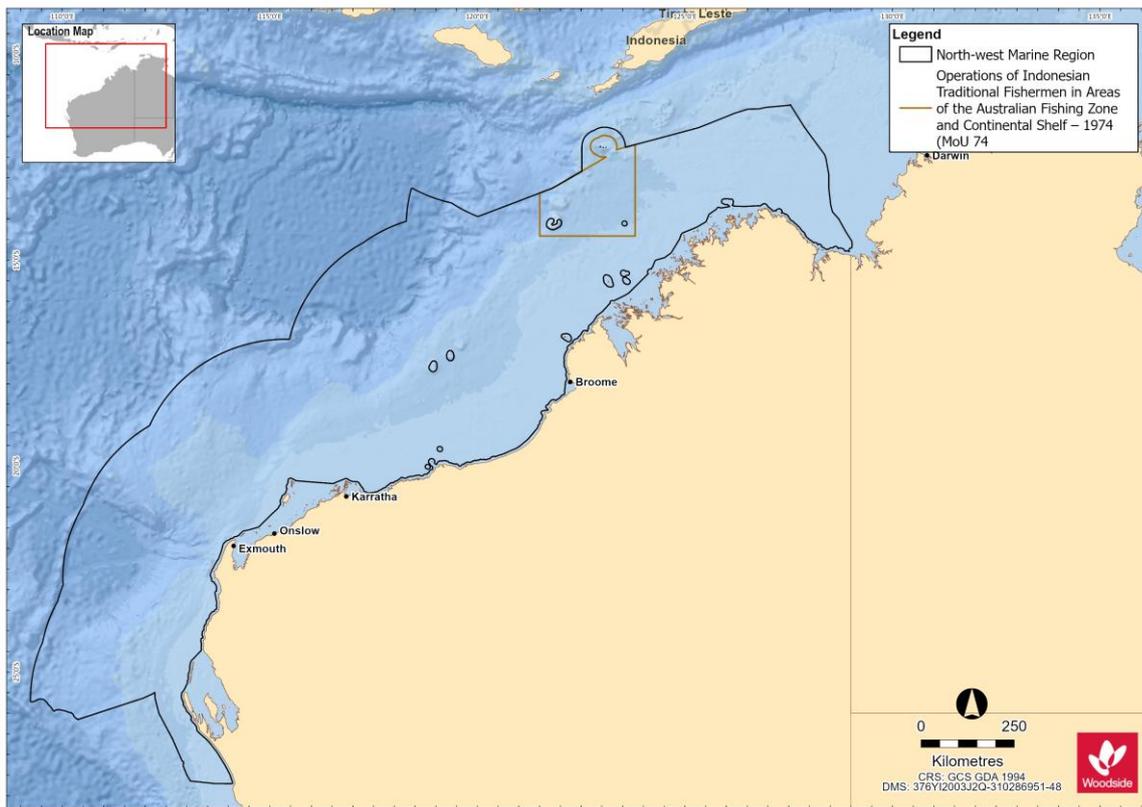


Figure 11-1 MOU 74 Box. Operations of Indonesian Traditional Fishermen in Areas of the Australian Fishing Zone and Continental Shelf – 1974

11.7 Tourism and Recreation

There are growing tourism and recreational sectors in WA. The Kimberley, Pilbara and Gascoyne regions are popular visitor destinations for Australian and international tourists. Tourism is concentrated in the vicinity of population centres including Broome, Dampier, Exmouth, Coral Bay and Shark Bay.

Recreational and tourism activities include: charter fishing, other recreational fishing, diving, snorkelling, marine fauna watching, and yachting.

11.7.1 Gascoyne Region

Outside the petroleum industry, tourism is the largest revenue earner of all the major industries of the Gascoyne region. It contributes significantly to the local economy in terms of both income and

employment. In 2018 there was an average of 337,400 visitors with a visitor spend of \$359 million (Gascoyne Development Commission¹¹).

In 2018-19, the Ningaloo region (Ningaloo Reef and the surrounding coastal region Exmouth Gulf, communities of Exmouth and Coral Bay, and adjacent proposed southern coastal reserves and pastoral leases) contributed an estimated \$110 million in value added to the WA economy (DCBA, 2020). Ningaloo's economic contribution to WA is attributed to four key types of economic activity, tourism expenditure by international, interstate and WA visitors to the Ningaloo region, commercial fishing in the Exmouth Gulf, recreation activity involving the Reef by residents of the Ningaloo region and management and research relating to the Reef (DCBA, 2020). More than 90% of this value added is attributed to the domestic and international tourists who visit Ningaloo each year (DCBA, 2020). The main marine nature-based tourist activities are concentrated around and within the Ningaloo WHA.

11.7.2 Pilbara region

Recreation and tourism activities within the Pilbara are of high social value. Tourism is a key economic driver for the Pilbara with more than 1 million visitors to the region every year, generating \$413 million in gross revenue annually (Pilbara Development Commission¹²).

Recreational fishing within the Pilbara region tends to be concentrated in State waters adjacent to population centres. Recreational fishing is known to occur around the Dampier Archipelago with boats launched from boat ramps around Dampier and Karratha (Williamson *et al.*, 2006). Once at sea, charter vessels may also frequent the waters surrounding the Montebello Islands.

11.7.3 Kimberley Region

Recreation and tourism activities in the Kimberley region occur predominantly in WA State waters (extending offshore 3 nm from the mainland), adjacent to coastal population centres (e.g. Broome), with a peak in activity during the winter months (dry season). These activities include recreational fishing, diving, snorkelling, wildlife watching and boating.

Primary dive locations in the Kimberley region include the Rowley Shoals, including Mermaid Reef AMP, Scott Reef, Seringapatam Reef, Ashmore Reef AMP and Cartier Island.

11.8 Shipping

Commercial shipping traffic is high within the NWMR with vessel activities including commercial fisheries, tourism such as cruises, international shipping and oil and gas operations. There are 12 ports adjacent to the NWMR, including the major ports of Dampier, Port Hedland and Broome, which are operated by their respective port authorities. These ports handle large tonnages of iron ore and petroleum exports in addition to salt, manganese, feldspar chromite and copper (DEWHA, 2008).

Heavy vessel traffic exists within the Pilbara Port Authority management area which recorded 10,064 vessel movements in Port of Dampier 2019/20 annual reporting period (PPA, 2020). Twenty-six designated anchorages for bulk carriers, petroleum and gas tankers, drilling rigs, offshore platforms, and pipelay vessels are located offshore of Rosemary Island.

In 2012, AMSA established a network of shipping fairways off the northwest coast of Australia. The shipping fairways, while not mandatory, aim to reduce the risk of collision between transiting vessels and offshore infrastructure. The fairways are intended to direct large vessels such as bulk carriers and LNG ships trading to the major ports into pre-defined routes to keep them clear of existing and planned offshore infrastructure (AMSA, 2013).

¹¹ <https://www.gdc.wa.gov.au/industry-profiles/tourism/>

¹² <https://www.pdc.wa.gov.au/our-focus/strategicinitiatives/tourism>

11.9 Oil and Gas Infrastructure

The NWMR supports a number of industries including petroleum exploration and production.

Within the NWMR there are seven sedimentary petroleum basins: Northern and Southern Carnarvon basins, Perth, Browse, Roebuck, Offshore Canning and Bonaparte basins. Of these, the Northern Carnarvon, Browse and Bonaparte basins hold large quantities of gas and comprise most of Australia's reserves of natural gas (DEWHA, 2008), which is reflected by the level of development in the area. In addition to existing facilities, there are proposed developments in the region. This includes proposals to develop gas and condensate from a number of fields within the NWMR.

In addition to the oil and gas industry, other land-based industries depend upon the marine environment in the nearshore area. These include ports, salt mines such as Karratha and Onslow, LNG onshore processing facilities such as Burrup Hub, Thevenard Island, Barrow Island, Varanus Island, and small-scale desalination plants at Barrow Island, Burrup, Cape Preston, and Onslow.

11.10 Defence

Key Australian Department of Defence (DoD) operational areas and facilities areas of the NWMR for training and operational activities, include:

- An operating logistics base has been established in Dampier to support vessels patrolling the waters around offshore oil and gas facilities. A dedicated navy administrative support facility is also being constructed at the nearby township of Karratha.
- The Royal Australian Air Force currently maintains two 'bare bases' in remote areas of WA that are used for military exercises. One of these is the Royal Australian Air Force Base in Learmonth. The Royal Australian Air Force maintains the Commonwealth Heritage listed Learmonth Air Weapons Range Facility, which is located between Ningaloo Station and the Cape Range National Park. The air training area associated with the Learmonth base extends over the offshore region.
- The Royal Australian Air Force Base Curtin is located on the north coast of WA, south-east of Derby and 170 km east of Broome. It provides support for land, air and sea operations aimed to support Australia's northern approaches.
- The Naval Communications Station Harold E. Holt is located ~6 km north of Exmouth. The main role of the station is to communicate at very low frequencies (19.8 kHz) with Australian and United States submarines and ships in the eastern Indian Ocean and the western Pacific Ocean.

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APPENDIX A. PROTECTED MATTER SEARCH REPORTS FOR NWMR, SWMR AND NMR



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 10/05/21 12:59:15

[Summary](#)

[Details](#)

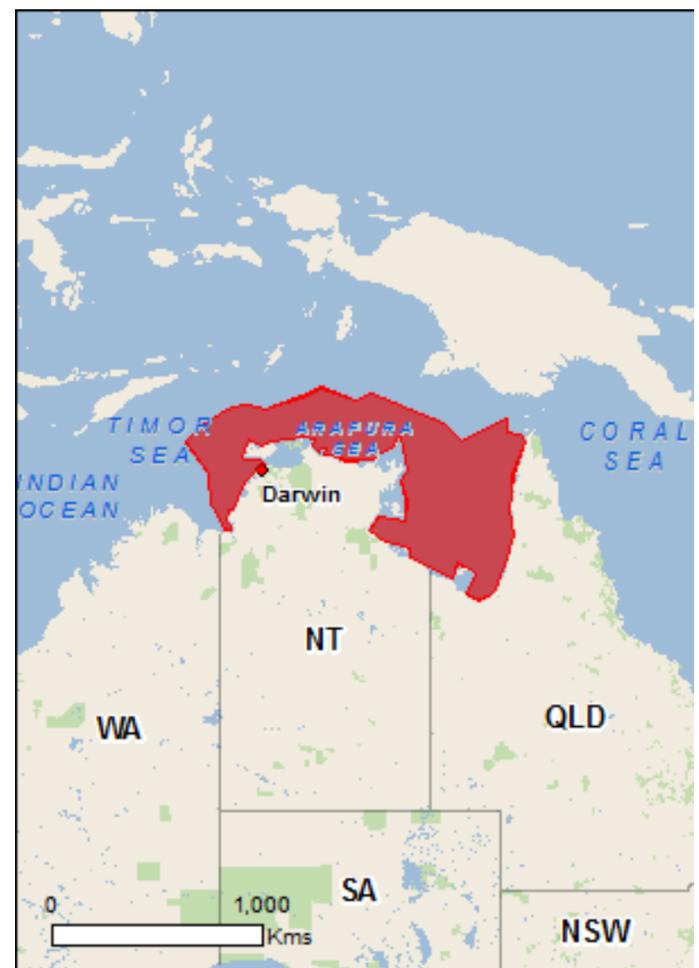
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

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[Buffer: 1.0Km](#)



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	33
Listed Migratory Species:	70

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	127
Whales and Other Cetaceans:	25
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	15

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	None
Invasive Species:	1
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	8

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name

EEZ and Territorial Sea
Extended Continental Shelf

Marine Regions

[\[Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name

[North](#)

Listed Threatened Species

[\[Resource Information \]](#)

Name	Status	Type of Presence
Birds		
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat may occur within area
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-	Vulnerable	Species or species

Name	Status	Type of Presence
tailed Godwit [86380]		habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Notomys aquilo Northern Hopping-mouse, Woorrentinta [123]	Endangered	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheath-tail Bat [66889]	Vulnerable	Species or species habitat may occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Cryptoblepharus gurrumul Arafura Snake-eyed Skink [83106]	Endangered	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat known to occur within area
Glyphis glyphis Speartooth Shark [82453]	Critically Endangered	Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Foraging, feeding or related behaviour known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat likely to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding likely to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species

Name	Threatened	Type of Presence
Tringa nebularia Common Greenshank, Greenshank [832]		habitat known to occur within area Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Foraging, feeding or related behaviour known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat likely to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat known to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Species or species habitat known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area
Hirundo daurica Red-rumped Swallow [59480]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Sterna bengalensis Lesser Crested Tern [815]		Breeding known to occur within area
Sterna bergii Crested Tern [816]		Breeding likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Stiltia isabella Australian Pratincole [818]		Species or species habitat known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area

Fish

Name	Threatened	Type of Presence
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Cosmocampus maxweberi Maxweber's Pipefish [66209]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus macrorhynchus Whiskered Pipefish, Ornate Pipefish [66222]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys parvicarinatus Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippichthys spicifer Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus zebra Zebra Seahorse [66241]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Microphis brachyurus Short-tail Pipefish, Short-tailed River Pipefish [66257]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Enhydrina schistosa Beaked Seasnake [1126]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Seasnake [1101]		Species or species habitat may occur within area
Hydrophis caeruleus Dwarf Seasnake [1103]		Species or species habitat may occur within area
Hydrophis coggeri Slender-necked Seasnake [25925]		Species or species habitat may occur within area
Hydrophis czeb lukovi Fine-spined Seasnake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis gracilis Slender Seasnake [1106]		Species or species habitat may occur within area
Hydrophis inornatus Plain Seasnake [1107]		Species or species habitat may occur within area
Hydrophis mcdowellii null [25926]		Species or species habitat may occur within area
Hydrophis melanosoma Black-banded Robust Seasnake [1109]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Hydrophis pacificus Large-headed Seasnake, Pacific Seasnake [1112]		Species or species habitat may occur within area
Hydrophis vorisi a seasnake [25927]		Species or species

