



# Angel Subsea Infrastructure Removal Environment Plan

Projects Australia – Decommissioning

April 2025

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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), proposes to undertake the following activities within Production licence WA-3-L:

- removal of three 14-inch rigid flowlines between the Angel platform and the AP2, AP3 and AP4 wells. The flowlines are carbon steel (with internal stainless-steel liner) and coated with concrete to provide stabilisation on the seabed.
- removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP2, AP3 and AP4 wells. The umbilicals are plastic coated and contain electrical and hydraulic cores.
- removal of ancillary equipment, such as umbilical termination assemblies (UTAs) and their associated steel foundations, rigid tie-in spool pieces, hydraulic flying leads (HFLs), electrical flying leads (EFLs) and stabilisation materials, such as grout bags, sandbags and concrete mattresses.
- installation of permanent plugs / caps to preserve fluids within flowlines / umbilicals as close as practicable to the Angel platform.
- removal of three wellheads (AP2, AP3 and AP4) using a multi-purpose construction vessel

These activities will hereafter be collectively referred to as the Petroleum Activity and form the scope of this EP (EP). A 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).

This EP meets the commitment made in Section 3.3 and further detailed in Section 7.3.4 of the Angel Facility Operations EP Rev 17, accepted 25 June 2024, to develop an EP covering removal of redundant subsea infrastructure in the Angel field. Subsea infrastructure removal activities are currently planned to commence by 1 December 2026 subject to approvals and vessel availability. Subsea decommissioning activities are currently scheduled for approximately 3 months between around Q3 2026 and Q1 2027. The timing and duration of the activities are subject to vessel availability, weather, and other unforeseen circumstances.

This EP is not intended to be the final decommissioning EP for Woodside's property in WA-3-L, as such Section 270 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act) and title surrender requirements are not included in this EP. A future decommissioning EP will be developed to address remaining infrastructure in the Angel field post cessation of production. Any infrastructure remaining following the end of this EP will be included in the relevant field inventory and managed under the Angel Facility Operations EP.

## 1.2 Purpose of the EP

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 Activity 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 Activity is carried out in a manner consistent with the principles of ecologically sustainable development (ESD) (as defined in Section 3A of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* [EPBC Act]).

## 1.3 EP Summary

Table 1-1 summarises the content of this EP, as required by Regulation 35(6).

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**Table 1-1: EP summary**

EP summary material requirement	Relevant section of this EP containing EP summary material
The location of the activity	Section 3.3
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 7.5
Response arrangements in the oil pollution emergency plan	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 1.5.1

## 1.4 Structure of the EP

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

**Table 1-2: EP process phases, applicable Environment Regulations and relevant section of EP**

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: <ul style="list-style-type: none"> <li>Environmental assessment</li> </ul> Regulation 22: <ul style="list-style-type: none"> <li>Implementation strategy for the EP</li> </ul> Regulation 24: <ul style="list-style-type: none"> <li>Other information in the EP</li> </ul>	The principle of 'nature and scale' is applicable 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 ALARP  Regulation 34(c): Demonstrates that the environmental impacts and risks of the activity will be of an acceptable level	Regulations 21(1)–21(7): <ul style="list-style-type: none"> <li>21(1) Description of the activity</li> <li>21(2) and (3) Description of the environment</li> <li>21(4) Requirements</li> <li>21(5) and (6) Evaluation of environmental impacts and risks</li> <li>21(7) Environmental Performance Outcomes and standards</li> </ul> Regulations 24(a)–24(c): <ul style="list-style-type: none"> <li>A statement of the titleholder's corporate environmental policy</li> <li>A report on all consultations between the titleholder and any relevant person</li> </ul>	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(d): Provides for appropriate Environmental Performance Outcomes,	Regulation 21(7): <ul style="list-style-type: none"> <li>Environmental Performance Outcomes and standards</li> </ul>	Environmental Performance Outcomes (EPOs) Environmental performance standards (EPSs) Measurement criteria (MCs)	Section 6

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Criteria for acceptance	Content requirements/relevant regulations	Elements	Section of EP
environmental performance standards and measurement criteria			
Regulation 34(e): Includes an appropriate implementation strategy and monitoring, recording and reporting arrangements	Regulation 22: <ul style="list-style-type: none"> <li>Implementation strategy for the EP</li> </ul>	Implementation strategy, including: <ul style="list-style-type: none"> <li>Environmental Management System (EMS)</li> <li>Performance monitoring</li> <li>Oil Pollution Emergency Plan (OPEP – per Appendix G) and operational and scientific monitoring</li> <li>Ongoing consultation</li> </ul>	Section 7
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.	Regulations 21(1)–21(3): <ul style="list-style-type: none"> <li>21(1) Description of the activity</li> <li>21(2) Description of the environment</li> <li>21(3) Without limiting Regulation 21(2)(b), relevant values and sensitivities may include any of the following: <ul style="list-style-type: none"> <li>(a) the world heritage values of a declared World Heritage property within the meaning of the EPBC Act;</li> <li>(b) the national heritage values of a National Heritage place within the meaning of that Act;</li> <li>(c) the ecological character of a declared Ramsar wetland within the meaning of that Act;</li> <li>(d) the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act;</li> <li>(e) the presence of a listed migratory species within the meaning of that Act;</li> <li>(f) any values and sensitivities that exist in, or in relation to, part or all of: <ul style="list-style-type: none"> <li>(i) a Commonwealth marine area within the meaning of that Act; or</li> <li>(ii) Commonwealth land within the meaning of that Act.</li> </ul> </li> </ul> </li> </ul>	No activity, or part of the activity, undertaken in any part of a declared World Heritage property	Section 3 Section 4 Section 6
Regulation 34(g): (i) the titleholder has carried out the consultations	Regulation 25: <ul style="list-style-type: none"> <li>Consultation with relevant authorities, persons and organisations, etc.</li> </ul> Regulation 24(b):	Consultation undertaken in the preparation of this EP.	Section 5

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Criteria for acceptance	Content requirements/relevant regulations	Elements	Section of EP
required by Regulation 25 (ii) the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate	<ul style="list-style-type: none"> <li>A report on all consultations between the titleholder and any relevant person</li> </ul>		
Regulation 34(h): Complies with the Act and the Regulations	<p>Regulation 21(4)(a):</p> <ul style="list-style-type: none"> <li>Describe the requirements, including legislative requirements, that apply to activity and are relevant to the environmental management of the activity</li> </ul> <p>Regulation 23:</p> <ul style="list-style-type: none"> <li>Details of the Titleholder and liaison person</li> </ul> <p>Regulation 24(a):</p> <ul style="list-style-type: none"> <li>A statement of the titleholder's corporate environmental policy</li> </ul> <p>Regulation 24(c):</p> <ul style="list-style-type: none"> <li>Details of all reportable incidents in relation to the proposed activity</li> </ul>	All contents of the EP must comply with the OPGGS Act and the Environment Regulations	Section 1.5.1 Section 7.5

Table 1-3 outlines how the relevant decommissioning requirements of the OPGGS Act have been addressed in this EP. As WA-3-L also includes infrastructure covered under the accepted Angel Facility Operations EP, this EP is intended to address requirements only in relation to the infrastructure covered in Section 3.

**Table 1-3: Relevant decommissioning requirements of the Offshore Petroleum and Greenhouse Gas Storage Act 2006**

Section number	Relevant requirement	Relevant section of the EP
Section 270(c)(i) and Section 270(c)(ii)	<p>The Joint Authority may consent to the surrender sought by the application only if the registered holder of the permit, lease or licence:</p> <p>(c) has:</p> <ul style="list-style-type: none"> <li>i) to the satisfaction of NOPSEMA, removed or caused to be removed from the surrender area (defined by subsection (7)) all property brought into the surrender area by any person engaged or concerned in the operations authorised by the permit, lease or licence; or</li> <li>ii) made arrangements that are satisfactory to NOPSEMA in relation to that property; and...</li> </ul>	Not relevant to this EP. Section 270 and title relinquishment requirements will be addressed in the final decommissioning EP for the operating Angel field
Section 572(2)	<p>A titleholder must maintain in good condition and repair all structures that are, and all equipment and other property that is:</p> <ul style="list-style-type: none"> <li>(a) in the title area; and</li> <li>(b) used in connection with the operations authorised by the permit, lease, licence or authority.</li> </ul>	IMR activities are outlined in Section 3 of the Angel Operations EP
Section 572(3)	<p>A titleholder must remove from the title area all structures that are, and all equipment and other property that is, neither used nor to be used in connection with the operations:</p>	Planning for decommissioning is outlined in Section 7 of

Section number	Relevant requirement	Relevant section of the EP
	(a) in the title area; and (b) used in connection with the operations authorised by the permit, lease, licence or authority.	the Angel Operations EP

## 1.5 Description of the Titleholder

Woodside is the Titleholder for this activity, on behalf of the North West Shelf Joint Venture comprising:

- Woodside Energy Ltd
- BP Developments Australia Pty. Ltd
- Chevron Australia Pty Ltd
- Shell Australia Pty Ltd
- Woodside Energy (North West Shelf) Pty Ltd
- Japan Australia LNG (MIMI) Pty
- CNOOC NWS Private Limited.

### 1.5.1 Details of Titleholder and nominated liaison person

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

#### 1.5.1.1 Titleholder

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

#### 1.5.1.2 Nominated liaison person

Nicolas Wirtz  
Corporate Affairs Manager – Environmental Approvals  
11 Mount Street  
Perth, Western Australia  
Telephone: 08 9348 4000  
Email: [feedback@woodside.com](mailto:feedback@woodside.com)

### 1.5.2 Arrangements for notifying change

If the titleholder, titleholder's nominated liaison person, or the contact details for either change, then NOPSEMA will be notified in writing within 2 weeks or as soon as practicable.

## 1.6 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 these elements:

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- **Compass 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.

The WMS is organised within a business process hierarchy based on 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'. 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.

### 1.6.1 Environment and Biodiversity Policy

In accordance with Regulation 24(a) of the Environment Regulations, Woodside's Environment and Biodiversity Policy is provided in Appendix A of this EP.

Please note that the Environment and Biodiversity Policy is reviewed regularly and is updated as required. The Environment and Biodiversity Policy is made available on our website: <https://www.woodside.com/who-we-are/corporate-governance-and-policies>. This EP will be implemented in accordance with the current Environment and Biodiversity Policy as shown on our website.