Name	Threatened	Type of Presence
Lapemis hardwickii Spine-bellied Seasnake [1113]		habitat may occur within area Species or species habitat may occur within area
Laticauda colubrina a sea krait [1092]		Species or species habitat may occur within area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Parahydrophis mertoni Northern Mangrove Seasnake [1090]		Species or species habitat may occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans

[[Resource Information](#)]

Name	Status	Type of Presence
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale [58]		Species or species habitat may occur within area

Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat likely to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Name	Label	
Arafura	Multiple Use Zone (IUCN VI)	
Arafura	Special Purpose Zone (Trawl) (IUCN VI)	
Arnhem	Special Purpose Zone (IUCN VI)	
Gulf of Carpentaria	National Park Zone (IUCN II)	
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)	
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)	

Name	Label
Joseph Bonaparte Gulf	Special Purpose Zone (IUCN VI)
Limmen	Habitat Protection Zone (IUCN IV)
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)
Wessel	Habitat Protection Zone (IUCN IV)
Wessel	Special Purpose Zone (Trawl) (IUCN VI)
West Cape York	Habitat Protection Zone (IUCN IV)
West Cape York	National Park Zone (IUCN II)
West Cape York	Special Purpose Zone (IUCN VI)

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Anindilyakwa	NT
Marthakal	NT

Invasive Species [\[Resource Information \]](#)

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Plants		
Andropogon gayanus		
Gamba Grass [66895]		Species or species habitat likely to occur within area

Nationally Important Wetlands [\[Resource Information \]](#)

Name	State
Southern Gulf Aggregation	QLD

Key Ecological Features (Marine) [\[Resource Information \]](#)

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Carbonate bank and terrace system of the Van	North
Gulf of Carpentaria basin	North
Gulf of Carpentaria coastal zone	North
Pinnacles of the Bonaparte Basin	North
Plateaux and saddle north-west of the Wellesley	North
Shelf break and slope of the Arafura Shelf	North
Submerged coral reefs of the Gulf of Carpentaria	North
Tributary Canyons of the Arafura Depression	North

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-14.758882 129.178077,-13.960657 128.826514,-13.768665 128.606788,-12.484784 128.496924,-11.183724 127.563087,-10.460737 128.233253,-9.746889 129.518653,-9.660256 130.254737,-9.779371 130.935889,-9.280976 132.528907,-8.901286 133.385841,-9.411062 134.858008,-9.129149 135.473243,-10.363488 138.582374,-11.129831 139.395362,-10.190527 141.339942,-10.806262 141.317969,-10.817053 141.922217,-11.10827 142.087012,-12.527687 141.559669,-13.330764 141.515723,-13.960657 141.40586,-15.045535 141.570655,-15.945419 141.317969,-17.22994 140.823585,-17.513041 140.53794,-17.659661 140.032569,-17.429205 139.593116,-16.630864 139.966651,-16.409675 139.812842,-16.177683 139.208594,-16.820251 138.966895,-15.924291 137.165137,-15.575354 137.132178,-15.458909 136.934424,-15.289418 136.11045,-14.822615 135.45127,-14.269641 135.846778,-14.418655 136.97837,-13.608551 137.011329,-12.784952 136.780616,-12.388227 137.055274,-10.957305 136.76963,-10.957305 136.703712,-11.399198 136.407081,-11.679068 135.824805,-11.904912 135.616065,-11.947909 134.473487,-11.679068 133.869239,-11.700585 133.50669,-11.431505 133.528663,-11.442273 133.363868,-11.64679 133.254005,-11.313028 132.979346,-11.04358 133.067237,-10.90337 132.583839,-11.151389 131.221534,-11.3238 130.782081,-11.054363 130.287696,-11.474575 130.111915,-11.765126 129.958106,-11.947909 130.067969,-11.894162 130.760108,-12.119827 130.913917,-12.441874 130.474464,-12.870649 130.100928,-13.939333 129.584571,-13.971319 129.419776,-14.47185 129.28794,-14.631358 129.507667,-14.843856 129.452735,-14.769505 129.178077,-14.758882 129.178077

Acknowledgements

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- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 10/05/21 13:07:00

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

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[Buffer: 1.0Km](#)



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	2
National Heritage Places:	5
Wetlands of International Importance:	2
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	70
Listed Migratory Species:	84

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	None
Commonwealth Heritage Places:	1
Listed Marine Species:	149
Whales and Other Cetaceans:	34
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	17

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	10
Regional Forest Agreements:	None
Invasive Species:	23
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	5

Details

Matters of National Environmental Significance

World Heritage Properties		[Resource Information]
Name	State	Status
Shark Bay, Western Australia	WA	Declared property
The Ningaloo Coast	WA	Declared property

National Heritage Properties		[Resource Information]
Name	State	Status
Natural		
Shark Bay, Western Australia	WA	Listed place
The Ningaloo Coast	WA	Listed place
The West Kimberley	WA	Listed place
Indigenous		
Dampier Archipelago (including Burrup Peninsula)	WA	Listed place
Historic		
Dirk Hartog Landing Site 1616 - Cape Inscription Area	WA	Listed place

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Eighty-mile beach	Within Ramsar site	
Ord river floodplain	Within 10km of Ramsar	

Commonwealth Marine Area		[Resource Information]
Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.		

Name
EEZ and Territorial Sea
Extended Continental Shelf

Marine Regions		[Resource Information]
If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.		

Name
North-west

Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		

Name	Status	Type of Presence
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Endangered	Community likely to occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species

Name	Status	Type of Presence
Calidris tenuirostris Great Knot [862]	Critically Endangered	habitat known to occur within area Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Erythrura gouldiae Gouldian Finch [413]	Endangered	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Falcunculus frontatus whitei Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
Geophaps smithii blaauwi Partridge Pigeon (western) [66501]	Vulnerable	Species or species habitat likely to occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Malurus leucopterus leucopterus White-winged Fairy-wren (Dirk Hartog Island), Dirk Hartog Black-and-White Fairy-wren [26004]	Vulnerable	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Pezoporus occidentalis Night Parrot [59350]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Tyto novaehollandiae kimberli Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Bettongia lesueur lesueur Burrowing Bettong (Shark Bay), Boodie [66659]	Vulnerable	Species or species habitat likely to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat likely to occur within area
Conilurus penicillatus Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat may occur within area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Isodon auratus auratus Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
Lagostrophus fasciatus fasciatus Banded Hare-wallaby, Merrnine, Marnine, Munning [66664]	Vulnerable	Translocated population known to occur within area
Leporillus conditor Wopilkara, Greater Stick-nest Rat [137]	Vulnerable	Translocated population known to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat known to occur within area
Macrotis lagotis Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Perameles bougainville bougainville Western Barred Bandicoot (Shark Bay) [66631]	Endangered	Translocated population known to occur within area
Petrogale concinna monastria Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat known to occur within area
Phascogale tapoatafa kimberleyensis Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area
Rhinonictes aurantia (Pilbara form) Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat may occur within area
Saccolaimus saccolaimus nudicluniatus Bare-rumped Sheath-tailed Bat, Bare-rumped Sheath-tail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat may occur within area
Reptiles		
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Lerista neviniae Nevin's Slider [85296]	Endangered	Species or species habitat known to occur within area
Liasis olivaceus barroni Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area

Sharks

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Glyphis garricki Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat known to occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species

Name	Threatened	Type of Presence
Diomedea exulans Wandering Albatross [89223]	Vulnerable	habitat likely to occur within area Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Foraging, feeding or related behaviour likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sternula albifrons Little Tern [82849]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Anoxypristis cuspidata Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Dugong dugon Dugong [28]		Breeding known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur

Name	Threatened	Type of Presence within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Orcaella heinsohni Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pristis clavata Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
Pristis pristis Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cecropis daurica Red-rumped Swallow [80610]		Species or species habitat may occur within area
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Natural		
Ningaloo Marine Area - Commonwealth Waters	WA	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Acrocephalus orientalis Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris alba Sanderling [875]		Species or species

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	habitat known to occur within area Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area
Hirundo daurica Red-rumped Swallow [59480]		Species or species habitat may occur within area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area
Larus novaehollandiae Silver Gull [810]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Foraging, feeding or related behaviour known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Papasula abbotti Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Foraging, feeding or related behaviour likely to occur within area
Pluvialis squatarola Grey Plover [865]		Species or species habitat known to occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Foraging, feeding or

Name	Threatened	Type of Presence
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	related behaviour known to occur within area Foraging, feeding or related behaviour likely to occur within area
Puffinus assimilis Little Shearwater [59363]		Foraging, feeding or related behaviour known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to occur within area
Puffinus pacificus Wedge-tailed Shearwater [1027]		Breeding known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Sterna albifrons Little Tern [813]		Breeding known to occur within area
Sterna anaethetus Bridled Tern [814]		Breeding known to occur within area
Sterna bengalensis Lesser Crested Tern [815]		Breeding known to occur within area
Sterna bergii Crested Tern [816]		Breeding known to occur within area
Sterna caspia Caspian Tern [59467]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding likely to occur within area
Sterna fuscata Sooty Tern [794]		Breeding known to occur within area
Sterna nereis Fairy Tern [796]		Breeding known to occur within area
Sula leucogaster Brown Booby [1022]		Breeding known to occur within area
Sula sula Red-footed Booby [1023]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area

Name	Threatened	Type of Presence
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Tringa glareola Wood Sandpiper [829]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Species or species habitat known to occur within area
Fish		
Acentronura larsonae Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
Bhanotia fasciolata Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area
Bulbonaricus brauni Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Campichthys tricarinatus Three-keel Pipefish [66192]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Choeroichthys latispinosus Muiron Island Pipefish [66196]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Cosmocampus banneri Roughridge Pipefish [66206]		Species or species habitat may occur within area
Doryrhamphus dactyliophorus Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Doryrhamphus janssi Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
Doryrhamphus multiannulatus Many-banded Pipefish [66717]		Species or species habitat may occur within area
Doryrhamphus negrosensis Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
Festucalex scalaris Ladder Pipefish [66216]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Haliichthys taeniophorus Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus histrix Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus spinosissimus Hedgehog Seahorse [66239]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Micrognathus micronotopterus Tidepool Pipefish [66255]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Phoxocampus belcheri Black Rock Pipefish [66719]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Trachyrhamphus longirostris Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus apraefrontalis Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Aipysurus foliosquama Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Aipysurus tenuis Brown-lined Seasnake [1121]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Breeding known to occur within area
Crocodylus johnstoni Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Enhydrina schistosa Beaked Seasnake [1126]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
Hydrelaps darwiniensis Black-ringed Seasnake [1100]		Species or species habitat may occur within area
Hydrophis atriceps Black-headed Seasnake [1101]		Species or species habitat may occur within area
Hydrophis coggeri Slender-necked Seasnake [25925]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Hydrophis czeblukovi Fine-spined Seasnake [59233]		Species or species habitat may occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Hydrophis inornatus Plain Seasnake [1107]		Species or species habitat may occur within area
Hydrophis mcdowelli null [25926]		Species or species habitat may occur within area
Hydrophis ornatus Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
Lapemis hardwickii Spine-bellied Seasnake [1113]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans

[[Resource Information](#)]

Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within

Name	Status	Type of Presence area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Indopacetus pacificus Longman's Beaked Whale [72]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale [58]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Breeding known to occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species

Name	Status	Type of Presence
Stenella longirostris Long-snouted Spinner Dolphin [29]		habitat may occur within area Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops aduncus (Arafura/Timor Sea populations) Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [\[Resource Information \]](#)

Name	Label
Abrolhos	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Special Purpose Zone (IUCN VI)
Argo-Rowley Terrace	Multiple Use Zone (IUCN VI)
Argo-Rowley Terrace	National Park Zone (IUCN II)
Dampier	Habitat Protection Zone (IUCN IV)
Dampier	Multiple Use Zone (IUCN VI)
Eighty Mile Beach	Multiple Use Zone (IUCN VI)
Gascoyne	Habitat Protection Zone (IUCN IV)
Gascoyne	Multiple Use Zone (IUCN VI)
Gascoyne	National Park Zone (IUCN II)
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)
Kimberley	Multiple Use Zone (IUCN VI)
Ningaloo	Recreational Use Zone (IUCN IV)
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Roebuck	Multiple Use Zone (IUCN VI)
Shark Bay	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Name	State
Bardi Jawi	WA
Dambimangari	WA
Dambimangari	WA
Dirk Hartog Island	WA
Faure Island	WA
Little Rocky Island	WA
Tent Island	WA
Unnamed WA36913	WA
Unnamed WA36915	WA
Uunguu	WA

Invasive Species

[[Resource Information](#)]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Streptopelia senegalensis Laughing Turtle-dove, Laughing Dove [781]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Andropogon gayanus Gamba Grass [66895]		Species or species habitat likely to occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species

Name	Status	Type of Presence
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Reptiles

Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat likely to occur within area
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Nationally Important Wetlands

[[Resource Information](#)]

Name	State
Exmouth Gulf East	WA
Hamelin Pool	WA
Shark Bay East	WA

Key Ecological Features (Marine)

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Carbonate bank and terrace system of the Sahul	North-west
Commonwealth waters adjacent to Ningaloo Reef	North-west
Continental Slope Demersal Fish Communities	North-west
Pinnacles of the Bonaparte Basin	North-west
Wallaby Saddle	North-west