## 1.7 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 relevant to managing the risks and impacts of the Petroleum Activity are detailed in Appendix B and summarised in the following paragraphs.

### 1.7.1 Offshore Petroleum and Greenhouse Gas Storage Act 2006

The OPGGS Act legislates offshore petroleum activities beyond 3 nautical miles (nm) of the mainland (and islands) to the outer extent of the Australian Exclusive Economic Zone at 200 nm.

Under the OPGGS Act, the Environment Regulations apply to petroleum activities in Commonwealth Waters and are administered by NOPSEMA. The objective of the Environment Regulations is to ensure petroleum activities are performed in a manner:

- consistent with the principles of ESD
- by which the environmental impacts and risks of the activity will be reduced to ALARP
- by which the environmental impacts and risks of the activity will be of an acceptable level.

This EP has been prepared in accordance with the relevant requirements of the OPGGS Act and the Environment Regulations.

### 1.7.2 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act includes the objective to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places in Australia. These are defined under Part 3 of the EPBC Act as 'matters of national environmental significance' (MNES). The EPBC Act sets a regime which aims to ensure that actions taken are on (or impacting upon) Commonwealth land or waters are consistent with the principles of ESD.

In relation to offshore petroleum activities in Commonwealth waters the requirements of the EPBC Act are administered by NOPSEMA. The Streamlining Offshore Petroleum Environmental Approvals Program Report (NOPSEMA 2014) requires any offshore petroleum activities, authorised by the OPGGS Act, to be conducted in accordance with an accepted EP whereby the definition of 'environment' covers all matters protected under Part 3 of the EPBC Act.

Development of the Angel gas and condensate field, which this EP has been developed under, was referred for assessment under the EPBC Act (EPBC 2004/1805) and the level of assessment was set as a controlled action. The action was approved 27 June 2005 with conditions. Conditions considered relevant to the scope of this EP are provided in Table 1-4. The expiry date of the approval is currently 1 June 2030, with a notification of extension of period of effect of approval received 12 April 2018.

**Table 1-4: Conditions from Angel gas and condensate field (EPBC 2004/1805) relevant to the Petroleum Activity**

Condition number	Condition	Relevant section of EP
2	The person taking the action must submit a decommissioning plan (or plans) for approval by the Minister prior to decommissioning of the development. The plan (or plans) must consider the complete removal of all structures and components above the sea floor. The approved plan (or plans) must be implemented.	Planning for decommissioning is outlined in Section 7.3 of the Angel Operations EP
8	A plan required by Conditions 1, 2 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: a) Was submitted to NOPSEMA after 27 February 2014; and b) Either: – i) Is in force under the OPGGS Environment Regulations; or – ii) Has ended in accordance with Regulation 46 of the OPGGS Environment Regulations.	The implementation of the Angel Operations EP is considered to meet the requirements of this condition
8B	Where an environment plan, which includes measures specified in the conditions referred to in Conditions 8 and 8A 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 the Angel Operations EP is considered to meet the requirements of this condition

### 1.7.3 Recovery plans and threat abatement plans

Under Section 139(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 Section 268 of the EPBC Act:

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

In respect to offshore petroleum activities in Commonwealth waters, these requirements are implemented by NOPSEMA. Specifically:

- NOPSEMA will not accept an EP that proposes activities that will result in unacceptable impacts to a listed threatened species or ecological community.
- NOPSEMA will not accept an EP that is inconsistent with a recovery plan or threat abatement plan for a listed threatened species or ecological community.
- NOPSEMA will have regard to any approved conservation advice in relation to a threatened species or ecological community before accepting an EP.

An assessment of the Petroleum Activity against all relevant recovery plans and threat abatement plans is contained in Section 6.9.



### 1.7.4 Australian Marine Parks

The EMBA by the Petroleum Activity does not overlap any AMPs.

### 1.7.5 World Heritage Properties

Australian World Heritage Properties (WHP) are listed as MNES under the EPBC Act and are required to be assessed accordingly in EPs.

Schedule 5 of the EPBC Act establishes the Australian World Heritage management principles, which are designed to ensure that WHPs within Australia are managed in a way that maintains their values. Table 1-5 outlines the principles that are relevant to assessing impacts from the Petroleum Activity on WHPs within the EMBA, which are identified in Section 4.

**Table 1-5: Relevant management principles under Schedule 5—Australian World Heritage management principles of the EPBC Act.**

Number	Principle	Relevant section of the EP
3	<b>Environmental impact assessment and approval</b> 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).	3.01: Assessment of significant impact on World Heritage values is included in Section 6. Principles are met by the submitted EP
	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.	3.02: Assessment of significant impact on World Heritage values is included in Section 6. Principles are met by the submitted EP.
	3.03 The assessment process should: (a) identify the World Heritage values of the property that are likely to be affected by the action; and (b) examine how the World Heritage values of the property might be affected; and (c) provide for adequate opportunity for public consultation.	3.03 (a) and (b): World Heritage values are identified in Section 6 and considered in the assessment of impacts and risks for the Petroleum Activity in Section 6. 3.03 (c): Relevant stakeholder consultation and feedback received in relation to impacts and risks to the World Heritage Properties are outlined in Section 6.
	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.	3.04: Principles are considered to be met by the acceptance of this EP.
	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.	3.05: Principles are considered to be met by the acceptance of this EP.
	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.	3.06: Principles are considered to be met by the acceptance of this EP.

*Note: 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.*

## 1.8 Decommissioning Options Analysis

Planning for the future decommissioning of the Angel field is documented in Section 7 of the Angel Operations EP. No additional information on decommissioning options has been provided in this EP.

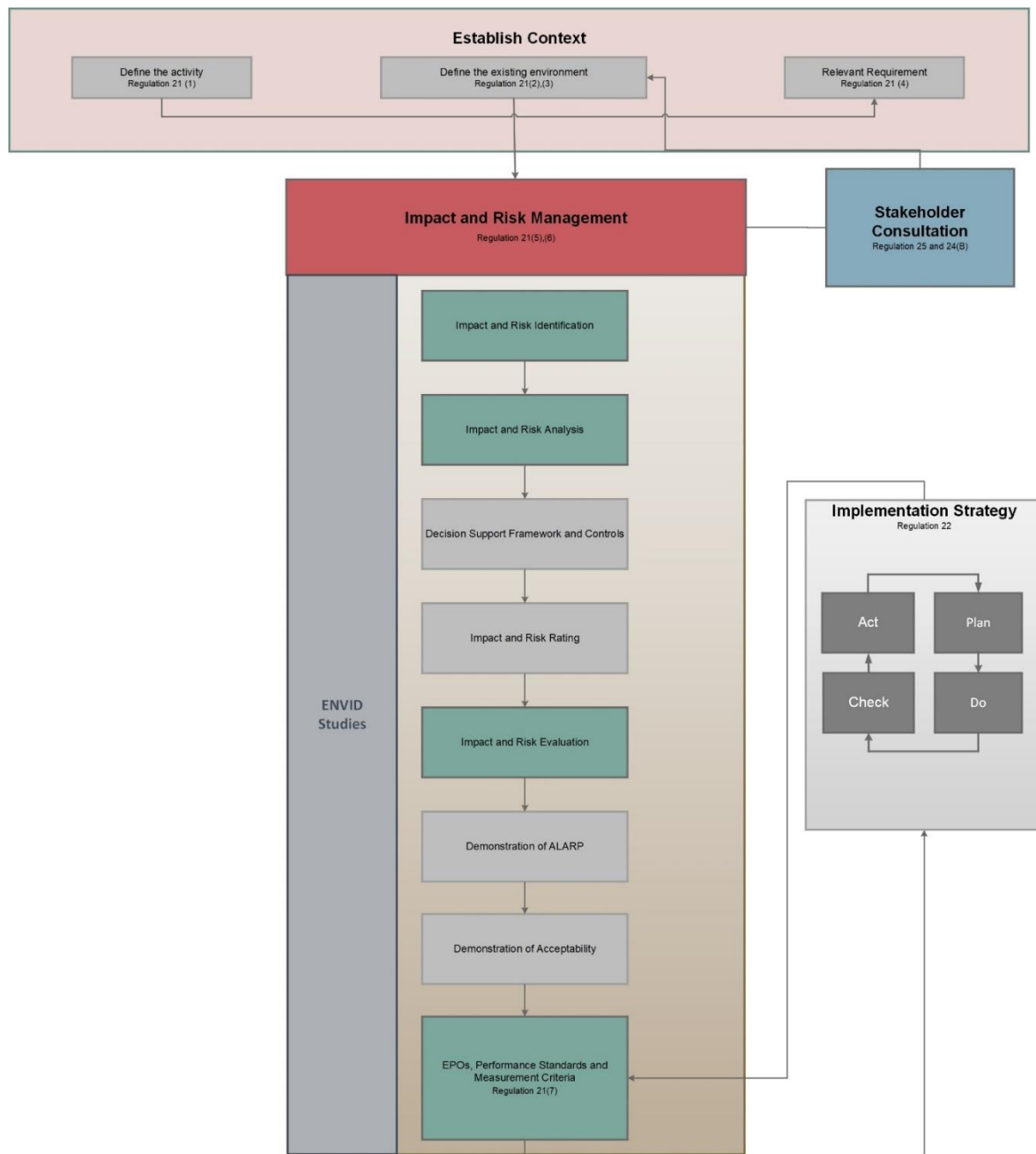
## 2. EP PROCESS

### 2.1 Overview

This section outlines the process Woodside follows to prepare the EP once an activity has been defined as a Petroleum Activity. This includes a description of the environmental risk management methodology that is used to identify, analyse and evaluate risks to meet ALARP and acceptability requirements; and to develop environmental performance outcomes (EPOs) and EPS. This section also describes Woodside's risk management methodologies applicable to implementation strategies applied during the activity.

### 2.2 Environmental Plan process

Figure 2-1 illustrates the EP development process. Each element of this process is discussed further in the following sections.



**Figure 2-1: EP development process**

## 2.2.1 Establish the context

Context is established by considering the proposed activities associated with a Petroleum Activity, and the environment in which the activities are planned to take place.

Describing the activity involves the evaluation of whether the activity meets the definition of a 'Petroleum Activity' as defined in the Environment Regulations. The activity is then described in relation to the location, what is to be undertaken and how—this allows environmental aspects for each activity to be identified.

## 2.2.2 Describe the existing environment

The values and sensitivities relevant to environment where the Petroleum Activity is proposed to be undertaken have been identified in Section 4, to the extent required to inform potential impacts to environmental receptors from the Petroleum Activity.

A description of values and sensitivities relevant to Woodside's North West Shelf Operations is contained within the Master Existing Environment (Master EE) document. The Master EE is provided in Appendix C and is revised in accordance with Woodside's Management of Knowledge process when Woodside considers that information contained within the Master EE is superseded or when Woodside assesses relevant new information (Section 7.6). Environmental legislation and other requirements

Relevant legislation and other requirements that apply to the Petroleum Activity are presented in Section 1.7 and Appendix B. These requirements have been considered throughout the development of this EP.

## 2.2.3 Impact and risk management

### 2.2.3.1 Impact and risk identification and analysis

The first step of impact and risk management is to identify all credible sources of environmental impacts and risks, include those directly and indirectly associated with the Petroleum Activity and potential emergency and accidental events. This may include environment impacts and risk that are a consequence of the proposed activity but are not within Woodside's control. In this EP:

- Planned (routine and non-routine) activities, including contingent activities, have the potential for inherent changes to the environment, are termed environmental 'impacts.'
- Unplanned events, including potential emergency and accidental events which have the potential to result in a change to the environment, are termed environmental 'risks.'

Impacts and risks presented in this EP were identified during an environment identification workshop (ENVID) and informed by recent and historic hazard identification and ENVID workshops for similar activities, relevant requirements, activities described in Section 3, and the existing environment that the Petroleum Activity has a potential to impact. The ENVID 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.

During the ENVID, environmental impacts and risks were assessed, and controls were assigned to manage the impact or risk. The ENVID also supported identification of relevant stakeholders to be consulted as part of development of this EP (Section 5). The output of the ENVID, an environmental impacts and risk register, was then used as a basis to develop the risk and impact assessment section of this EP (Section 6).

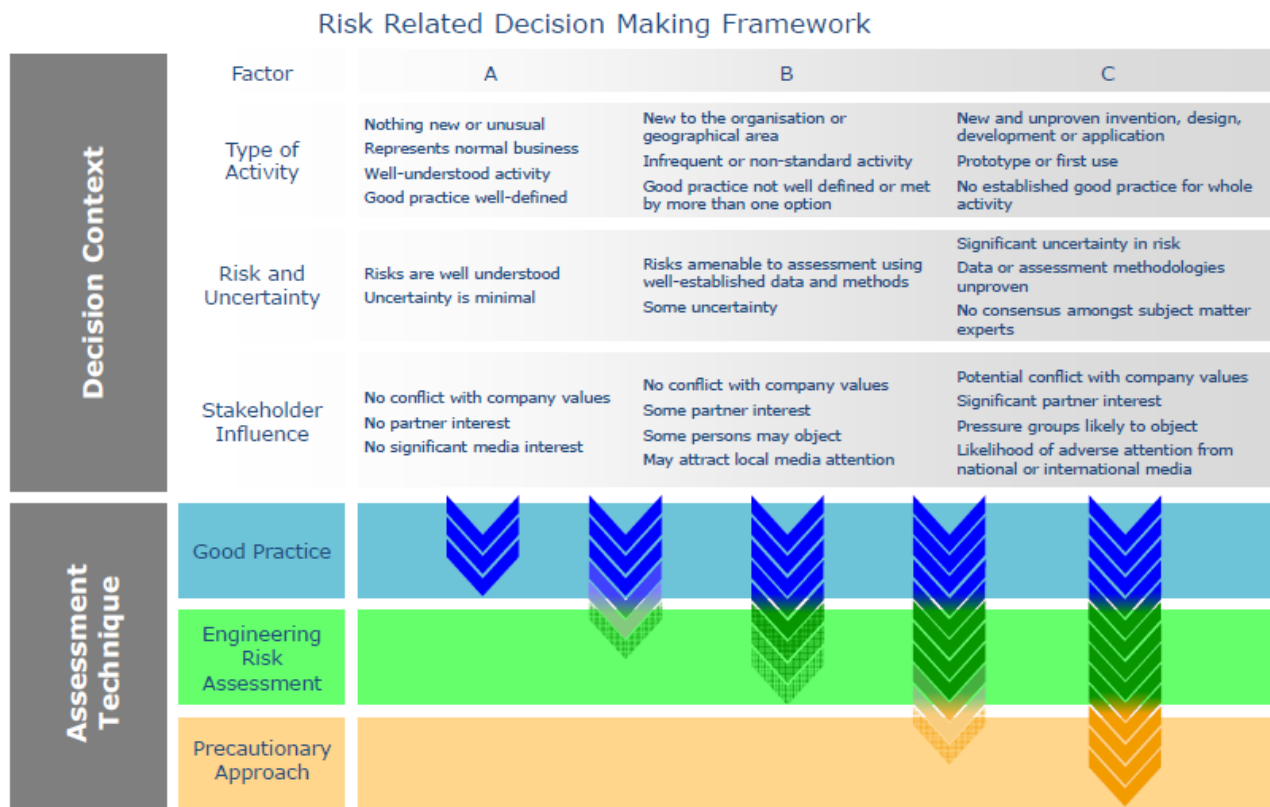
### 2.2.3.2 Decision support framework

To support the impact and risk assessment process and Woodside's determination of acceptability, Woodside's health, safety, and environment (HSE) risk management procedures include using a decision support framework based on principles set out in the Guidance on Risk Related Decision Making (Oil and Gas UK 2014). 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 and assessment).

The framework allows a decision type (A, B, or C) to be selected for each impact and risk, based on several criteria; the decision type is documented in the environmental impacts and risk register. Figure 2-2 summarises the framework, criteria, and resulting level of assessment for decision type A, B and C, which are discussed further below.



**Figure 2-2: Risk-related decision-making framework**

Source: Ref. (Oil and Gas UK 2014)

#### 2.2.3.2.1 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 use professional judgement.

#### 2.2.3.2.2 Decision Type B

Decision Type B risks and impacts typically involve greater uncertainty and complexity and are considered higher-order impacts and risks. These impacts and 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.

#### 2.2.3.2.3 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 or 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 stakeholder consultation as part of the risk assessment process.

### 2.2.3.3 Decision support framework tools

The below framework tools were applied, as appropriate, when assessing each impact and risk to help identify control measures based on the selected 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 identified in Woodside’s code of conduct, policies and the Woodside Compass. 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.

### 2.2.3.4 Decision calibration

To determine that the decision type selected, and the control measures applied are suitable, the following 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 Stakeholder Consultation: Consultation undertaken within Woodside to inform the decision and verify company values are met.
- External Stakeholder 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.

## 2.2.4 Control measures

Once impacts and risks have been identified, the potentially impacted receptors have been identified and understood, and the decision type has been selected, impact and risk reduction measures (i.e. controls) can be applied. Controls are prioritised and categorised in accordance with the hierarchy of controls listed below, where risk reduction measures at the top of the hierarchy take precedence over risk reduction measures further down:

- Elimination of the impact or risk by removing the hazard<sup>1</sup>.
- Substitution of a hazard with a less hazardous one.
- Engineering controls including design measures to prevent or reduce the frequency, or detect or control, the impact or risk event (limiting the magnitude, intensity and duration) such as:
  - Prevention: design measures that reduce the likelihood of a hazardous event occurring

<sup>1</sup> A hazard has the potential to cause harm to the environment.

- 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 including management systems and work instructions used to prevent or mitigate environmental exposure to hazards.
- Emergency response and contingency planning including methods to enable recovery from the impact of an event (e.g. protection barriers deployed near the sensitive receptor).

## 2.2.5 Impact and risk classification

Environmental impacts and risks are assessed to determine their potential impact significance level or risk rating, which can then be evaluated, along with other criteria, against the ALARP and acceptability requirements under the Environment Regulations. The full process for impact and risk classification is described in the subsections below.

### 2.2.5.1 Impact classification

Impacts are classified by significance level in accordance with the Environmental Impact Assessment Guidance Tool, whereby the significance levels are defined in the Woodside Environment Impact Assessment Guideline. Impact significance levels are assigned based on the magnitude of the potential impact and the receptor sensitivity as shown in Table 2-1. Where multiple receptors have the potential to be impacted, the worst-case impact significance level is carried into the final impact assessment and evaluation.

**Table 2-1: Determination of impact significance level**

Magnitude <sup>1</sup>	Receptor sensitivity <sup>1</sup>			Impact significance level <sup>2</sup>
	Low	Medium	High	
Catastrophic	B	A	A	Catastrophic (A) – Applicable limits or standards are substantially exceeded and/or catastrophic or major magnitude impacts are expected to receptors of medium/high or high sensitivity respectively.
Major	C	B	A	Major (B) – Applicable limits or standards are exceeded and/or moderate, major or catastrophic magnitude impacts are expected to occur to receptors of high, medium or low sensitivity respectively.
Moderate	D	C	B	Moderate (C) – Impacts are close to applicable limits or standards, or within standards but with potential for occasional exceedance. Minor, moderate or major magnitude impacts are predicted to occur to receptors of high, medium or low sensitivity respectively.
Minor	E	D	C	Minor (D) – Impact magnitude is within applicable standards but is considered to have significance. Slight, minor or moderate impacts are predicted to occur to receptors of high, medium or low sensitivity respectively.
Slight	F	E	D	Slight (E) – The receptor will experience a noticeable effect, but the impact magnitude is sufficiently small and well within applicable standards, and/or the receptor is of low value
No lasting effect	F	F	E	Negligible (F) – The receptor will essentially not be affected

1. Defined in the Environment Impact Assessment Guidance Tool

2. Defined in the Woodside Environment Impact Assessment Guideline

### 2.2.5.2 Risk classification

Risks are classified in accordance with the Environmental Risk Assessment Guidance Tool, which cross-references to the Woodside Risk Matrix. The steps for risk classification are described in the subsections below.

#### 2.2.5.2.1 Determine the risk consequence Level

Table 2-2 describes the possible environmental and social-cultural consequence levels for each identified risk. Where multiple receptors have the potential to be impacted, the worst-case consequence level is carried into the final risk assessment and evaluation.