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-11.269933 127.440005,-12.516962 128.274966,-13.416271 128.362857,-13.854015 128.406802,-14.652617 128.879214,-14.833236 128.956119,-14.737633 128.439761,-14.280288 127.769595,-13.864681 127.385074,-13.864681 127.143375,-13.67261 126.934634,-13.875347 126.418277,-13.843348 126.242496,-13.896678 125.967837,-14.077907 125.934878,-14.34416 125.836001,-14.216398 125.649234,-14.461212 125.099918,-14.641988 125.044986,-14.88633 125.143863,-14.971254 124.990054,-15.257624 124.649478,-15.268222 124.231998,-15.416549 124.16608,-15.490673 124.407779,-16.293713 124.286929,-16.072142 123.616763,-16.219884 123.429996,-16.567693 123.408023,-16.778181 123.561832,-16.914874 123.704654,-17.114478 123.397037,-16.546631 123.034488,-16.251529 123.078433,-16.704537 122.540103,-17.135476 122.144595,-17.502564 122.056705,-18.244939 122.078677,-18.432649 121.738101,-18.76585 121.551334,-19.45099 121.100894,-19.999097 119.584781,-19.906155 119.101382,-20.236365 118.727847,-20.308506 118.112613,-20.648142 117.321597,-20.555589 116.948062,-20.360014 117.01398,-20.318809 116.816226,-20.802273 116.26691,-20.822812 116.113101,-21.468342 115.377017,-21.754335 114.629947,-22.344932 114.355289,-22.202601 114.146548,-21.67268 114.245425,-21.886924 113.849918,-22.669716 113.586246,-23.003846 113.751041,-23.458145 113.696109,-24.031352 113.300601,-24.51208 113.311587,-25.893759 114.135562,-26.258875 114.003726,-25.953045 113.926822,-25.398562 113.45441,-25.686027 113.366519,-26.249022 113.641177,-26.229314 113.509341,-25.378711 112.949039,-25.557248 112.839175,-26.485263 113.256656,-27.161748 113.816959,-27.571531 114.036685,-27.552052 113.113834,-27.151972 112.981998,-25.368784 112.278873,-26.022173 110.389224,-25.893759 110.323306,-25.804776 109.872867,-25.537424 109.587222,-25.626608 109.23566,-24.582033 109.389468,-23.306884 109.872867,-22.882439 110.026675,-21.621623 110.169498,-20.945986 110.510074,-20.030065 110.949527,-19.025706 112.092105,-17.816621 112.981998,-17.271909 113.773013,-16.935895 115.442935,-15.681156 116.014224,-14.790751 116.89313,-14.056594 118.266421,-13.266614 118.42023,-13.949995 120.046207,-13.234532 121.825992,-12.838516 122.529117,-12.15205 122.51813,-11.883411 122.726871,-11.786636 123.067447,-11.926411 123.440982,-12.248693 123.583804,-11.63603 125.737125,-11.334573 126.539126,-11.280707 127.440005,-11.269933 127.440005

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- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
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- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 10/05/21 12:51:00

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

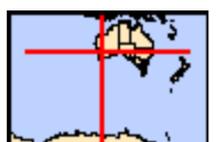
[Acknowledgements](#)



This map may contain data which are
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[Coordinates](#)

[Buffer: 1.0Km](#)



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	3
Listed Threatened Species:	65
Listed Migratory Species:	67

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	2
Commonwealth Heritage Places:	1
Listed Marine Species:	106
Whales and Other Cetaceans:	40
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	21

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	10
Regional Forest Agreements:	None
Invasive Species:	42
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	8

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Indigenous		
Cheetup Rock Shelter	WA	Listed place

Wetlands of International Importance (Ramsar)		[Resource Information]
Name	Proximity	
Becher point wetlands	Within 10km of Ramsar	
Forrestdale and thomsons lakes	Within 10km of Ramsar	
Peel-yalgorup system	Within 10km of Ramsar	
Vasse-wonnerup system	Within 10km of Ramsar	

Commonwealth Marine Area	[Resource Information]
Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.	

Name
EEZ and Territorial Sea
Extended Continental Shelf

Marine Regions	[Resource Information]
If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.	

Name
South-west

Listed Threatened Ecological Communities	[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.	

Name	Status	Type of Presence
Banksia Woodlands of the Swan Coastal Plain ecological community	Endangered	Community may occur within area
Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia	Endangered	Community may occur within area
Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community	Critically Endangered	Community likely to occur within area

Listed Threatened Species	[Resource Information]	
Name	Status	Type of Presence
Birds		
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Atrichornis clamosus Noisy Scrub-bird, Tjimiluk [654]	Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Calyptorhynchus banksii naso Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus latirostris Carnaby's Cockatoo, Short-billed Black-Cockatoo [59523]	Endangered	Species or species habitat known to occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel	Endangered	Species or species

Name	Status	Type of Presence
[1060]		habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Pezoporus flaviventris Western Ground Parrot, Kyloring [84650]	Critically Endangered	Species or species habitat likely to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Mammals		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Bettongia penicillata ogilbyi Woylie [66844]	Endangered	Species or species habitat may occur within

Name	Status	Type of Presence area
Dasyurus geoffroii Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Parantechinus apicalis Dibbler [313]	Endangered	Species or species habitat known to occur within area
Petrogale lateralis hacketti Recherche Rock-wallaby [66849]	Vulnerable	Species or species habitat known to occur within area
Potorous gilbertii Gilbert's Potoroo, Ngilkat [66642]	Critically Endangered	Translocated population known to occur within area
Pseudocheirus occidentalis Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]	Critically Endangered	Species or species habitat may occur within area
Setonix brachyurus Quokka [229]	Vulnerable	Species or species habitat known to occur within area
Plants		
Caladenia elegans Elegant Spider-orchid [56775]	Endangered	Species or species habitat may occur within area
Caladenia granitora [65292]	Endangered	Species or species habitat may occur within area
Caladenia hoffmanii Hoffman's Spider-orchid [56719]	Endangered	Species or species habitat may occur within area
Diuris micrantha Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat likely to occur within area
Drummondita ericoides Morseby Range Drummondita [9193]	Endangered	Species or species habitat likely to occur within area
Eucalyptus insularis Twin Peak Island Mallee [3057]	Endangered	Species or species habitat likely to occur within area
Isopogon uncinatus Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Name	Status	Type of Presence
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Egernia stokesii badia Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]	Endangered	Species or species habitat may occur within area
Liopholis pulchra longicauda Jurien Bay Skink, Jurien Bay Rock-skink [83162]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Sharks

Carcharias taurus (west coast population) Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat known to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species

[[Resource Information](#)]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat may occur within area
Ardenna pacifica Wedge-tailed Shearwater [84292]		Breeding known to occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Threatened	Type of Presence
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Hydroprogne caspia Caspian Tern [808]		Breeding known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Onychoprion anaethetus Bridled Tern [82845]		Breeding known to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Breeding known to occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Isurus paucus Longfin Mako [82947]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat known to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species

Name	Threatened	Type of Presence
Migratory Terrestrial Species		
Motacilla cinerea Grey Wagtail [642]		habitat may occur within area Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Thalasseus bergii Greater Crested Tern [83000]		Breeding known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [\[Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN ISLAND

Commonwealth Heritage Places [\[Resource Information \]](#)

Name	State	Status
Natural Garden Island	WA	Listed place

Listed Marine Species [\[Resource Information \]](#)

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anous tenuirostris melanops Australian Lesser Noddy [26000]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat likely to occur within area
Calidris alba Sanderling [875]		Species or species

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	habitat known to occur within area Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Cereopsis novaehollandiae grisea Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Diomedea amsterdamensis Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea dabbenena Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area

Name	Threatened	Type of Presence
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Glareola maldivarum Oriental Pratincole [840]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Species or species habitat known to occur within area
Larus novaehollandiae Silver Gull [810]		Breeding known to occur within area
Larus pacificus Pacific Gull [811]		Breeding known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pelagodroma marina White-faced Storm-Petrel [1016]		Breeding known to occur within area
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma macroptera Great-winged Petrel [1035]		Breeding known to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely

Name	Threatened	Type of Presence
Puffinus assimilis Little Shearwater [59363]		to occur within area Breeding known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Breeding known to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat may occur within area
Puffinus pacificus Wedge-tailed Shearwater [1027]		Breeding known to occur within area
Puffinus tenuirostris Short-tailed Shearwater [1029]		Breeding known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area
Sterna anaethetus Bridled Tern [814]		Breeding known to occur within area
Sterna bergii Crested Tern [816]		Breeding known to occur within area
Sterna caspia Caspian Tern [59467]		Breeding known to occur within area
Sterna dougallii Roseate Tern [817]		Breeding known to occur within area
Sterna fuscata Sooty Tern [794]		Breeding known to occur within area
Sterna nereis Fairy Tern [796]		Breeding known to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thinornis rubricollis Hooded Plover [59510]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

Fish

Name	Threatened	Type of Presence
Acentronura australe Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
Campichthys galei Gale's Pipefish [66191]		Species or species habitat may occur within area
Choeroichthys suillus Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
Halicampus brocki Brock's Pipefish [66219]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus angustus Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus subelongatus West Australian Seahorse [66722]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus fatiloquus Prophet's Pipefish [66250]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys meraculus Western Crested Pipefish [66259]		Species or species habitat may occur within area
Nannocampus subosseus Bonyhead Pipefish, Bony-headed Pipefish [66264]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus lettiensis Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Long-snout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Breeding known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
Reptiles		
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Aipysurus pooleorum Shark Bay Seasnake [66061]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Ephalophis greyi North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans [Resource Information]

Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Migration route known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Berardius arnuxii Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within

Name	Status	Type of Presence area
Hyperoodon planifrons Southern Bottlenose Whale [71]		Species or species habitat may occur within area
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area
Kogia simus Dwarf Sperm Whale [58]		Species or species habitat may occur within area
Lagenodelphis hosei Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat likely to occur within area
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
Mesoplodon ginkgodens Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
Mesoplodon hectori Hector's Beaked Whale [76]		Species or species habitat may occur within area
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area
Physeter macrocephalus Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area
Tasmacetus shepherdi Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Australian Marine Parks [Resource Information]

Name	Label
Abrolhos	Habitat Protection Zone (IUCN IV)
Abrolhos	Multiple Use Zone (IUCN VI)
Abrolhos	Special Purpose Zone (IUCN VI)
Bremer	National Park Zone (IUCN II)
Bremer	Special Purpose Zone (Mining)
Eastern Recherche	National Park Zone (IUCN II)
Eastern Recherche	Special Purpose Zone (IUCN VI)
Geographe	Habitat Protection Zone (IUCN IV)
Geographe	Multiple Use Zone (IUCN VI)
Geographe	National Park Zone (IUCN II)
Geographe	Special Purpose Zone (Mining)
Great Australian Bight	Special Purpose Zone (Mining)
Jurien	Special Purpose Zone (IUCN VI)
South-west Corner	Habitat Protection Zone (IUCN IV)
South-west Corner	Multiple Use Zone (IUCN VI)
South-west Corner	National Park Zone (IUCN II)
South-west Corner	Special Purpose Zone (IUCN VI)
South-west Corner	Special Purpose Zone (Mining)
Twilight	National Park Zone (IUCN II)
Twilight	Special Purpose Zone (Mining)
Two Rocks	Multiple Use Zone (IUCN VI)

Extra Information

State and Territory Reserves		[Resource Information]
Name	State	
Bald Island	WA	
Boullanger, Whitlock, Favourite, Tern And Osprey Islands	WA	
Eclipse Island	WA	
Escape Island	WA	
Flinders Bay	WA	
Penguin Island	WA	
Recherche Archipelago	WA	
St Alouarn Island	WA	
Unnamed WA44682	WA	
Unnamed WA48968	WA	

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
Birds		
<p><i>Acridotheres tristis</i> Common Myna, Indian Myna [387]</p>		Species or species habitat likely to occur within area
<p><i>Anas platyrhynchos</i> Mallard [974]</p>		Species or species habitat likely to occur within area
<p><i>Carduelis carduelis</i> European Goldfinch [403]</p>		Species or species habitat likely to occur within area
<p><i>Columba livia</i> Rock Pigeon, Rock Dove, Domestic Pigeon [803]</p>		Species or species habitat likely to occur within area
<p><i>Passer domesticus</i> House Sparrow [405]</p>		Species or species habitat likely to occur within area
<p><i>Passer montanus</i> Eurasian Tree Sparrow [406]</p>		Species or species habitat likely to occur within area
<p><i>Streptopelia chinensis</i> Spotted Turtle-Dove [780]</p>		Species or species habitat likely to occur within area
<p><i>Streptopelia senegalensis</i> Laughing Turtle-dove, Laughing Dove [781]</p>		Species or species habitat likely to occur within area
<p><i>Sturnus vulgaris</i> Common Starling [389]</p>		Species or species habitat likely to occur within area
<p><i>Turdus merula</i> Common Blackbird, Eurasian Blackbird [596]</p>		Species or species habitat likely to occur within area
Mammals		
<p><i>Bos taurus</i> Domestic Cattle [16]</p>		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Funambulus pennantii Northern Palm Squirrel, Five-striped Palm Squirrel [129]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Brachiaria mutica Para Grass [5879]		Species or species habitat may occur within area
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat may occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Genista linifolia Flax-leaved Broom, Mediterranean Broom, Flax Broom [2800]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Olea europaea Olive, Common Olive [9160]		Species or species habitat may occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

Key Ecological Features (Marine)

[[Resource Information](#)]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region
Ancient coastline at 90-120m depth	South-west
Commonwealth marine environment surrounding	South-west
Commonwealth marine environment within and	South-west
Commonwealth marine environment within and	South-west
Diamantina Fracture Zone	South-west
Naturaliste Plateau	South-west
Western demersal slope and associated fish	South-west
Western rock lobster	South-west