**Table 2-2: 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 attributes.	Catastrophic, long-term impact (>20 years) to a community, social infrastructure or highly valued areas/items of international cultural significance.	A
Major, long-term impact (10–50 years) on highly valued ecosystem, species, habitat or physical or biological attributes.	Major, long-term impact (5–20 years) to a community, social infrastructure or highly valued areas/items of national cultural significance.	B
Moderate, medium-term impact (2–10 years) on ecosystem, species, habitat or physical or biological attributes.	Moderate, medium-term impact (2–5 years) to a community, social infrastructure or highly valued areas/items of national cultural significance.	C
Minor, short-term impact (1–2 years) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Minor, short-term impact (1–2 years) to a community or highly valued areas/items of cultural significance.	D
Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	Slight, short-term impact (<1 year) to a community or areas/items 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 areas/items of cultural significance.	F

#### 2.2.5.2.2 Select the likelihood level

Table 2-3 describes the possible likelihood levels for each identified risk. Likelihood is determined based on the chance of the selected worst-case consequence occurring.

**Table 2-3: Woodside risk matrix likelihood levels**

	Likelihood description					
	<i>Remote</i>	<i>Highly unlikely</i>	<i>Unlikely</i>	<i>Possible</i>	<i>Likely</i>	<i>Highly likely</i>
<b>Frequency</b>	1 in 100,000–1,000,000 years	1 in 10,000–100,000 years	1 in 1,000–10,000 years	1 in 100–1,000 years	1 in 10–100 years	>1 in 10 years
<b>Experience</b>	Unheard of in the industry	Has occurred once or twice in the industry	Has occurred many times in the industry but not at Woodside	Has occurred once or twice in Woodside or may possibly occur	Has occurred frequently at Woodside or is likely to occur	Has occurred frequently at the location or is expected to occur
<b>Likelihood level</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

### 2.2.5.2.3 Calculate the risk rating

The risk rating is derived from the consequence and likelihood levels determined above, in accordance with the Woodside Risk Matrix summarised in Table 2-4. 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 in the environmental impacts and risk register.

**Table 2-4: Woodside risk matrix determination of risk rating**

Consequence level	Likelihood level						Risk rating
	0	1	2	3	4	5	
A	A0	A1	A2	A3	A4	A5	Severe
B	B0	B1	B2	B3	B4	B5	Very High
C	C0	C1	C2	C3	C4	C5	High
D	D0	D1	D2	D3	D4	D5	Moderate
E	E0	E1	E2	E3	E4	E5	Low
F	F0	F1	F2	F3	F4	F5	

## 2.3 Impact and risk evaluation

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

### 2.3.1 Demonstration of ALARP

The descriptions in Table 2-5 articulate how Woodside demonstrates that each impact and risk identified within this EP are ALARP.

**Table 2-5: Summary of Woodside's criteria for ALARP demonstration**

Risk	Impact	Decision type
<b>Low and moderate</b> (below C, D, E or F level consequence)	<b>Negligible, slight, or minor</b> (D, E or F)	<b>A</b>
Woodside demonstrates these impacts, risks and decision types are reduced to ALARP if: <ul style="list-style-type: none"> <li>Identified controls meet legislative requirements, industry codes and standards, applicable company requirements and industry guidelines, or</li> <li>Further effort towards impact/risk reduction (beyond using opportunistic measures) is not reasonably practicable without sacrifices that are grossly disproportionate to the benefit gained.</li> </ul>		



Risk	Impact	Decision type
<b>High, very high or severe (A or B level consequence)</b>	<b>Moderate and above (C, B or A)</b>	<b>B and C</b>
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.		

### 2.3.2 Demonstration of acceptability

The descriptions in Table 2-6 articulate how Woodside demonstrates how each impact and risk identified within this EP are acceptable.

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

Risk	Impact	Decision type
<b>Low and moderate</b>	<b>Negligible, slight, or minor (D, E or F)</b>	<b>A</b>
Woodside demonstrates these lower order impacts, risks and decision types are 'broadly acceptable' if they meet the ALARP requirements for lower order risks and impacts described above (Table 2-5).		
<b>High, very high or severe</b>	<b>Moderate and above (C, B or A)</b>	<b>B and C</b>
<p>Woodside demonstrates these higher-order risks, impacts and decision types are 'acceptable if ALARP' if it can be demonstrated using good industry practice and RBA, 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>In undertaking this process for moderate and high risks, Woodside evaluates:</p> <ul style="list-style-type: none"> <li>the principles of ESD as defined under the EPBC Act</li> <li>the internal context – the proposed controls and consequence/risk level are consistent with Woodside policies, procedures and standards</li> <li>the external context – consideration of the environment consequence and stakeholder acceptability are considered</li> <li>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).</li> </ul> <p>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.</p>		

## 2.4 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, which are presented in Section 6.9. This assessment follows the following process:

- Identify relevant listed threatened species and ecological communities (Section 4.5 and 4.6)
- Identify relevant recovery plans and threat abatement plans (Section 3.2 of the Master Existing Environment)
- 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 Activity (Section 6.9).
- For those objectives/action areas applicable to the Petroleum Activity, 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).

## 2.5 Environmental performance outcomes, standards and measurement criteria

For each evaluated impact and risk, controls adopted during the ENVID and through demonstrating ALARP are paired with activity-specific environmental performance outcomes (EPO), performance standards (PS) and measurement criteria (MC). EPOs, PS and MC form the basis for monitoring and auditing and allow Woodside's environmental performance to be measured through the implementation of this EP to ensure impacts and risks will be managed to a level that is ALARP and acceptable. EPOs, PS and MC are defined for each identified credible impact and risk in Section 6.

## 2.6 Implement, monitor, review and report

An implementation strategy for the Petroleum Activity describes the specific measures and arrangements to be implemented for the duration of the program. The strategy is based on the requirements of the Environment Regulations, and demonstrates:

- control measures are effective in reducing the environmental impacts and risks of the Petroleum Activity 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 Activity 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.

## 2.7 Stakeholder consultation

Woodside undertakes consultation in the course of preparing EPs. The consultation, along with the process for ongoing engagement and consultation throughout the activity, is presented in Section 5. A copy of the full text correspondence is provided in Appendix F.

### 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 Petroleum Activity to be performed under this EP.

#### 3.2 Project overview

Woodside proposes to undertake the following decommissioning activities in the Angel field, referred to as the Petroleum Activity:

- Removal of three 14-inch rigid flowlines between the Angel platform and the AP2, AP3 and AP4 wells. The flowlines are carbon steel (with internal stainless-steel liner) and coated with polypropylene and concrete to provide stabilisation on the seabed.
- Removal of three 10-inch rigid tie-in spool pieces. Stainless steel with polypropylene and neoprene external coating.
- Removal of three 5 - inch flexible electro-hydraulic umbilicals between the Angel platform and the AP2, AP3 and AP4 wells. The umbilicals are coated with high density polyethylene (HDPE) and contain electrical and hydraulic cores.
- Removal of ancillary equipment, such as umbilical termination assemblies (UTAs) and associated foundations, jumpers, stabilisation materials.
- Installation of the permanent plugs / caps to preserve fluids within flowlines / umbilicals as close as practicable to the Angel platform.
- Removal of three wellheads (AP2, AP3 and AP4) using a construction support vessel under this EP if not removed by Mobile Offshore Drilling Unit (MODU) under the NWS Phase 1 Plug and Abandonment and TPA03 Well Intervention EP.

A full list of Angel subsea infrastructure within the scope of the EP is provided in Table 3-9.

Decommissioning of the Angel subsea infrastructure in this EP is contingent on successful flushing of the three Angel flowlines and plug and abandonment of three production wells having been completed. These activities are covered under separate EPs:

- The North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention Environment Plan covers plug and abandonment of the three redundant production Angel wells (AP2, AP3, and AP4) using a Mobile Offshore Drilling Unit (MODU). Plug and abandonment activities are planned to commence by 1 December 2025, subject to approvals and vessel availability.
- The Angel Operations Environment Plan covers flushing of the three Angel flowlines with treated seawater. Flushing activities are scheduled for Q3 2025. The flushing activity will be performed by installing a flushing spread on the Angel facility and flushing treated seawater from the facility into the flowlines and down the wells. During subsea infrastructure removal fluid remaining in the flushed flowlines will be released to the surrounding environment. Flow assurance modelling indicates fluid will be treated seawater with residual hydrocarbons (less than 30 ppm), with small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid as detailed in Table 3-6.

**Table 3-1: Petroleum Activity overview**

Item	Description
Permit Titles	WA-3-L
Location	Northern Carnarvon Basin
Water depth	77 m to 85 m
Subsea infrastructure	Removal of three 14-inch rigid flowlines: <ul style="list-style-type: none"> <li>• AP2: ~2.1 km (includes one midline 14-inch spool piece, 84 m long)</li> </ul>

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Item	Description
	<ul style="list-style-type: none"> <li>AP3: ~1.6 km</li> <li>AP4: ~2.7 km (includes one midline 14-inch spool piece, 84 m long)</li> </ul> <p>Removal of three 10-inch rigid tie-in spool pieces</p> <ul style="list-style-type: none"> <li>AP2: ~104 m (comprises two sections – wellhead spool 56 m x 10-inch, make-up spool 49m x 14-inch)</li> <li>AP3: ~ 60 m</li> <li>AP4: ~ 42 m</li> </ul> <p>Removal of three 5-inch flexible electro-hydraulic umbilicals</p> <ul style="list-style-type: none"> <li>AP2: ~2.5 km</li> <li>AP3: ~1.9 km</li> <li>AP4: ~2.9 km</li> </ul> <p>Removal of ancillary equipment Umbilical Termination Assembly (UTA) and steel foundation, jumpers, stabilisation materials)</p> <p>Installation of plugs and caps for flowlines / EHUs (close to Angel platform)</p>
Vessels	Multi-purpose construction vessel (MCV) General support vessels.
Key activities	Removal of redundant Angel flowlines, EHUs and associated infrastructure Removal of three Angel wellheads, if not removed by MODU during plug and abandonment activities

### 3.3 Location

The Petroleum Activity is in Commonwealth waters in the Northern Carnarvon Basin approximately 93 km north of the Dampier Archipelago on the coast of Western Australia (WA) (Figure 3-1). The closest landfall is Legendre Island, which is approximately 94 km south-east of the Operational Area.

The Angel subsea infrastructure is in approximately 80 m water depth in Production Licence WA-3-L. Section 3.4 defines the Operational Area within which the Petroleum Activity will take place.

The coordinates and water depths of the Angel subsea infrastructure is presented in Table 3-2. The location of the Petroleum Activity is shown in Figure 3-1.