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-25.765206 109.237891,-25.725623 109.501563,-25.992551 109.732276,-25.992551 109.875098,-26.071525 110.182716,-26.229314 110.325538,-25.656321 112.127296,-27.717513 112.984229,-27.814726 114.02793,-28.202708 114.159766,-28.483117 114.445411,-28.695347 114.577247,-28.974447 114.599219,-29.147305 114.818946,-29.530391 114.950782,-29.921554 114.89585,-30.746498 115.082618,-31.517621 115.533057,-31.863505 115.730811,-32.523601 115.67588,-32.634692 115.544044,-33.16049 115.620948,-33.619137 115.302344,-33.49096 114.994727,-33.737988 114.928809,-34.275319 114.972755,-34.46575 115.126563,-34.366055 115.269385,-34.818257 115.917579,-34.908402 116.060401,-35.106373 116.598731,-35.11536 117.389747,-35.169263 117.774268,-35.169263 118.081885,-34.980447 118.312598,-34.402321 119.663917,-34.30255 119.56504,-34.029844 119.883643,-33.938746 120.960303,-33.911398 121.399757,-34.011632 121.949073,-34.102652 122.476417,-34.038948 123.432227,-33.591687 124.091407,-33.10529 124.212257,-32.902593 125.014258,-32.319576 126.134864,-32.375265 127.123633,-31.760809 129.035255,-35.294897 129.068214,-35.634921 127.541114,-37.453004 125.157081,-37.696807 123.058692,-37.688114 120.817481,-38.46644 118.664161,-38.337294 115.697852,-37.418109 113.368751,-36.584603 112.028419,-34.998448 111.061622,-33.545916 110.973731,-31.984725 111.512061,-31.414542 111.270362,-30.026241 110.182716,-28.396173 109.798194,-27.756409 109.875098,-25.765206 109.237891,-25.765206 109.237891

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
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- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
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- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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APPENDIX B. SUPPORTING FIGURES FOR SECTION 2.3 METEOROLOGY AND OCEANOGRAPHY

Browse

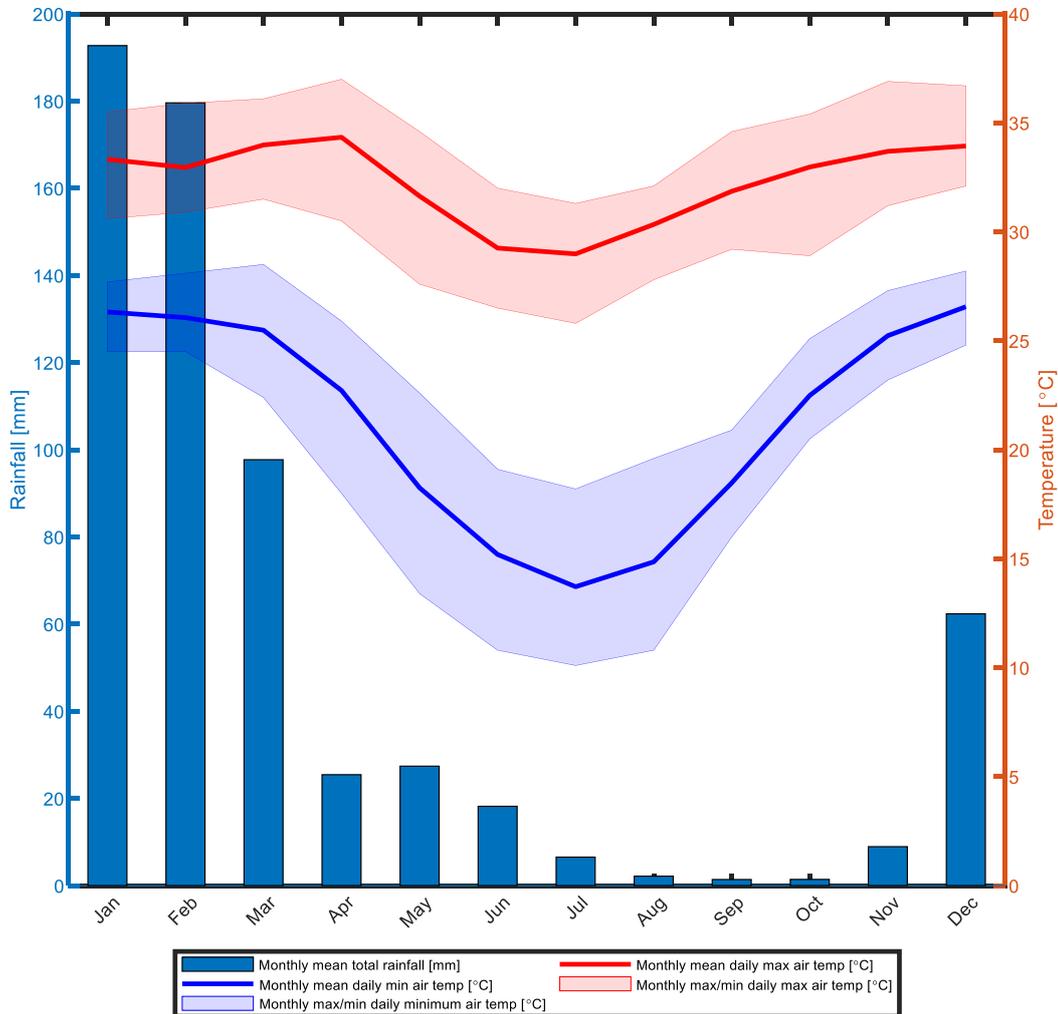
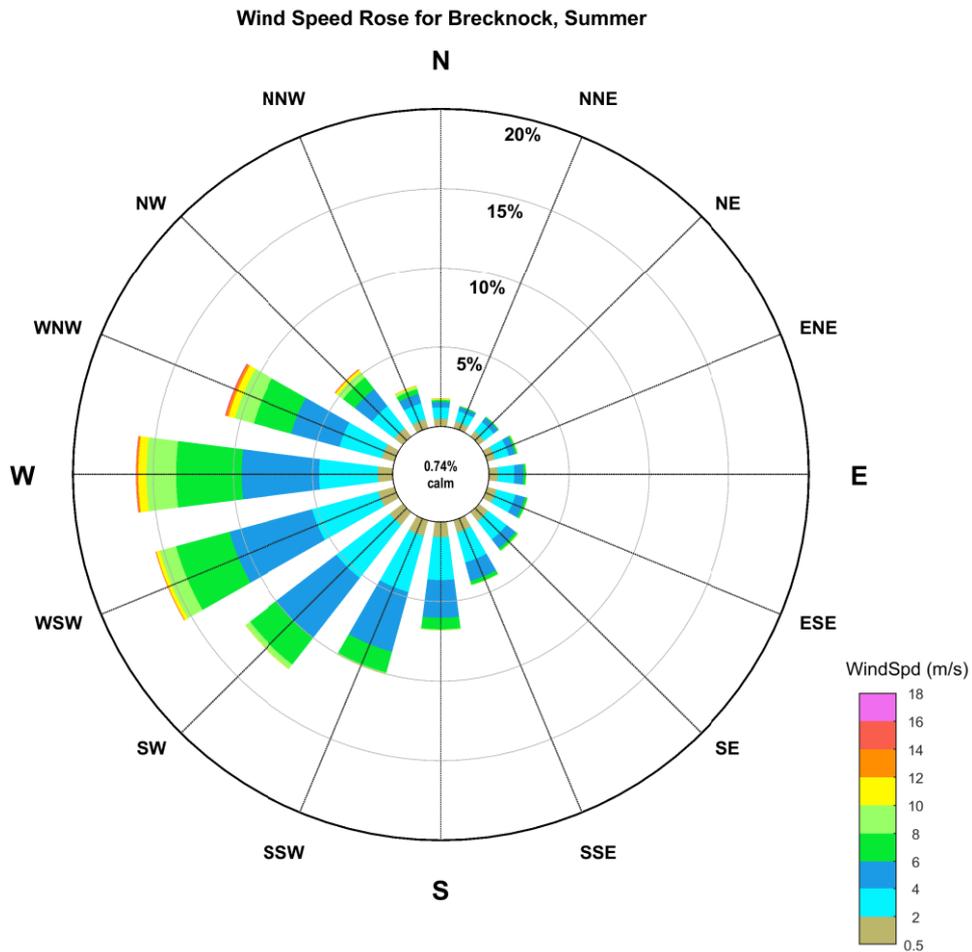


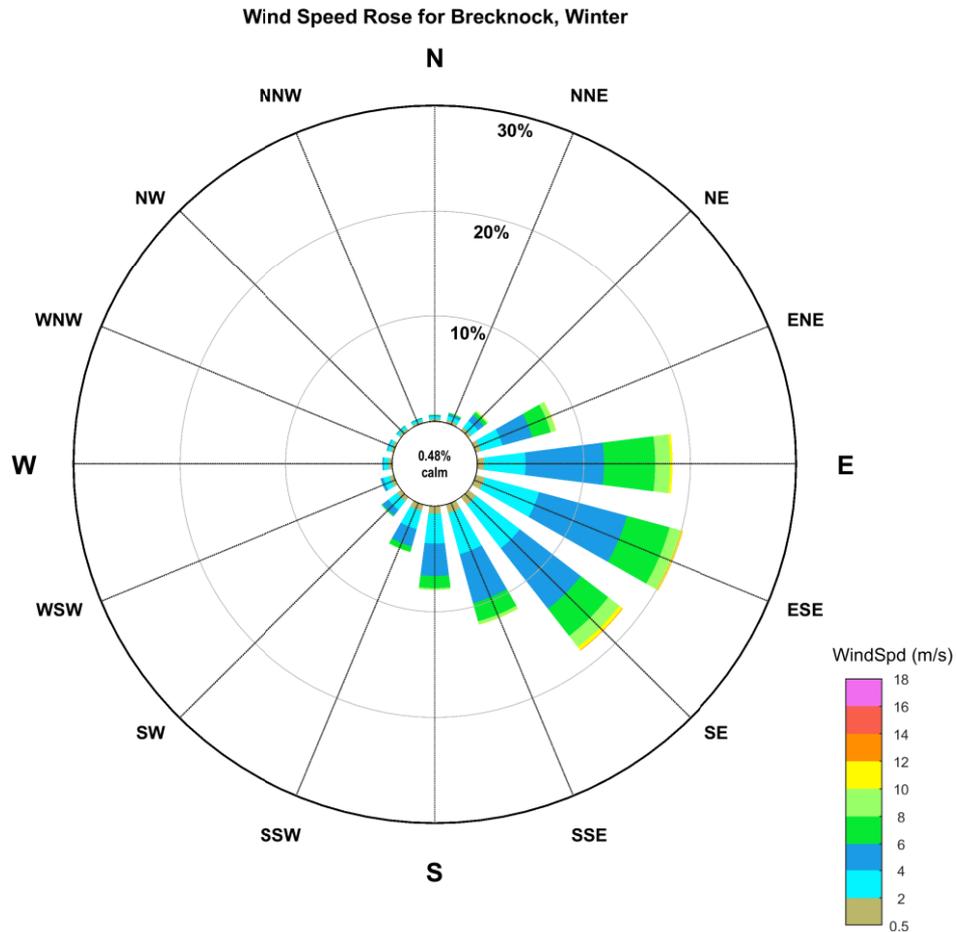
Figure 1. Monthly average total rainfall [mm] and air temperature [°C], calculated based on observations at the Broome Airport weather station from 1939-2020 (Bureau of Meteorology 2020). Bars show the monthly average total rainfall values, and thick blue and red lines denote monthly average daily minimum and maximum air temperatures, respectively. Shaded blue and red areas denote monthly recorded extremes of daily minimum and maximum air temperature, respectively.



<p>Data Information: Project: Browse Location: Brecknock [121.6500°E, 14.5300°S] Data Period: Summer (01-Jan-1979 to 01-Jan-2019) Data Source: Modelled Hindcast Record Elevation: 10 m AMSL Local Water Depth (m): 560 Data Summary: Summer Number of Records: 164812 Missing Data (%): 5.80 Calm (% < 0.50m/s): 0.74 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 20.60 m/s Mean Wind Speed: 4.55 m/s StdDev. Wind Speed: 2.31 m/s</p>
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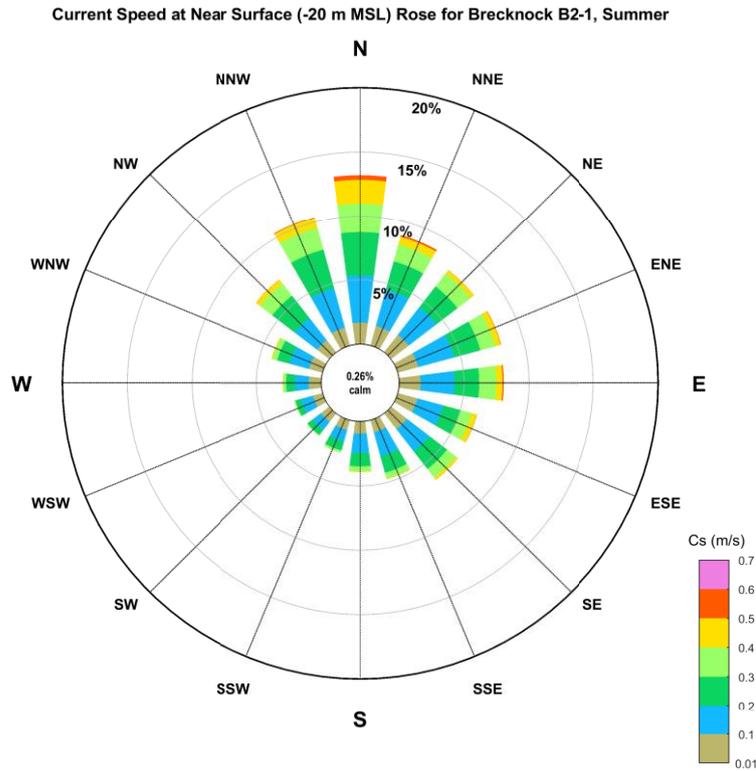


Figure 2. Summer distributions of 10-minute average wind speeds by 22.5° directional sectors at the Brecknock site (Metocean Solutions Ltd, 2019). Note tropical cyclone events were not included in this distribution. Winds at Brecknock in summer are predominantly from the WNW to SW due to the North West Monsoon (WEL, 2019).