**Table 3-2: Approximate location details for the Petroleum Activity including all relevant infrastructure\***

Activity	Water depth (approx. m LAT)	Latitude (WGS84)	Longitude (WGS84)	Production Licence(s)
AP2 production well	85	19° 29' 59" S	116° 36' 37" E	WA-3-L
AP3 production well	78	19° 30' 38" S	116° 36' 18" E	WA-3-L
AP4 production well	77	19° 31' 18" S	116° 35' 13" E	WA-3-L

*\*Refer to Final cut and plug locations for Angel flowlines and umbilicals will be determined through risk assessments with the selected subsea recovery contractor. The assessment will consider dropped object analysis results, flare heat dispersion modelling and distance from live infrastructure associated with the Angel platform.*

Table 3-8 for a complete list of Angel Subsea Infrastructure locations

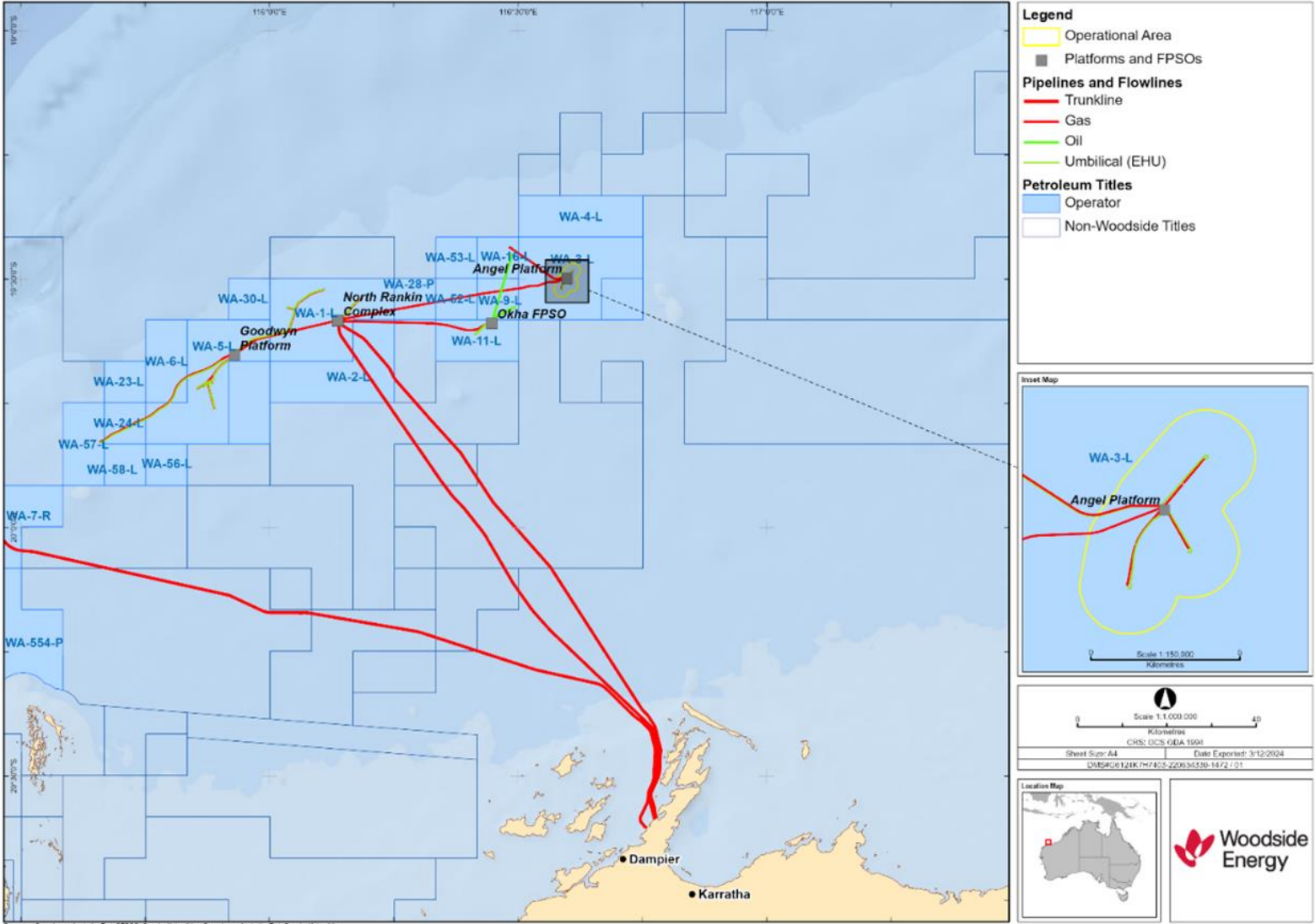


Figure 3-1: Location of the Petroleum Activity

### 3.3.1 Remaining Infrastructure in Title Area after Petroleum Activity

Woodside is decommissioning redundant equipment in the operating Angel field. Infrastructure that remains at the completion of this Petroleum Activity will continue to be managed under the Angel Operations EP and will include:

- Angel Platform
- Angel AP2 subsea infrastructure at Angel Platform:
  - 14-inch rigid tie-in spool
  - 14-inch rigid riser
  - ~59 m 14-inch rigid flowline (at riser end of flowline system)
  - 5-inch flexible electro-hydraulic umbilicals (EHU), ~298 m to topsides hang-off
- Angel AP3 subsea infrastructure at Angel Platform:
  - 14-inch rigid tie-in spool
  - 14-inch rigid riser
  - ~10 m 14-inch rigid flowline (at riser end of flowline system)
  - 5-inch flexible EHUs, ~104 m to topsides hang-off
- Angel AP4 subsea infrastructure at Angel Facility:
  - 14-inch rigid tie-in spool
  - 14-inch rigid riser
  - ~202 m 14-inch rigid flowline (at riser end of flowline system)
  - 5-inch flexible EHUs, ~226 m to topsides hang-off entry
- Angel tie-back to NRC consisting of 30" export flowline and power cable
- Lambert Deep Tie-Back to Angel
- Lambert West Tie-Back to Lambert Deep (expected to begin production in 2025).

### 3.4 Operational Area

The Operational Area shown in Figure 3-1 defines the spatial boundary of the Petroleum Activity; the planned aspects of the Petroleum Activity will not extend beyond the Operational Area. The Operational Area is defined as a 1500 m radius around the flowline, EHU, subsea infrastructure and wellheads allowing for the movement and positioning of vessels.

All planned activities within the Petroleum Activity will be limited to within the Operational Area. Vessel-related activities within the Operational Area will comply with this EP. Vessels supporting the Petroleum Activity when outside the Operational Area must adhere to applicable Maritime Regulations and other requirements.

### 3.5 Timing

The approximate timing and duration of the parts of the Petroleum Activity are summarised in Table 3-3. The Petroleum Activity is currently planned to commence by 1 December 2026 subject to approvals and vessel availability.

Project vessels are expected to remain within the Operational Area for approximately three months, including mobilisation, demobilisation and contingency. When underway, activities will be 24 hours per day, seven days per week. The Petroleum Activity may be undertaken 24-hrs per day, seven days per week.

The timing and duration of these activities is subject to change due to project schedule requirements, vessel availability, unforeseen circumstances, and weather.

This EP has risk-assessed removal activities throughout the year (all seasons) to provide operational flexibility for schedule changes and vessel availability.

The timeframes are therefore subject to change within the defined calendar years and, as no particular time periods have been nominated for avoidance based on environmental or stakeholder sensitivities, changes to the above will not be interpreted as 'new stages' against Regulation 39(1).

**Table 3-3: Summary of the timing of the Petroleum Activity**

Activity	Cumulative Duration	Approximate Timing
Subsea infrastructure removal	Approximately 3 months in Commonwealth waters, including weather contingency	The subsea infrastructure removal window is between Q3 2026 and Q1 2027 inclusive. Subsea infrastructure may be removed earlier (from Q1 2026) if Angel wells are plugged and abandoned ahead of schedule.
Wellhead removal	Approximately 1-5 days per well	Estimated to be conducted in Q3 2026 to Q1 2027, if removed by construction support vessel under this EP. Removal of this well infrastructure is also an optional activity using the MODU under the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA03 Well Intervention Environment Plan.

### 3.5.1 Simultaneous Operations

There are currently no planned simultaneous operations (SIMOPS) between the Petroleum Activity and other petroleum activities either by Woodside or other titleholders.

There is potential for SIMOPS to occur between the Petroleum Activity and other activities planned to occur in the Angel field:

- Angel flowline flushing activities defined in the Angel Operations EP, anticipated to commence in Q3 2025
- plug and abandonment activities defined in the NWS Phase 1 P&A and TPA03 Well Intervention EP, anticipated to commence by 1 December 2025, subject to approvals and vessel availability.
- geophysical and geotechnical survey activities defined in the Angel Carbon Capture and Storage (CCS) Geophysical and Geotechnical Survey EP, anticipated to commence Q1 2026 for approximately 100 days
- integrated wellhead removal activities in the NWS and Julimar Exploration Wellhead Decommissioning EP (which includes wells in WA-3-L), anticipated to occur between 2024 and 2028 for approximately 10 days per well
- routine vessel IMR operations under the Angel Operations Environment Plan.

If SIMOPS were to occur, up to four vessels and the MODU may be in the field at the same time based on:

- multi purpose construction vessel (MCV)
- up to three general supply/support vessels, including multi use support vessel (MPSV), Anchor Handler Vessel (AHV) and/or light construction vessel (LCV)
- MODU (moored, DP or hybrid)

### 3.6 Project Vessels and Support Vehicles

#### 3.6.1 Vessel Types and Specifications

A single multi-purpose construction vessel (MCV) is expected to be the only vessel required to remove the Angel subsea infrastructure. A summary of MCV characteristics is provided in Table 3-4. Ad hoc support may be provided as required by a small general support vessel. Support vessel visits to the MCV are expected to be infrequent and of short duration. MCV will reprovision when returning recovered Angel subsea infrastructure to shore. Crew changes will be either during interim mobilisations or by helicopter.

All vessels will have a suitable survey class for the activities it is performing.