<p>Data Information: Project: Browse Location: Brecknock [121.6500°E, 14.5300°S] Data Period: Winter (01-Apr-1979 to 30-Sep-2018) Data Source: Modelled Hindcast Record Elevation: 10 m AMSL Local Water Depth (m): 560 Data Summary: Winter Number of Records: 173751 Missing Data (%): 1.10 Calm (% < 0.50m/s): 0.48 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 14.34 m/s Mean Wind Speed: 4.71 m/s StdDev. Wind Speed: 2.01 m/s</p> 
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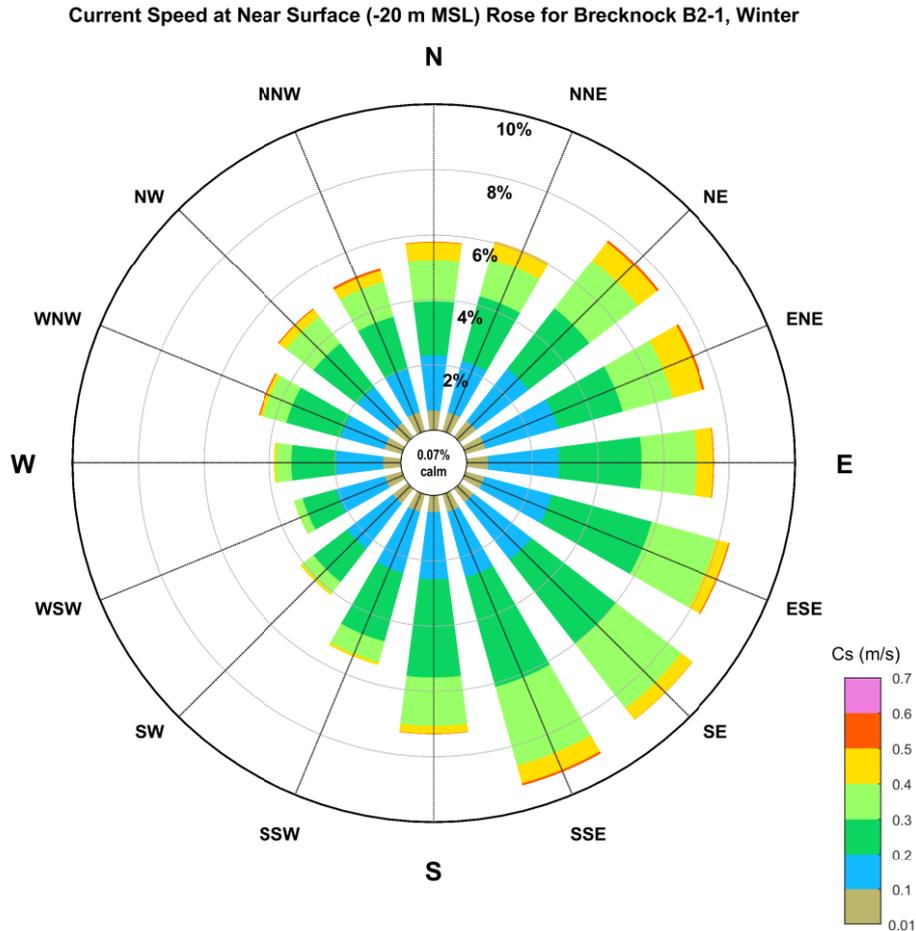
Figure 3. Winter distributions of 10-minute average wind speeds by 22.5° directional sectors at the Brecknock site (Metocean Solutions Ltd, 2019). Note tropical cyclone events were not included in this distribution. Winds at Brecknock in winter are predominantly from the E to SE due to the South East Trade Winds coming from the Australian mainland (WEL, 2019).



<p>Data Information: Project: Browse Location: Brecknock B2-1 [121.5700°E, 14.5100°S] Data Period: Summer (01-Oct-2006 to 31-Mar-2007) Data Source: CM04 Measured Record Elevation: Near Surface (-20 m MSL) Local Water Depth (m): 560 Data Summary: Summer Number of Records: 243472 Missing Data (%): 7.10 Calm (% < 0.01m/s): 0.26</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 0.63 m/s Mean Curr Spd: 0.20 m/s StdDev. Curr Spd: 0.11 m/s</p>
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Figure 4. Summer (Nov-Apr) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd. 2008).



<p>Data Information: Project: Browse Location: Brecknock B2-1 [121.5700°E, 14.5100°S] Data Period: Winter (17-Sep-2006 to 08-Sep-2007) Data Source: CM04 Measured Record Elevation: Near Surface (-20 m MSL) Local Water Depth (m): 560 Data Summary: Winter Number of Records: 246184 Missing Data (%): 1.46 Calm (% < 0.01m/s): 0.07</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 0.62 m/s Mean Curr Spd: 0.24 m/s StdDev. Curr Spd: 0.10 m/s</p>

Figure 5. Winter (May-Sep) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd. 2008).

North-west Shelf/Scarborough

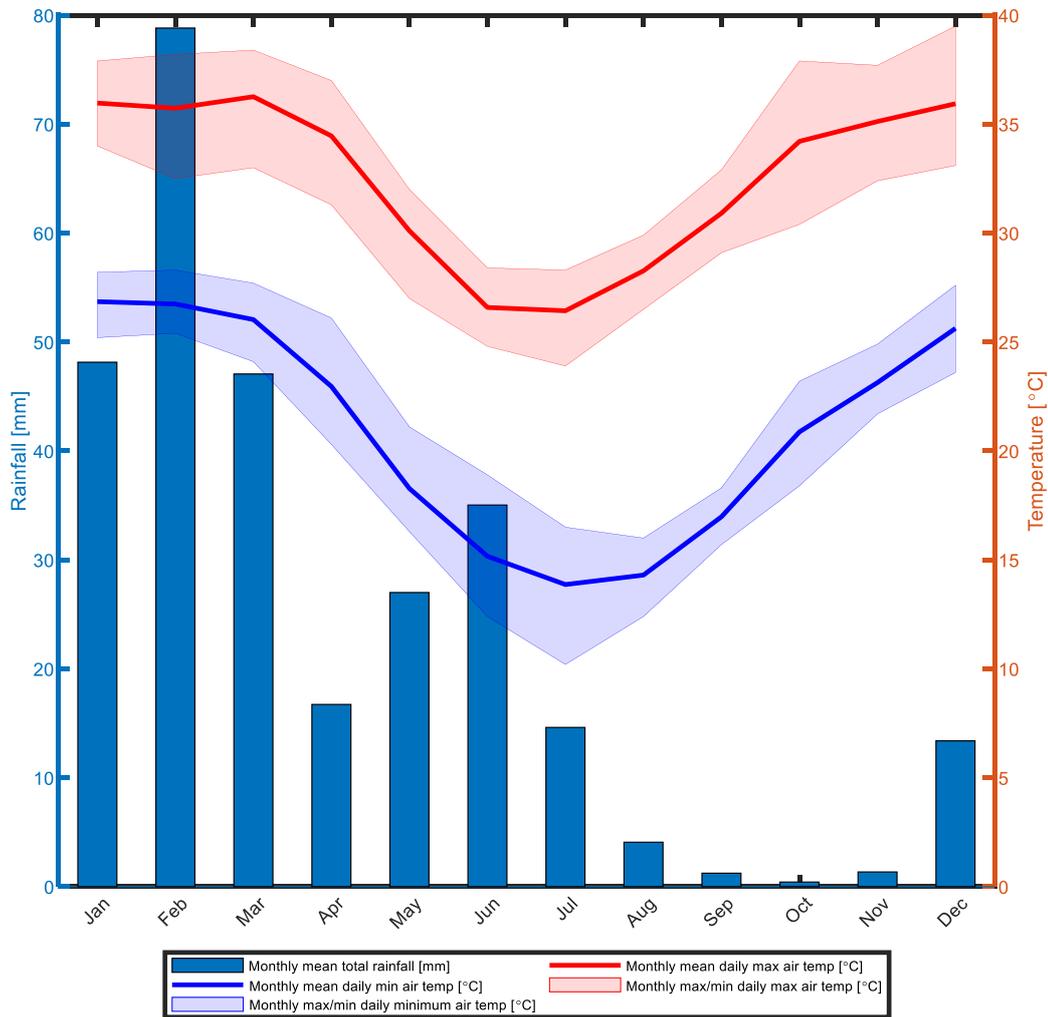
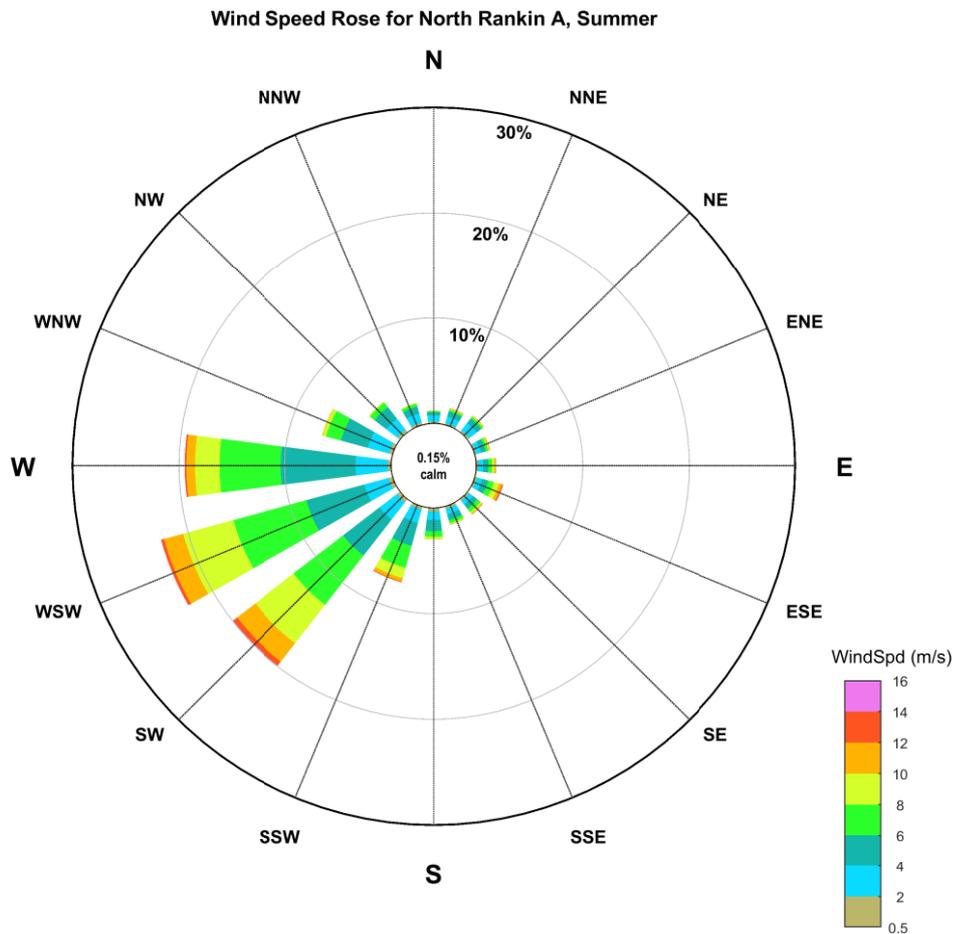
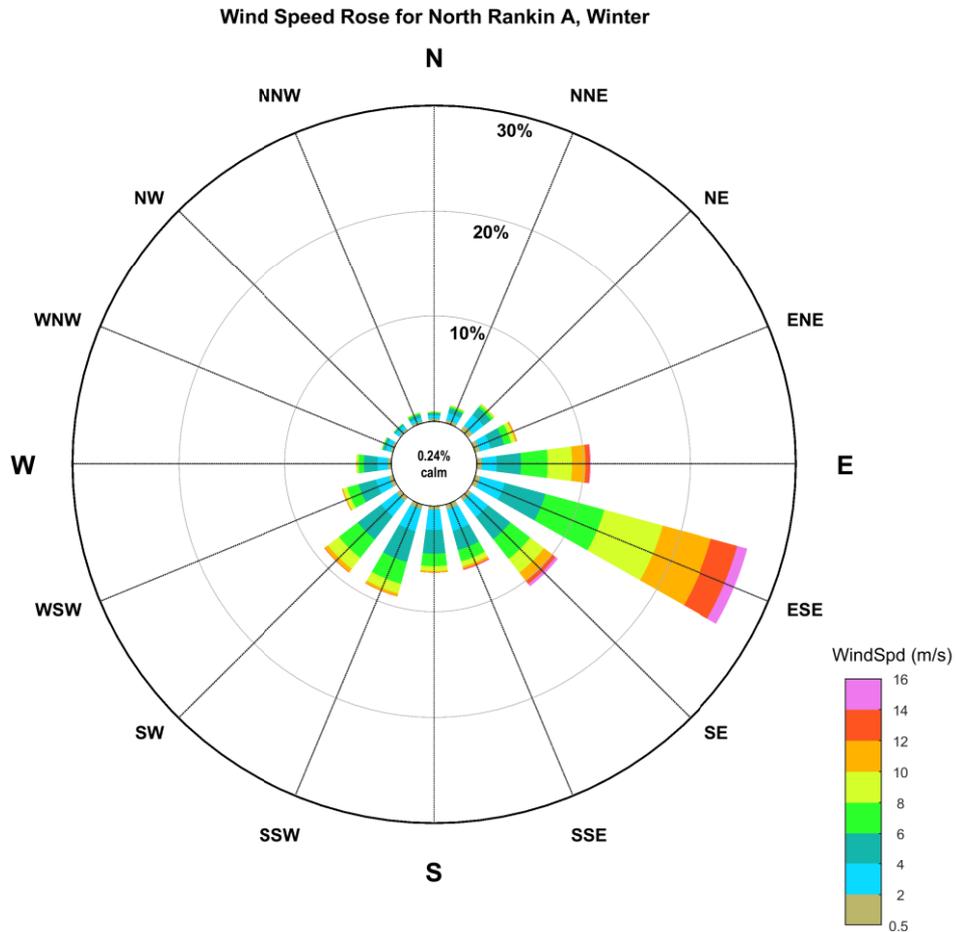


Figure 1. Monthly average total rainfall [mm] and air temperature [°C], calculated based on observations at the Karratha Aero weather station from 1972-2020 and 1993-2020 respectively (Bureau of Meteorology 2020). Bars show the monthly average total rainfall values, and thick blue and red lines denote monthly average daily minimum and maximum air temperatures, respectively. Shaded blue and red areas denote monthly recorded extremes of daily minimum and maximum air temperature, respectively.