**Table 3-4: Summary of indicative project vessel characteristics**

Vessel Type	Maximum Persons Onboard	Typical Length (m)	Typical Draught (m)	Fuel Type	Largest Fuel Tank Volume (m <sup>3</sup> )
MCV	120	120	8	MDO	330
General support vessel	15	20	2	MDO	3

#### 3.6.2 Vessel Operations

Vessels will be subject to Woodside's Marine Management Procedure. All required audits and inspections will assess compliance with the laws of the international shipping industry, which include safety and environmental management requirements, and maritime legislation including International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1987 (MARPOL) and other International Maritime Organisation (IMO) standards.

Vessels will display navigational lighting and external lighting required for safe operations. Lighting levels will be determined primarily by operational safety and navigational requirements under relevant legislation, specifically the Commonwealth Navigation Act 2012. The vessels will be lit to maintain operational safety on a 24-hour basis.

A temporary 500 m exclusion zone will be established around the MCV for the duration of the decommissioning activities.

The MCV will transport equipment and materials between the Operational Area and port during subsea infrastructure removal activities.

The MCV and support vessels will produce routine discharges to the sea in accordance with relevant requirements, such as:

- utility discharges, such as sewage, grey water, cooling water, reverse osmosis brine and putrescible wastes
- deck drainage
- bilge water
- cooling water
- ballast water.

Vessels will run on marine diesel oil (MDO); no intermediate or heavy fuel oils will be used. All project vessels will use diesel-powered generators for power generation. Bunkering of marine diesel to specialised pipe removal vessels/offshore support vessels is planned to occur in the Operational Area.

The MCV will not anchor in the Operational Area under normal operating conditions, instead using dynamic positioning (DP) to maintain position.

#### 3.6.3 Remotely Operated Vehicles

Work-class ROVs deployed from the MCV will be used throughout the Petroleum Activity. ROVs may be used for activities such as:

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- visual inspections and observations
- seabed and hazard survey
- marine growth removal and cleaning
- sediment relocation
- subsea rigging, handling, and cutting
- tooling and cutting infrastructure
- recovery of dropped objects
- as-found/as-left seabed surveys.

### 3.6.4 Helicopters

Helicopters may be used during the Petroleum Activity for planned crew changes and unplanned transfers to or from the MCV (e.g., medical evacuation), as required. Helicopter operations within the Operational Area are limited to take-off and landing on the helideck.

## 3.7 Holistic Angel Field Decommissioning and Timing

### 3.7.1 Decommissioning Planning

The activities to decommission the Angel field is covered by the following EPs. The scope of each is detailed in Table 3-5.

A future EP is planned for the decommissioning of infrastructure still in operation in the Angel field. This EP will remain in force until such time as all decommissioning activities are completed and Section 270 of the OPGGS Act requirements are satisfied.

**Table 3-5: Summary of EPs related to the decommissioning of Angel Subsea field**

EP	Scope	EP Initiation	EP Termination
Angel Facility Operations EP	Field management activities including flushing and filling Angel flowlines with treated seawater Maintenance of subsea infrastructure including IMR	Ongoing EP accepted by NOPSEMA on the 25 June 2024. Flushing and filling of flowlines with treated seawater expected in Q3 2025.	Ongoing. This EP is the overarching permissioning document for ongoing management of infrastructure in the WA-3-L field. Decommissioning planning for WA-3-L is outlined in Section 7.
North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention EP	Plug and abandonment activities of AP2, AP3 and AP4 Optional removal of Angel well infrastructure with MODU.	From acceptance of EP by NOPSEMA. Plug and abandonment activities are planned to be commence by 1 December 2025.	The EP will end when Woodside notifies NOPSEMA that the Petroleum Activity described in the EP is completed in accordance with Regulation 46 of the Environment Regulations.
Angel Subsea Infrastructure Removal (this EP)	Undertake removal of redundant Angel flowlines, and associated subsea infrastructure (EHUs, tie-in spools, flying leads, mattresses). Optional removal of Angel well infrastructure with MCV	From acceptance of EP by NOPSEMA. The subsea infrastructure removal window is between Q3 2026 and Q1 2027 inclusive. Subsea infrastructure may be removed earlier (from Q1 2026) if Angel wells are plugged and abandoned ahead of schedule.	The EP will end when Woodside notifies NOPSEMA that the Petroleum Activity described in the EP is completed in accordance with Regulation 46 of the Environment Regulations.

### 3.7.2 Surveys or Studies Undertaken to Support the Angel Field Decommissioning Program

An offshore campaign was undertaken in 2019 which included general visual and cathodic protection (CP) inspections.

A section of each of the wellhead spools will be recovered during the flushing campaign for testing for contaminants including hydrocarbons, Naturally Occurring Radioactive Material (NORM) and mercury. Note that the EHU will not be tested as it does not receive hydrocarbons during production. The results of this testing will inform decommissioning planning for the Angel field.

Additional information on each is provided below.

#### 3.7.2.1 General Visual and CP Inspections

The results of the Angel subsea infrastructure visual inspection are summarised in Table 3-9.

The accumulation of pipeline integrity data over operational lifetime provides a sufficient level of information to satisfy Woodside with respect to internal pipe condition.

#### 3.7.2.2 Contaminants Studies

##### Hydrocarbons

The flowlines will be flushed with treated sea water to reduce the hydrocarbon content of the lines to ALARP. Modelling of the flushing operations indicates residual Oil in Water content of <30 ppm in the treated seawater and pockets of trapped hydrocarbons (both liquid condensate and gas). Modelled volumes of trapped hydrocarbons for each flowline are provided in Table 3-6.

**Table 3-6: Summary of Pockets of Trapped Hydrocarbons**

Flowline	Hydrocarbon Liquid (m <sup>3</sup> )	Hydrocarbon Gas (m <sup>3</sup> )
AP2 – volumes <i>insitu</i>	1.0	<0.1
AP2 – equivalent volume at surface conditions	1.0	7.2
AP3 – volumes <i>insitu</i>	<0.1	<0.1
AP3 – equivalent volume at surface conditions	<0.1	<0.1
AP4 – volumes <i>insitu</i>	1.6	<0.1
AP4 – equivalent volume at surface conditions	1.6	12.0
<b>Total</b> – equivalent volume at surface conditions	<b>2.6</b>	<b>19.2</b>

##### Naturally Occurring Radioactive Material

Naturally occurring radioactive material (NORM) may be deposited within hydrocarbon production systems during production. The radionuclides are in solution at the temperatures and pressures used for oil and gas extraction. As temperatures and pressures reduce within infrastructure, the radioactive material may be deposited in scale on internal surfaces of pipes and other components and is referred to as NORM. NORM in oil and gas extraction is a common phenomenon.

NORMS were discovered in the Angel produced water system during the 2021 vessel inspections for Lambert Deep. Therefore, NORMs are likely to be present in the recovered infrastructure. Sampling of a section of the wellhead spools will be performed prior to this Petroleum Activity to inform the risks of NORMs presence.

Sampling for NORMS within equipment exposed to production fluids will be performed during the activity to inform the classification and subsequent management of recovered materials.

### **Mercury**

Mercury is ubiquitous in oil and gas reservoirs and can pose a serious risk to health and the environment. Mercury may deposit onto the internal process infrastructure via mechanisms, such as chemisorption, adsorption, and precipitated scale deposits. Based on known patterns of mercury deposition in oil and gas infrastructure, metal surfaces exposed to gas-phase hydrocarbons were identified as being the most likely locations for deposition of mercury scale (Kho *et al.*, 2022).

In 2020 Core Laboratories obtained separator gas samples (3 samples performed in triplicate) and tested Mercury concentration from well AP3. AP3 had not been flowing for some months at the time of testing. The results indicated a mercury in live condensate between 4.6ng/g to 47.5ng/g.

Based on the predicted gas and liquid volumes within trapped hydrocarbon pockets, there is a potential for liquid mercury up to 36mg for AP2 and 60mg for AP4. These results highlight the potential for mercury to be impregnated in certain recovered infrastructure, however further sampling of flowlines is not possible as they are sealed and pressurised above hydrostatic pressure.

During infrastructure removal, Woodside will sample mercury within equipment exposed to production fluids to inform the classification and subsequent management of recovered materials.

#### **3.7.2.3 Technical and Scientific Studies**

To inform decommissioning planning for Woodside's subsea infrastructure, Woodside commissioned a number of scientific and technical engineering studies between 2016 and 2021. These technical engineering studies were undertaken to inform recovery activities for Echo Yodel and Angel flowlines, which are to be completed in the same subsea removal campaign.

Relevant studies completed to support the removal scope are listed in Table 3-7.

**Table 3-7: Background studies completed and/or used for the options assessment process**

<b>Subject</b>	<b>Study(s) Title</b>	<b>Section</b>
Corrosion Assessment	Echo Yodel Decommissioning – Echo Yodel Pipeline Corrosion Assessment (Atteris, 2021)	The findings of this study are discussed herein.
Pipeline Recovery Feasibility Report	Echo Yodel Decommissioning Study (Subsea7, 2021)	The findings of this study are discussed herein.
Pipeline Coating Technical Study	Technical Desktop Study on the integrity of the pipeline coating system during the recovery operations	The findings of this study are discussed herein.
Artificial habitat value	McLean, D.L., Partridge, J.C., Bond, T., Birt, M.J., Bornt, K.R., Langlois, T.J., 2017. Using industry ROV videos to assess fish associations with subsea pipelines. <i>Continental Shelf Research</i> 141: 76–97. Doi:10.1016/j.csr.2017.05.006. Bond, T., Taylor, M.D. 2019. Fish & Habitats of EY Pipeline & Umbilical. Report on Research Findings". Report prepared by UWA for Woodside, January 2019, Version 3, 52 pp.	The findings of these studies are discussed in Section 4.5

### **Corrosion Assessment**

An engineering study was undertaken on the potential impact of external and internal corrosion to flowline recovery operations for reverse S-lay to inform recovery methods for the Echo Yodel pipeline. The outcomes of this study is considered applicable to the Angel flowlines. Potential for internal or external corrosion does not affect the cut and recover method. The study concluded that corrosion of the pipeline is not expected to adversely impact recovery of the flowline via S-lay in the proposed timeframe for Echo Yodel planned recovery (2022-2026).

The study found that it was highly unlikely that a loss of wall thickness occurred during operations given the use of corrosion resistant pipeline material, corrosion coatings and a sacrificial CP system. Any loss of in wall thickness that may have occurred while the flowline has been suspended would also be limited given the water used to suspend the pipeline was treated with Roemex RX-5254 and the internal of the pipe is an

enclosed environment. The study also concluded that the pipeline coating and CP system have sufficient life remaining to protect the pipe external surface beyond 2031.

### **Flowline Recovery Feasibility Assessment**

To inform the potential flowline recovery methods, a flowline recovery feasibility assessment was undertaken for reverse reel lay, S-lay and subsea cut and recovery options. Whilst the study was performed for Echo Yodel, the outcomes of this study are considered applicable to the Angel flowlines. Recovery by either reverse S-lay or subsea cut and recover methods are both feasible.

### **Flowline Coating Technical Study**

A flowline coating study was undertaken to understand how coating degradation could impact coating integrity and flowline recovery operations for the reverse S-lay method. The study concluded that interface slip between the Concrete Weight Coat (CWC) and 3 Layer Polypropylene (3LPP) was a risk, that could not be accurately modelled. The uncertainty regarding CWC load transfer under compression to the 3LPP (and into the steel flowline, hence primary weight source) was significant. Generally reverse S-lay of concrete coated flowlines with top tensions greater than a few tonnes is not conducted in industry due to the risk of the flowline slipping through the CWC.

Based on the outcomes of these technical studies a subsea cut and recover method has been selected for the Echo Yodel and Angel flowlines, which are to be completed in the same subsea removal campaign. The flowline recovery method outlined in this EP for the Angel flowlines is subsea cut and recover. Cuts should be made away from the field joints to avoid areas of potential degradation, as described in Section 3.9.1.

## **3.8 Angel Subsea Infrastructure Overview**

All subsea infrastructure within the Operational Area is presented within Table 3-9, along with the status, condition, and decommissioning schedule. The layout of the field infrastructure is presented in Figure 3-2, Figure 3-3 and Figure 3-4. Details on the recovery methods are presented in Section 3.9.

Suspension of the flowlines occurred at the end of operational field life in 2020. Flowlines will be flushed with sea water treated with Roemex RX-5254, a biocide and oxygen scavenger cocktail chemical used to protect the flowline material from internal corrosion and maintain structural integrity for recovery and its recycling value. Flowlines will be disconnected and outlets plugged at the completion of flushing activities which is currently scheduled for Q3 2025. The flushing and disconnection activity is beyond the scope of this EP and is being conducted under the Angel Operations Environment Plan (the overarching permissioning document for this operating field).

The EHUs will be depressurised after completion of flushing activities. Hydraulic lines will be depressurised and disconnected from the XTs. Electrical controls will remain connected to the XTs. The MODU will disconnect the electrical controls and recover the XTs during the P&A campaign.

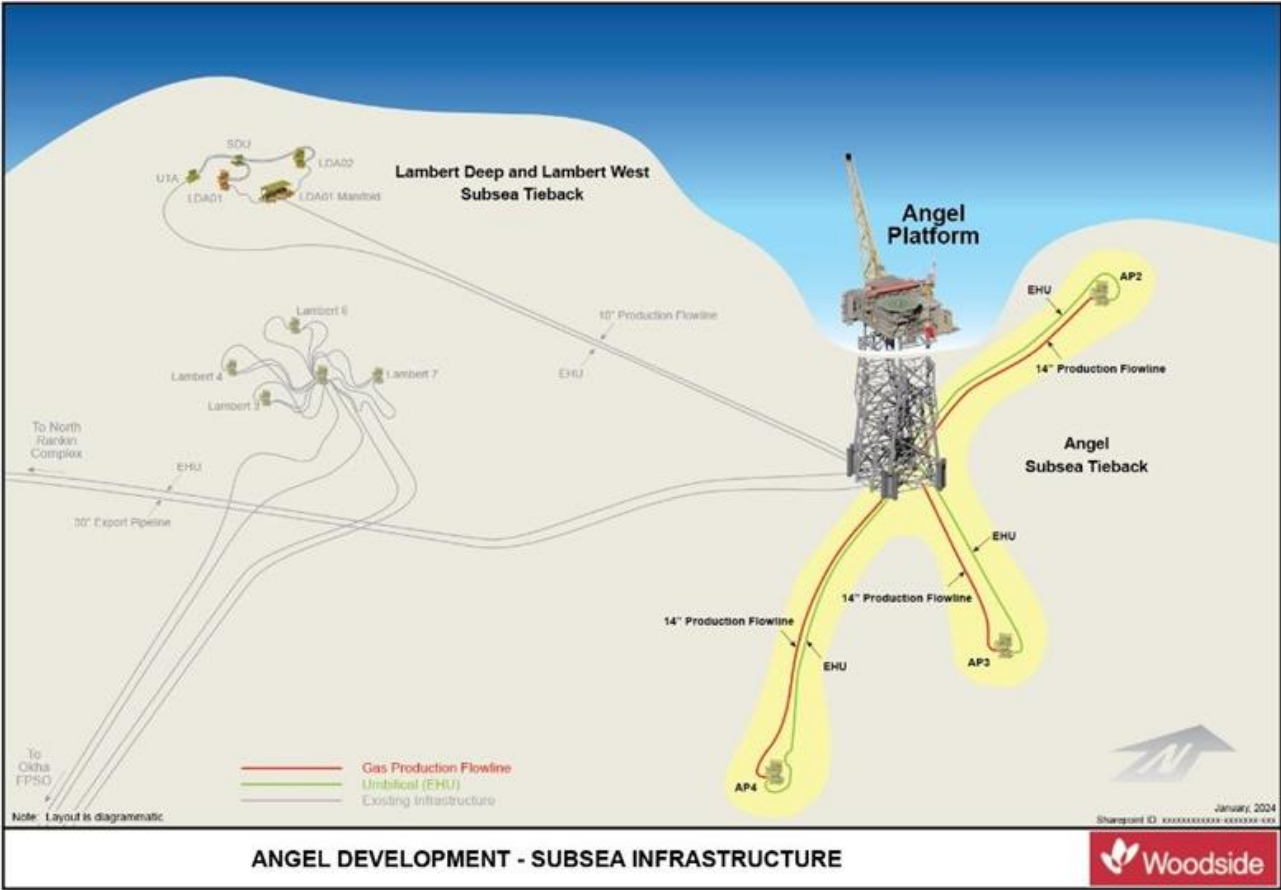
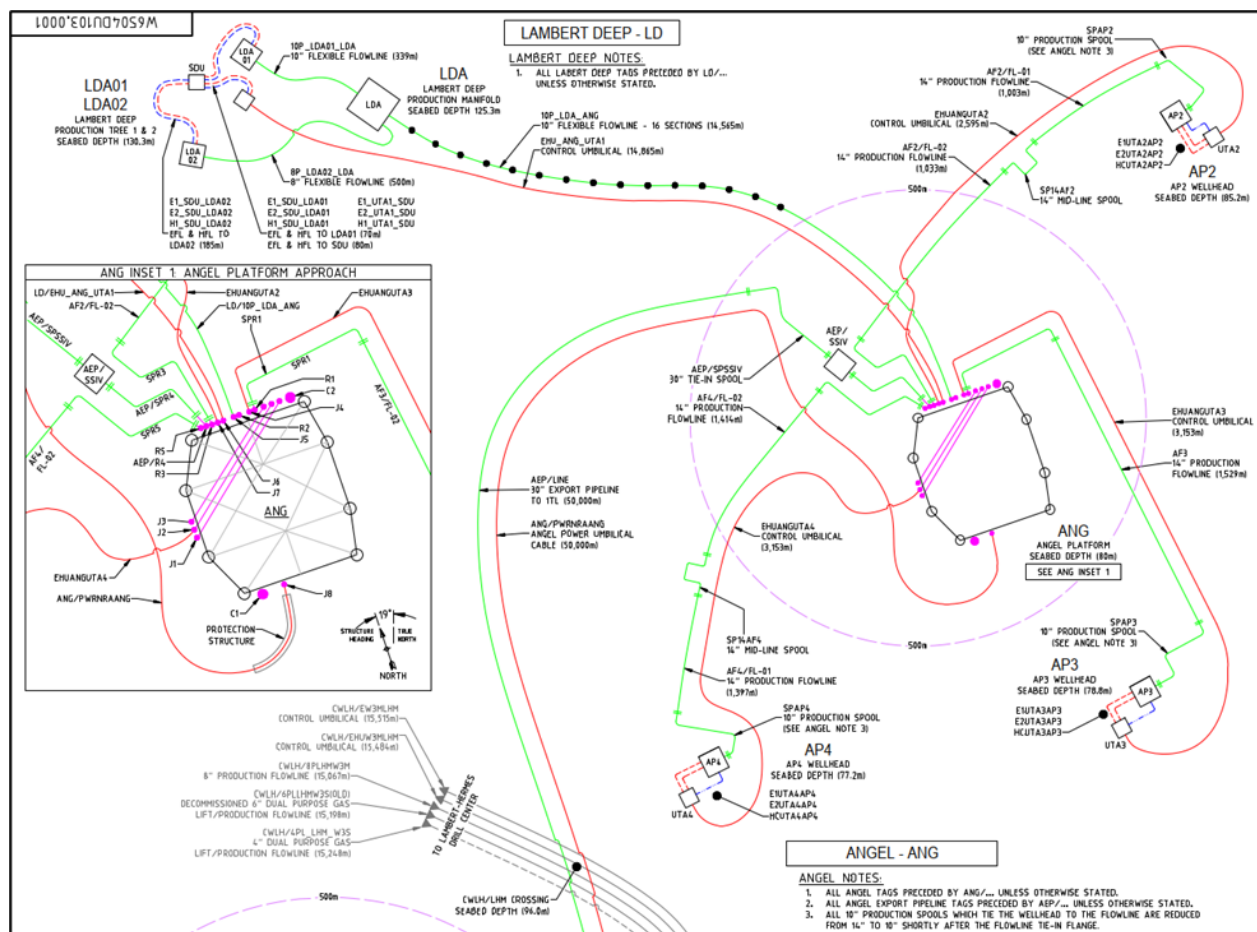
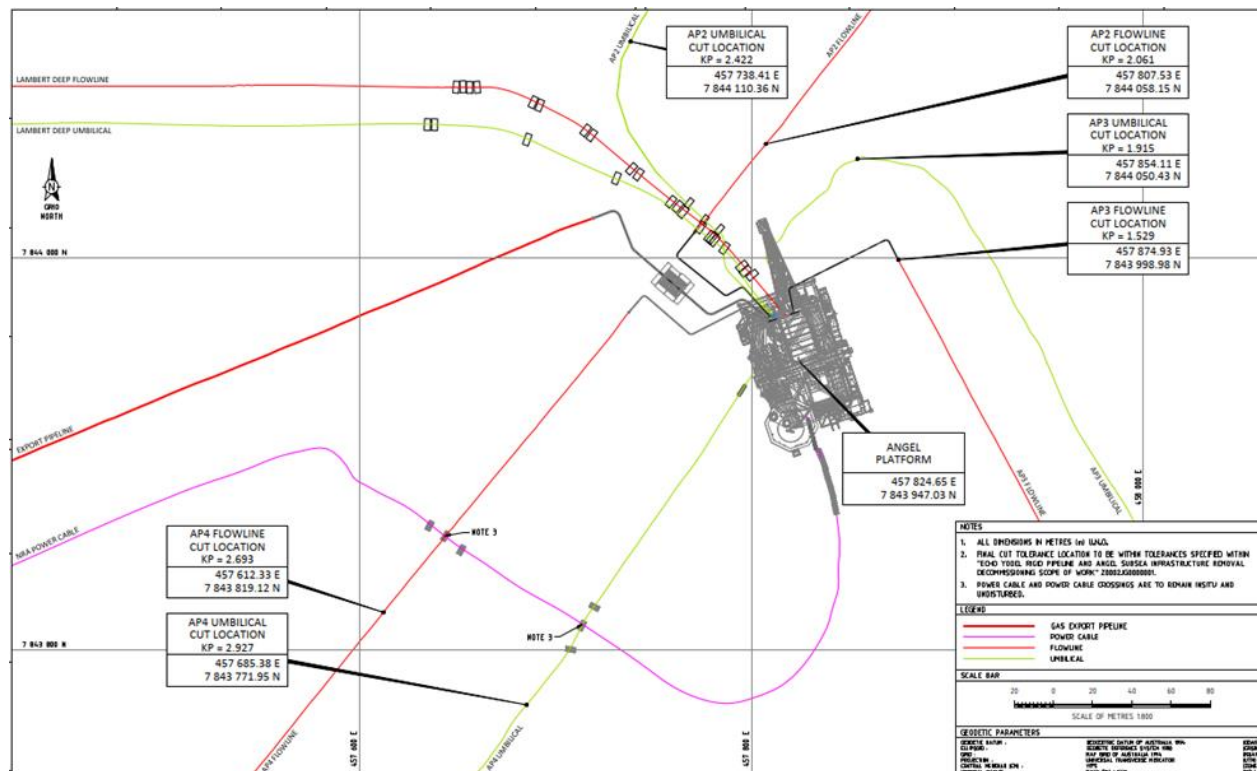