<p>Data Information: Project: North West Shelf Location: North Rankin A [116.1200°E, 19.6100°S] Data Period: Summer (01-Oct-1995 to 30-Nov-2015) Data Source: Measured Winds Record Elevation: 10 m AMSL Local Water Depth (m): 125 Data Summary: Summer Number of Records: 674659 Missing Data (%): 7.24 Calm (% < 0.50m/s): 0.15 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 18.50 m/s Mean Wind Speed: 6.04 m/s StdDev. Wind Speed: 2.55 m/s</p> 
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Figure 2. Summer distributions of 10-minute average wind speeds by 22.5° directional sectors at the North Rankin A site (WEL, 2015). Note tropical cyclone events were not included in this distribution. Winds at North Rankin A in summer are characterised by W to SW driven by the North West Monsoon (RPS, 2016).

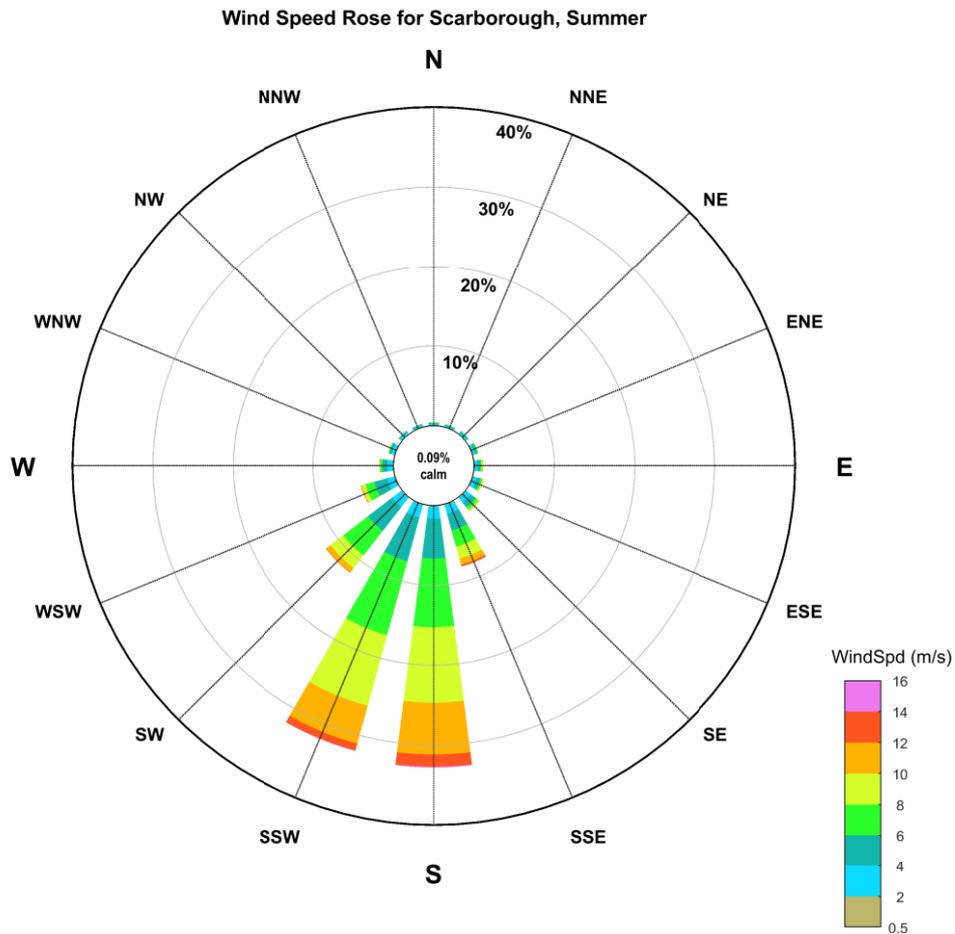


<p>Data Information: Project: North West Shelf Location: North Rankin A [116.1200°E, 19.6100°S] Data Period: Winter (22-Jun-1995 to 30-Sep-2015) Data Source: Measured Winds Record Elevation: 10 m AMSL Local Water Depth (m): 125 Data Summary: Winter Number of Records: 673213 Missing Data (%): 4.43 Calm (% < 0.50m/s): 0.24 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 24.23 m/s Mean Wind Speed: 6.25 m/s StdDev. Wind Speed: 3.16 m/s</p>
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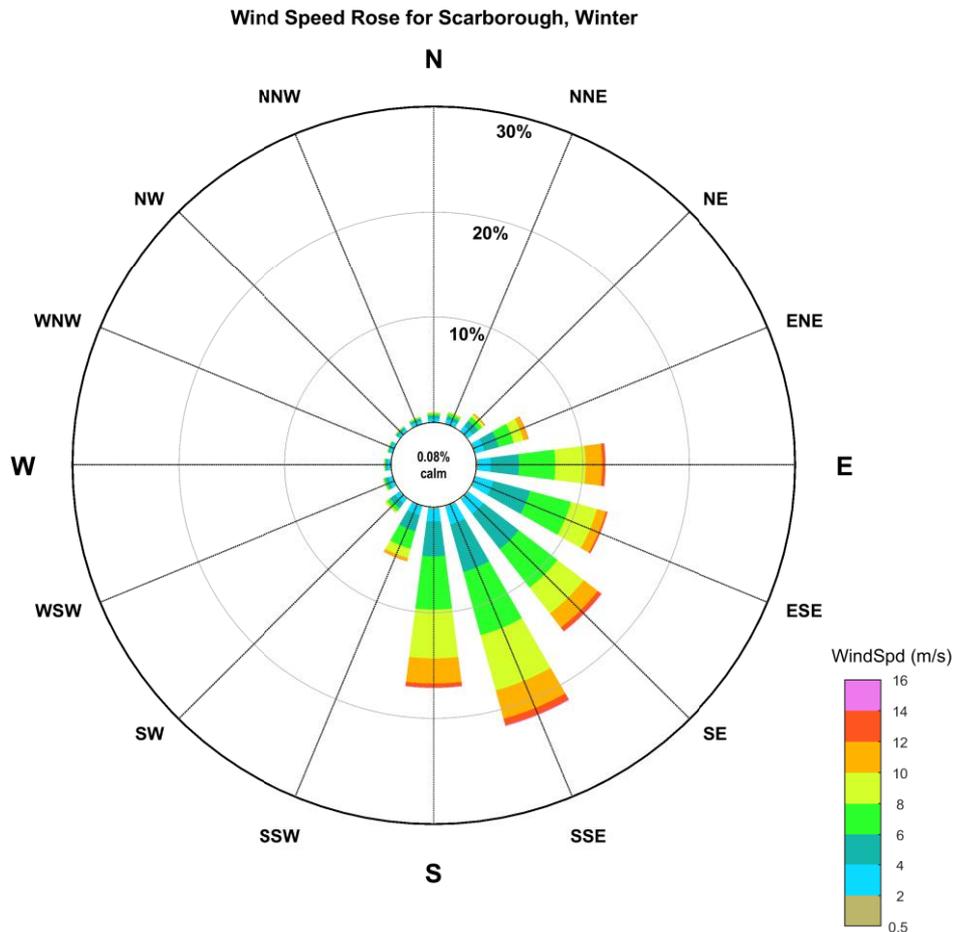
Figure 3. Winter distributions of 10-minute average wind speeds by 22.5° directional sectors at the North Rankin A site (WEL, 2015). Note tropical cyclone events were not included in this distribution. Winds at North Rankin in winter are predominantly influenced by the South East Trade Winds over Australia (RPS, 2016).

Scarborough



<p>Data Information: Project: North West Shelf Location: Scarborough [113.2000°E, 19.8800°S] Data Period: Summer (01-Jan-1979 to 01-Jan-2011) Data Source: CSFR Record Elevation: 10 m AMSL Local Water Depth (m): 950 Data Summary: Summer Number of Records: 129521 Missing Data (%): 7.46 Calm (% < 0.50m/s): 0.09 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 16.75 m/s Mean Wind Speed: 7.23 m/s StdDev. Wind Speed: 2.64 m/s</p>	
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Figure 4. Summer distributions of wind speeds (10-minute at 10m ASL) by 22.5° directional sectors at the Scarborough site (WEL, 2018). Note tropical cyclone events were not included in this distribution. Winds at Scarborough in summer are predominantly from the S to SSW due to a Pilbara Heat Low forming over the northwest coast of Western Australia [R8] SW winds are also experienced at this site due to the monsoon trough.



<p>Data Information: Project: North West Shelf Location: Scarborough [113.2000°E, 19.8800°S] Data Period: Winter (01-Apr-1979 to 30-Sep-2010) Data Source: CSFR Record Elevation: 10 m AMSL Local Water Depth (m): 950 Data Summary: Winter Number of Records: 138863 Missing Data (%): 1.20 Calm (% < 0.50m/s): 0.08 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 19.15 m/s Mean Wind Speed: 6.90 m/s StdDev. Wind Speed: 2.57 m/s</p>
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Figure 5. Winter distributions of wind speeds (10-minute at 10 m ASL) by 22.5° directional sectors at the Scarborough site (WEL, 2018). Note tropical cyclone events were not included in this distribution. Winds at Scarborough in winter are predominantly from the S to E driven by the South East Trade Winds over Australia (RPS, 2016).

North-west Shelf

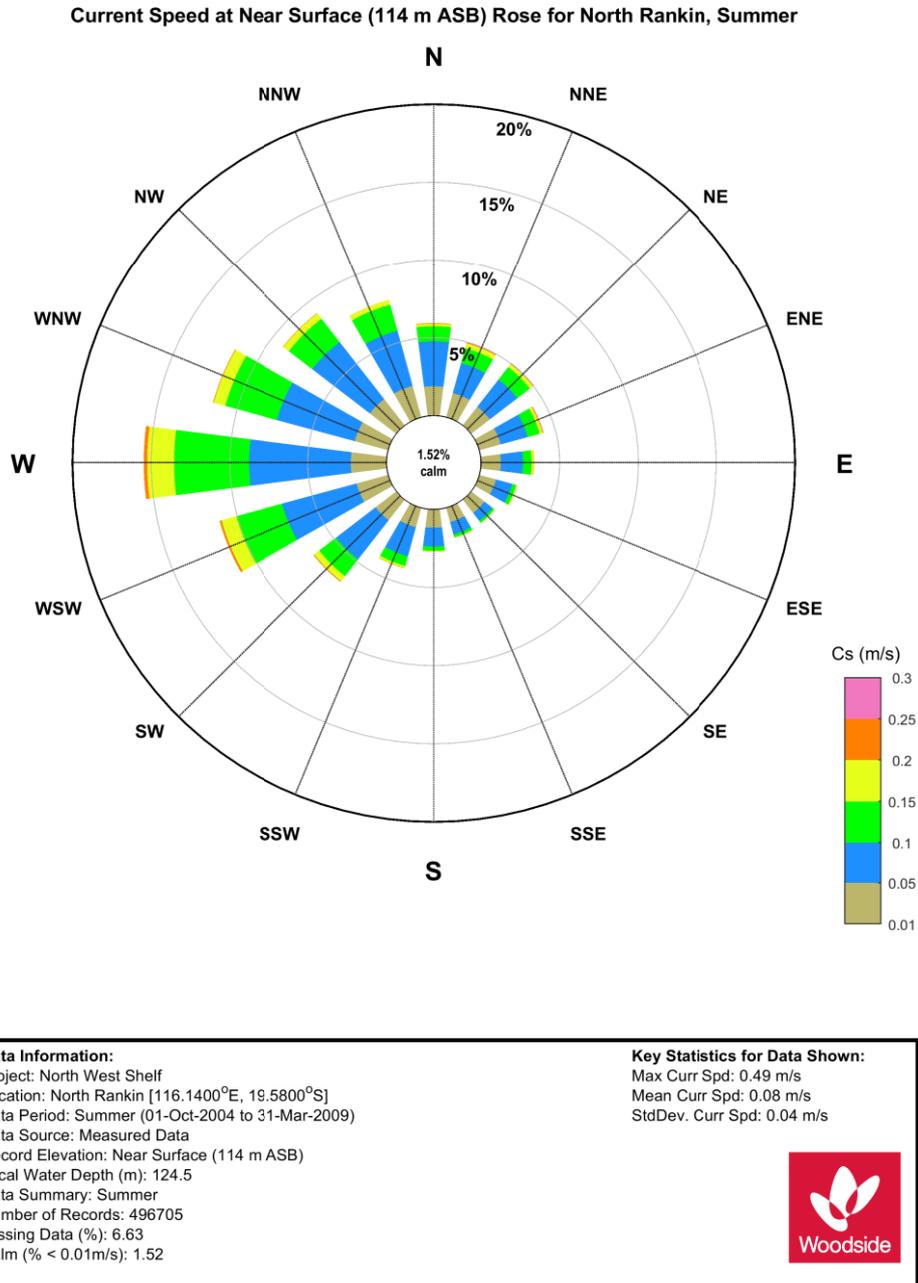
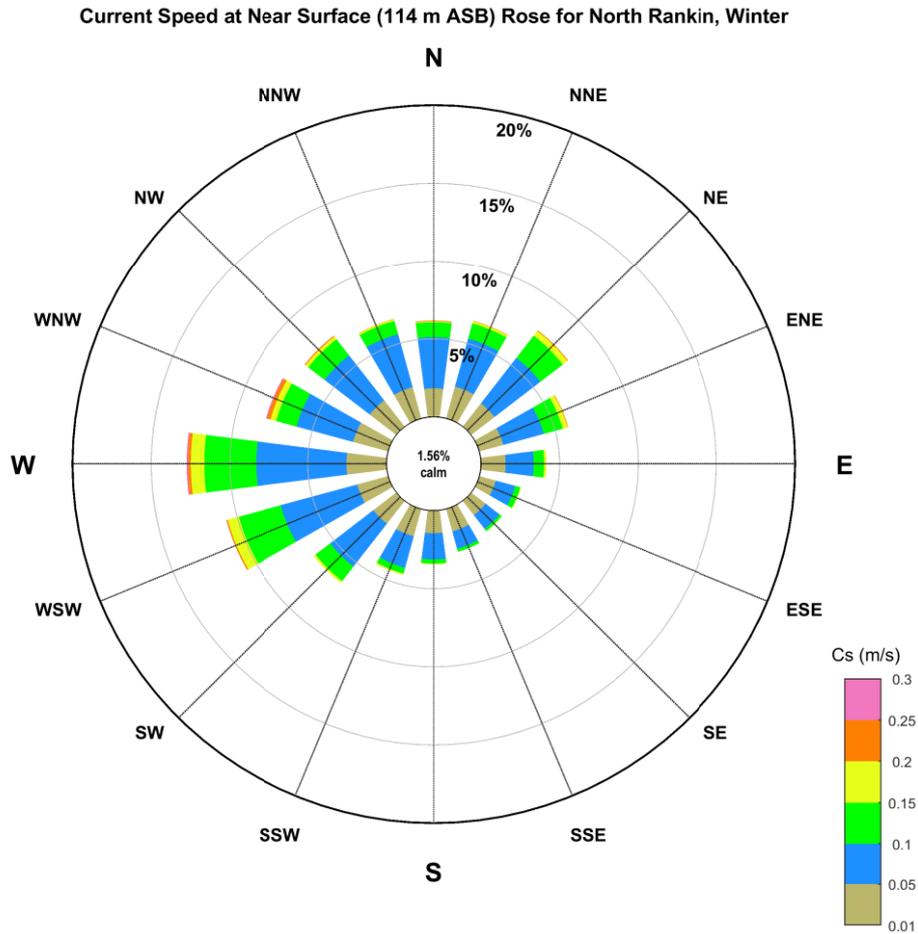


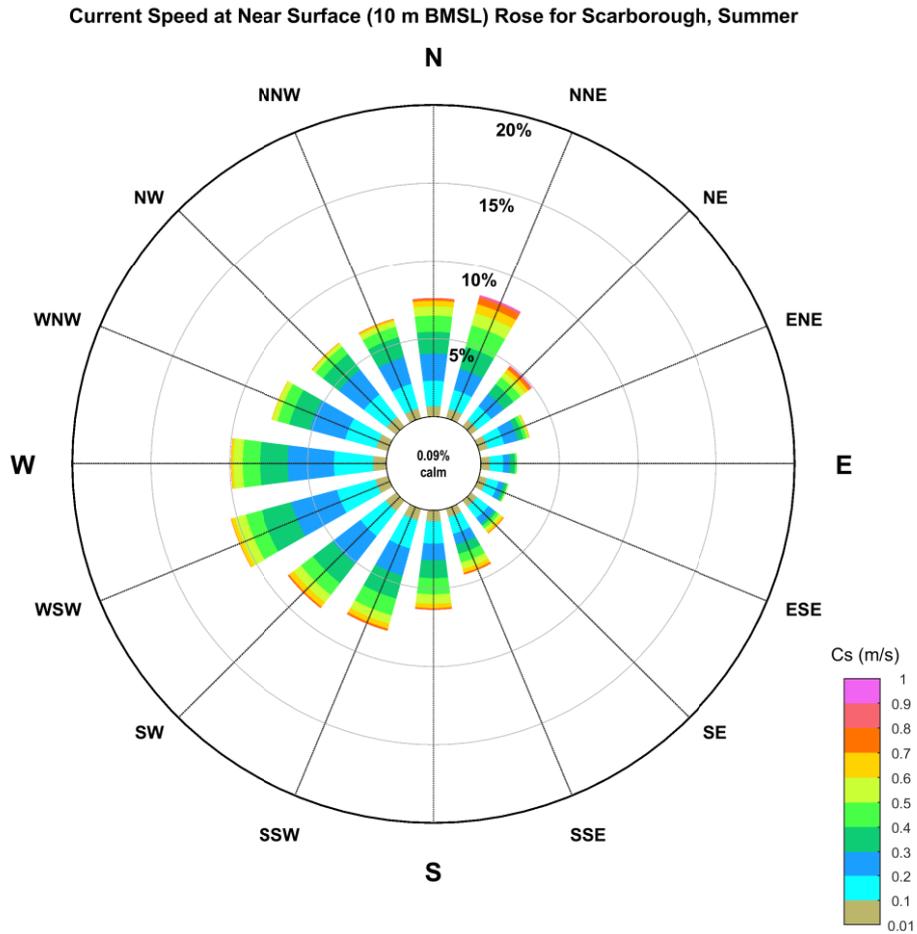
Figure 6. Summer (Nov-Apr) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (WEL, 2011).



<p>Data Information: Project: North West Shelf Location: North Rankin [116.1400°E, 19.5800°S] Data Period: Winter (21-Sep-2004 to 08-May-2009) Data Source: Measured Data Record Elevation: Near Surface (114 m ASB) Local Water Depth (m): 124.5 Data Summary: Winter Number of Records: 337723 Missing Data (%): 0.88 Calm (% < 0.01m/s): 1.56</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 0.32 m/s Mean Curr Spd: 0.07 m/s StdDev. Curr Spd: 0.04 m/s</p> <div style="text-align: right;">  </div>
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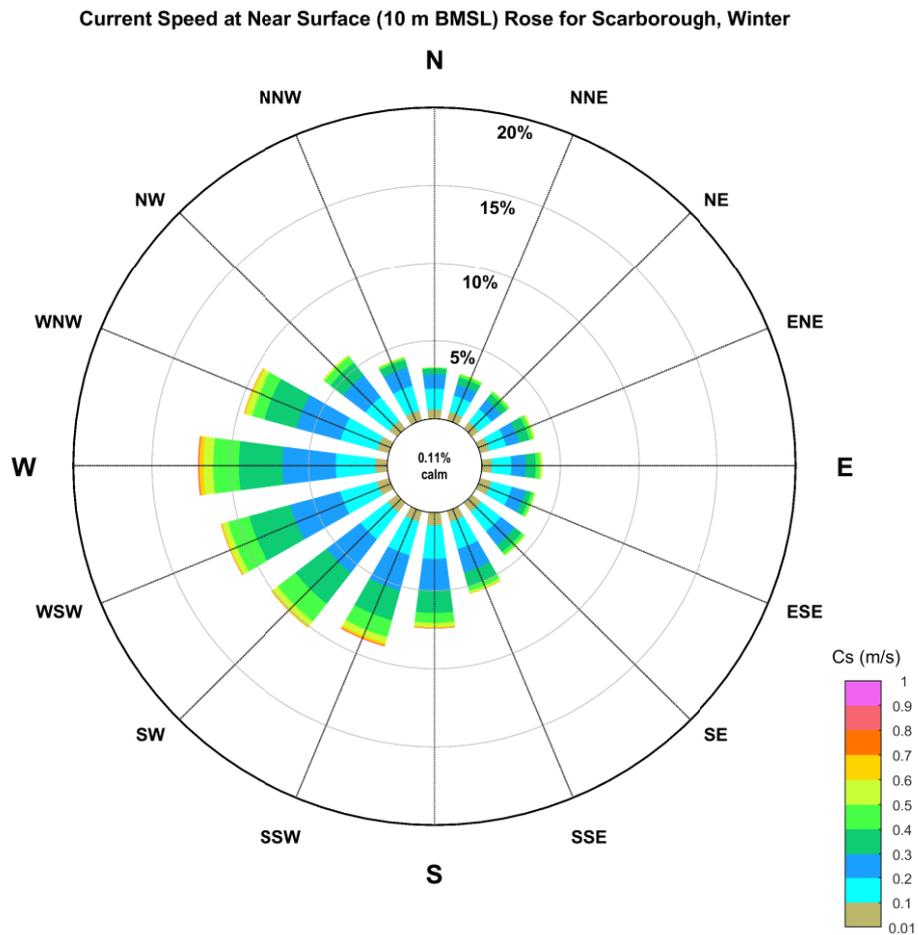
Figure 7. Winter (May-Sep) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (WEL, 2011).

Scarborough



<p>Data Information: Project: North West Shelf Location: Scarborough [113.2000°E, 19.8800°S] Data Period: Summer (15-Jan-2010 to 29-Feb-2012) Data Source: Measured Data Record Elevation: Near Surface (10 m BMSL) Local Water Depth (m): 950 Data Summary: Summer Number of Records: 43600 Missing Data (%): 7.11 Calm (% < 0.01m/s): 0.09</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 1.03 m/s Mean Curr Spd: 0.29 m/s StdDev. Curr Spd: 0.17 m/s</p>

Figure 8. Summer (Nov - April) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (WEL, 2018).



<p>Data Information: Project: North West Shelf Location: Scarborough [113.2000°E, 19.8800°S] Data Period: Winter (01-Apr-2010 to 30-Sep-2011) Data Source: Measured Data Record Elevation: Near Surface (10 m BMSL) Local Water Depth (m): 950 Data Summary: Winter Number of Records: 49345 Missing Data (%): 3.01 Calm (% < 0.01m/s): 0.11</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 1.03 m/s Mean Curr Spd: 0.25 m/s StdDev. Curr Spd: 0.13 m/s</p> <div style="text-align: right;">  </div>
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Figure 9. Winter (May-Sep) near surface combined frequency of 1-min mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (WEL, 2018).

North-west Cape

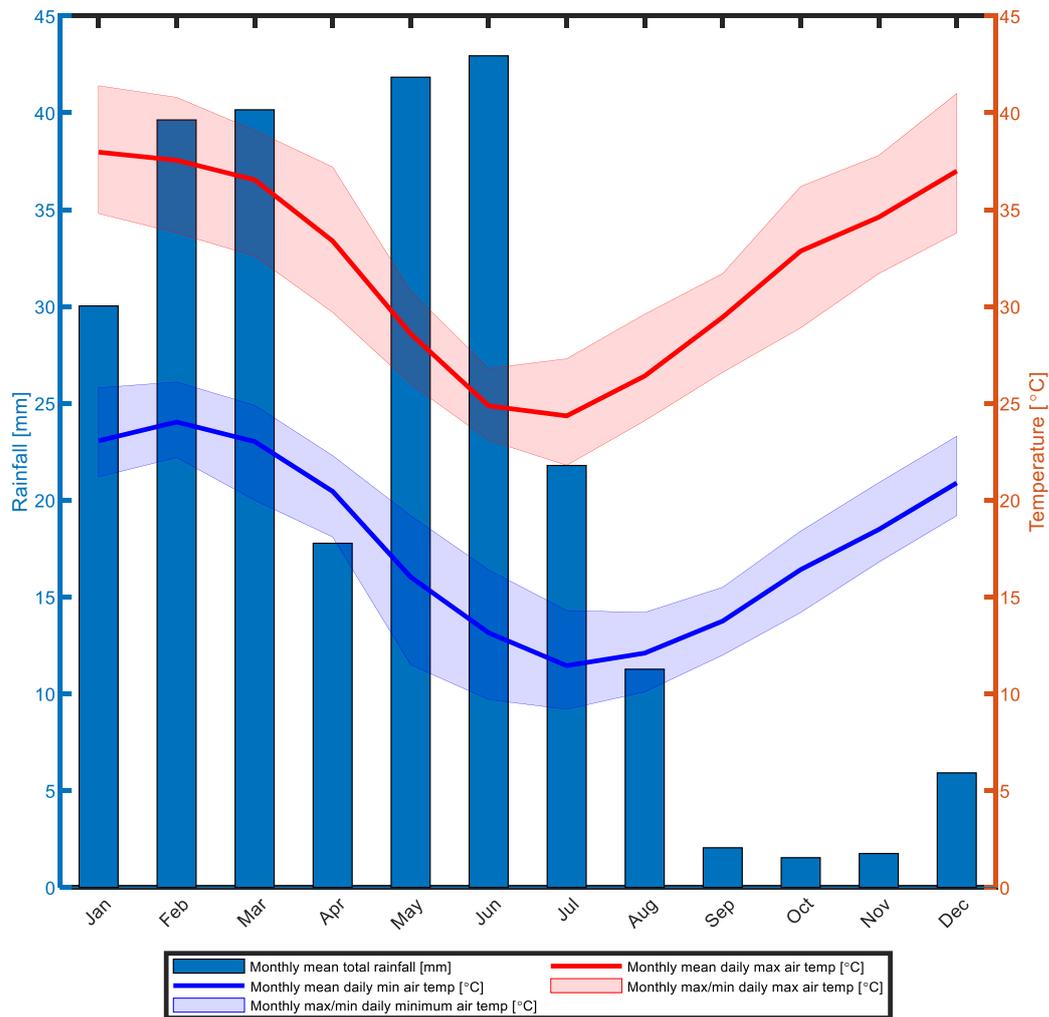
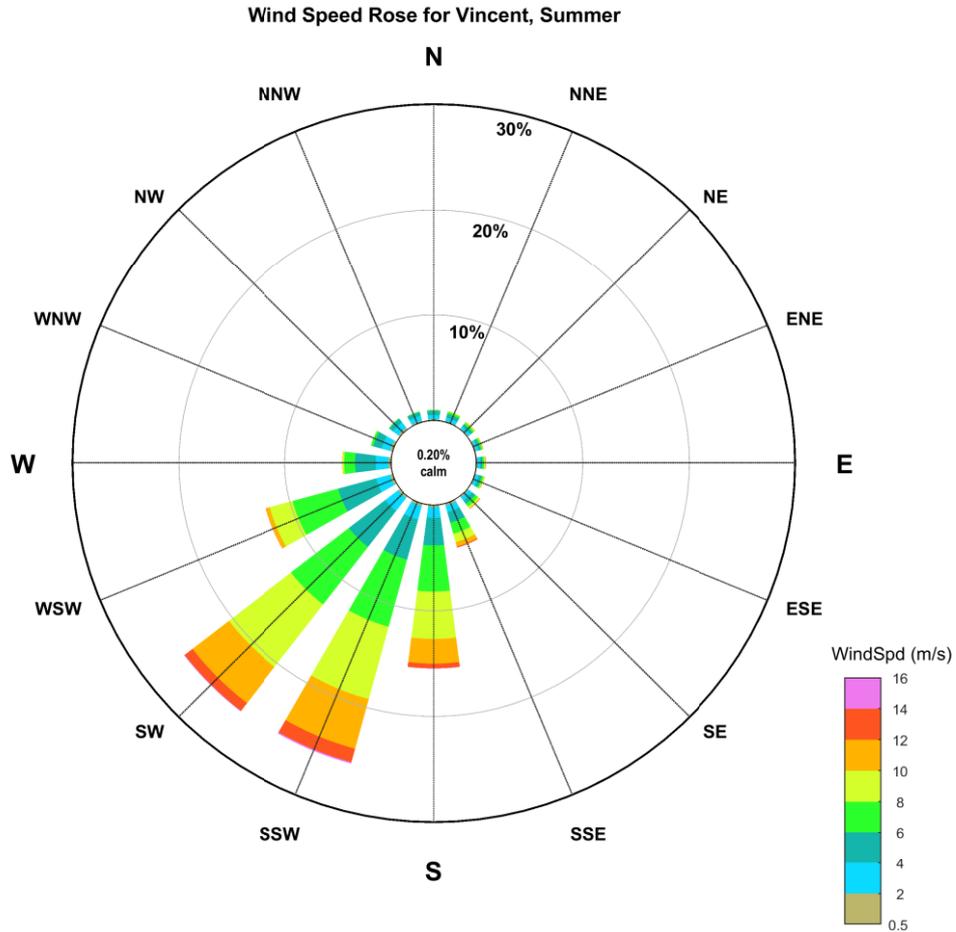


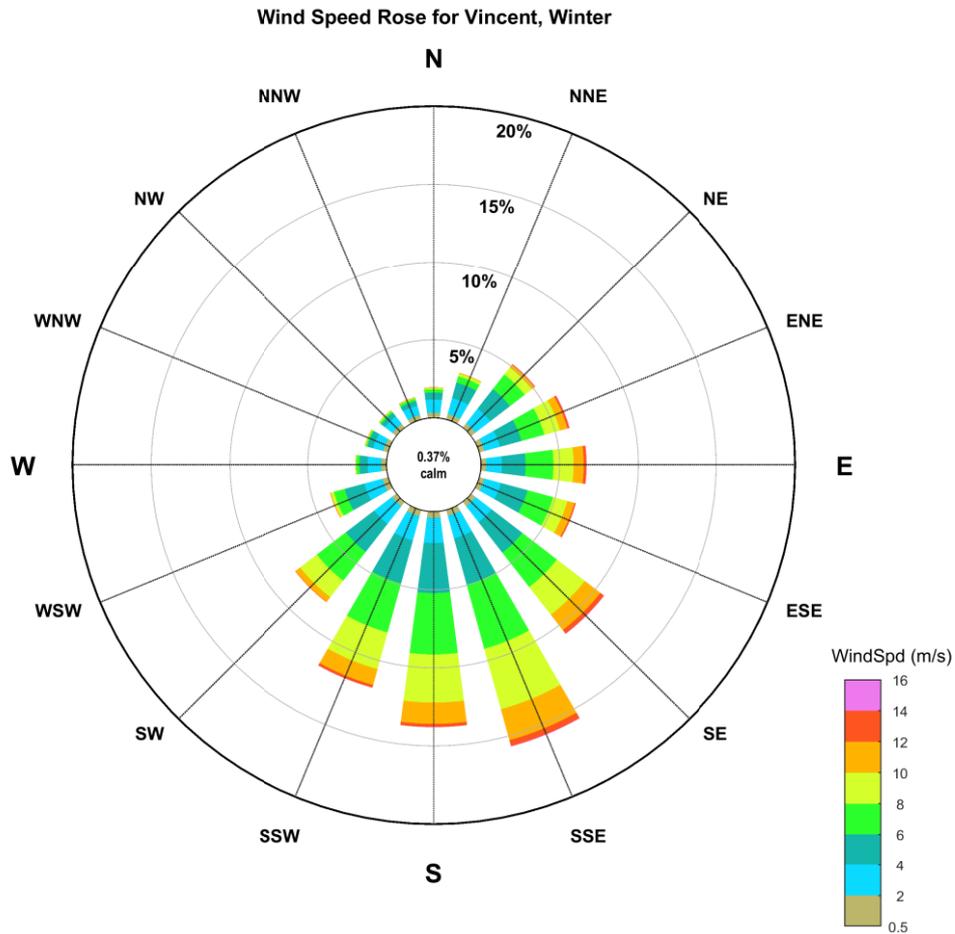
Figure 1. Monthly average total rainfall [mm] and air temperature [°C], calculated based on observations at the Learmonth Airport weather station from 1945-2020 and 1975-2020 respectively (Bureau of Meteorology 2020). Bars show the monthly average total rainfall values, and thick blue and red lines denote monthly average daily minimum and maximum air temperatures, respectively. Shaded blue and red areas denote monthly recorded extremes of daily minimum and maximum air temperature, respectively.



<p>Data Information: Project: North West Cape Location: Vincent [114.0600°E, 21.4400°S] Data Period: Summer (01-Jan-1979 to 01-Jan-2019) Data Source: Modelled Hindcast Record Elevation: 10 m AMSL Local Water Depth (m): 350 Data Summary: Summer Number of Records: 159379 Missing Data (%): 8.91 Calm (% < 0.50m/s): 0.20 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 18.86 m/s Mean Wind Speed: 7.10 m/s StdDev. Wind Speed: 2.75 m/s</p>
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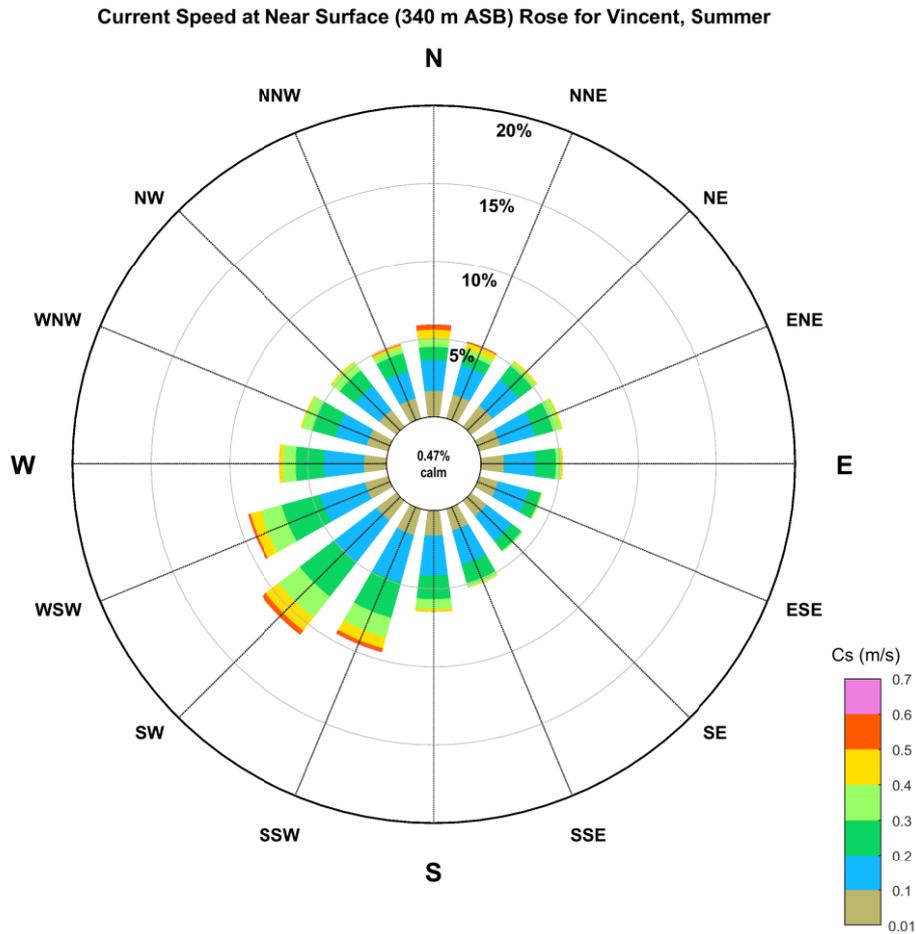


Figure 2. Summer distributions of wind speeds (10-minute at 10 m ASL) by 22.5° directional sectors at the Vincent site (Vincent Metocean). Note tropical cyclone events were not included in this distribution. Winds at Vincent in summer are predominantly from the SW to SSW in summer due to the presence of the Pilbara Heat Low (MetOcean Engineers, 2005).



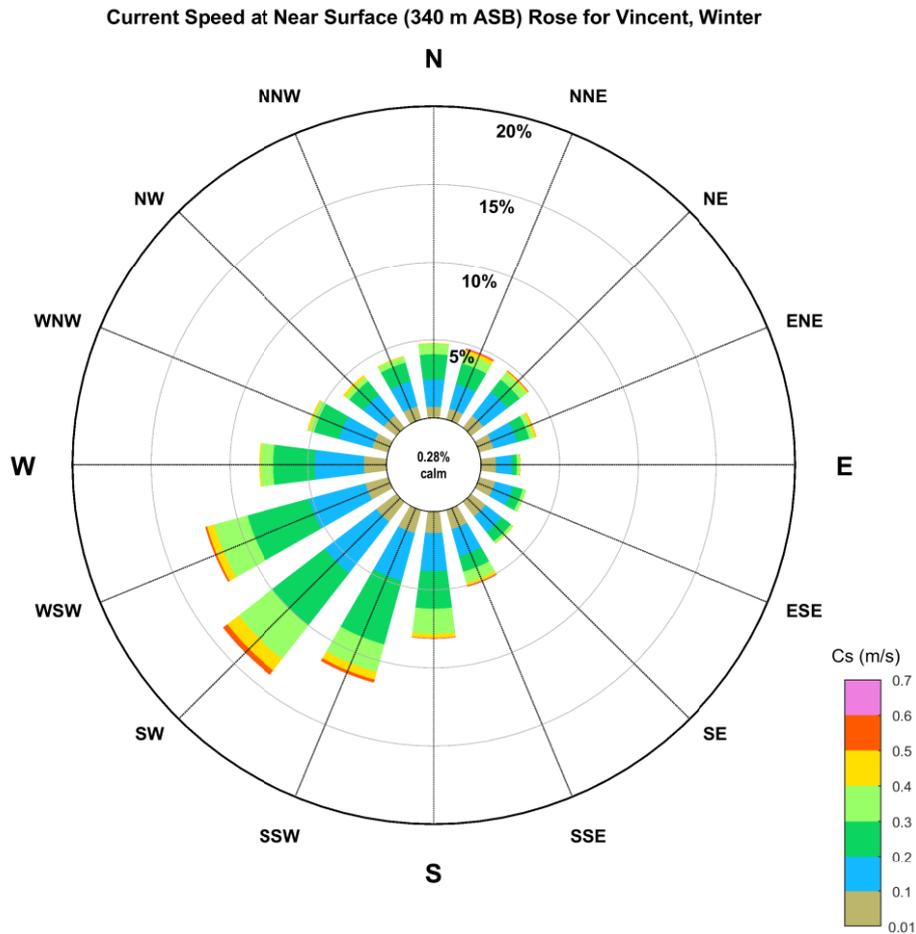
<p>Data Information: Project: North West Cape Location: Vincent [114.0600°E, 21.4400°S] Data Period: Winter (01-Apr-1979 to 30-Sep-2018) Data Source: Modelled Hindcast Record Elevation: 10 m AMSL Local Water Depth (m): 350 Data Summary: Winter Number of Records: 173626 Missing Data (%): 1.17 Calm (% < 0.50m/s): 0.37 Measurement Format: 10-minute avg.</p>	<p>Key Statistics for Data Shown: Max Wind Speed: 19.39 m/s Mean Wind Speed: 6.23 m/s StdDev. Wind Speed: 2.78 m/s</p> 
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Figure 3. Winter distributions of wind speeds (10-minute at 10 m ASL) 22.5° directional sectors at the Vincent site (Vincent Metocean). Note tropical cyclone events were not included in this distribution. In winter, winds are predominantly from the S to SE, associated with the South East Trades. Easterly gales are experienced at the Vincent location due to high pressure systems generating from the Great Australian Bight area to the site (MetOcean Engineers, 2005).



<p>Data Information: Project: North West Cape Location: Vincent [114.0600°E, 21.4400°S] Data Period: Summer (21-Nov-2000 to 13-Dec-2001) Data Source: Measured Data Record Elevation: Near Surface (340 m ASB) Local Water Depth (m): 350 Data Summary: Summer Number of Records: 144668 Missing Data (%): 1.59 Calm (% < 0.01m/s): 0.47</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 0.75 m/s Mean Curr Spd: 0.19 m/s StdDev. Curr Spd: 0.11 m/s</p> <div style="text-align: right; margin-top: 10px;">  </div>
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Figure 4. Summer (May – Sep) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (WEL, 2016).



<p>Data Information: Project: North West Cape Location: Vincent [114.0600°E, 21.4400°S] Data Period: Winter (01-Apr-2001 to 30-Sep-2001) Data Source: Measured Data Record Elevation: Near Surface (340 m ASB) Local Water Depth (m): 350 Data Summary: Winter Number of Records: 126313 Missing Data (%): 4.13 Calm (% < 0.01m/s): 0.28</p>	<p>Key Statistics for Data Shown: Max Curr Spd: 0.64 m/s Mean Curr Spd: 0.20 m/s StdDev. Curr Spd: 0.11 m/s</p>
	

Figure 5. Winter (Nov – Apr) near surface combined frequency of 1-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (WEL, 2016).

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- WEL 2019. "Browse Development – Metocean Design Basis" CRN: JJ0013ST1400274448.