Figure 3-2: AP2, AP3, and AP4 subsea infrastructure layout

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**Figure 3-3: Schematic of Subsea Tiebacks to Angel Facility**



**Figure 3-4: Schematic of Cut and Plug / Cap Locations for AP2, AP3 and AP4 Subsea Tiebacks**

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Final cut and plug locations for Angel flowlines and umbilicals will be determined through risk assessments with the selected subsea recovery contractor. The assessment will consider dropped object analysis results, flare heat dispersion modelling and distance from live infrastructure associated with the Angel platform.

**Table 3-8: Angel subsea infrastructure locations**

Asset Description	Water Depth	Start Location		End Location	
	m	Latitude	Longitude	Latitude	Longitude
AP2 well	84	19° 28' 59.7433" S	116° 36' 37.4083" E		
AP3 well	78	19° 30' 38.5126" S	116° 36' 18.5726" E		
AP4 well	77	19° 31' 18.1097" S	116° 35' 13.4346" E		
Angel platform	80	19° 29' 55.144" S	116° 35' 53.066" E		
AP2 umbilical	80-84	19° 29' 53.97" S (platform)	116° 35' 52.49" E (platform)	19° 28' 59.71" S (well)	116° 36' 37.38" E (well)
AP3 umbilical	78-80	19° 29' 53.91" S (platform)	116° 35' 52.68" E (platform)	19° 30' 38.96" S (well)	116° 36' 18.57" E (well)
AP4 umbilical	77-80	19° 29' 55.46" S (platform)	116° 35' 52.17" E (platform)	19° 31' 18.56" S (well)	116° 35' 13.40" E (well)
AP2 flowline	80-84	19° 29' 52.95" S (platform)	116° 35' 51.23" E (platform)	19° 28' 59.06" S (well)	116° 36' 36.67" E (well)
AP3 flowline	80-83	19° 29' 53.39" S (platform)	116° 35' 54.75" E (platform)	19° 30' 37.28" S (well)	116° 36' 19.43" E (well)
AP4 flowline	80-82	19° 29' 54.30" S (platform)	116° 35' 50.08" E (platform)	19° 31' 17.32" S (well)	116° 35' 12.78" E (well)

Table 3-9: Inventory of Angel Gas Field Infrastructure

Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
<b>Well Infrastructure</b>						
Subsea trees: <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Height: 4 m Width: 3-4 m Length: 3-4 m  7" Vertical XT	~144 Te (including choke module)  (~48 Te per XT)	Primarily steel Small amounts of synthetic materials (e.g., O-ring seals, gaskets etc.)	<b>Status (at commencement of Petroleum Activity):</b> Hydraulic valves and surface-controlled subsurface safety valve closed in and pressure tested in 2020. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flowlines will be disconnected and outlets plugged at the completion of flushing activities which is currently scheduled for Q3 2025. Flushing will be conducted under the Angel Operations Environment Plan. <b>Burial:</b> Unburied. <b>Condition:</b> Good overall condition, no evidence of corrosion. 100% coverage of marine growth but light thickness.	No  Removal of subsea trees is covered under the North West Shelf Phase 1 Plug and Abandonment and TPA03 Well Intervention EP
Wellheads and temporary guidebases: <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Height: ~3-4 m Diameter: ~19"	~20 Te	Steel	<b>Status (at commencement of Petroleum Activity):</b> Remains on seabed as installed. <b>Burial:</b> Installed partially below the seabed. <b>Condition:</b> Good overall condition, no evidence of corrosion. 100% coverage of marine growth but light thickness.	Yes  Wellhead removal is also an optional activity using the mobile offshore drilling unit in the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA03 Well Intervention Environment Plan
<b>Flowline System (including midline spools)</b>						
Production 14" Rigid Steel Flowline	2	Total length: ~1.977 km	Total Weight: 596.0 Te	Linepipe:	<b>Status (at commencement of Petroleum Activity)</b>	Yes

<sup>2</sup> Based on findings of the 2015, 2016 and 2019 subsea surveys

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
AP2 Flowline: Tie-in Flange at Wellhead Spool to cut and plug location at KP 2.061		Outside diameter (incl coatings): ~447.6 mm  Inside diameter (incl liner): ~321 mm  Internal Volume: 160 m <sup>3</sup>	<b>Linepipe:</b> Carbon steel: 238.0 Te Stainless steel: 48.3 Te  <b>External Coatings:</b> 3LPP: 12.1 Te Concrete: 292.7 Te  <b>Field joints:</b> PU: 3.4 Te HSS: 0.4 Te  <b>Anodes – 1.0 Te</b>	14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)  <b>External Coatings:</b> 6 mm thickness 3 layer polypropylene (3LPP) 40 mm thickness concrete weight coating  <b>Field joints:</b> 40 mm polyurethane (PU) foam infill 2.5 mm heat shrink sleeve  <b>Anodes:</b> Aluminium-Zinc-Indium Alloy	Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater, and pockets of trapped hydrocarbons – 1 m <sup>3</sup> (liquid) and 7.2 m <sup>3</sup> (gas, equivalent volume at surface conditions).  <b>Burial:</b> Heavily buried (50-70% burial)  <b>Condition:</b> Good condition. No lateral displacement or damage observed. Flanges and bolts are intact. Majority of bracelet anodes are damaged. Several field joints are damaged. Anode depletion between 25-30%.	<b>Note:</b> Flowline section from KP 2.061 to riser spool will remain (approx. 59m) until future decommissioning at EOFL. Plug inserted at KP 2.061 to retain treated seawater.
Production 14" Rigid Steel Flowline  AP2 Flowline: Cut and plug location at KP 2.061 to riser spool tie-in	1	Total length: ~59m  Outside diameter (incl coatings): ~447.6 mm  Inside diameter (incl	Total Weight: 17.9 Te  <b>Linepipe:</b> Carbon steel: 7.1 Te Stainless steel: 1.4 Te	<b>Linepipe:</b> 14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)  <b>External Coatings:</b> 6 mm thickness 3 layer polypropylene (3LPP)	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm).  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater.  <b>Burial:</b> Heavily buried (50-70% buried)  <b>Condition:</b> Good condition.	No  <b>Note:</b> Flowline section from KP 2.061 to riser spool will remain until future decommissioning at EOFL. Plug inserted at cut location to retain treated seawater.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
		liner): ~321 mm  Internal Volume: 4.8 m <sup>3</sup>	<b>External Coatings:</b> 3LPP: 0.4 Te Concrete: 8.7 Te  <b>Field joints:</b> PU: 0.1 Te HSS: <0.1 Te  <b>Anodes –</b> 0.2 Te	40 mm thickness concrete weight coating  <b>Field joints:</b> 40 mm polyurethane (PU) foam infill 2.5 mm heat shrink sleeve  <b>Anodes:</b> Aluminium-Zinc-Indium Alloy		
Production 14" Rigid Steel Flowline  AP2 Flowline: Midline Spool	1	Total length: ~84 m  Outside diameter (incl coatings): ~466.6 mm  Inside diameter (incl cladding): ~321 mm  Internal Volume: 6.8 m <sup>3</sup>	Total Weight: 33.0 Te  <b>Linepipe:</b> Carbon steel: 17.3 Te Stainless steel: 2.1 Te  <b>External Coatings:</b> 3LPP: 0.5 Te Neoprene: 0.1 Te Concrete: 13.0 Te	<b>Linepipe:</b> 23.8 mm carbon steel (Grade 415) 3 mm stainless steel internal cladding (UNS S31603)  <b>External Coatings:</b> 6 / 9 mm thickness 3 layer polypropylene (3LPP) 11 mm thickness neoprene 40 mm thickness concrete weight coating	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater, and pocket of trapped hydrocarbons (volume included in flowline above).  <b>Burial:</b> Generally buried with exposed spanning spool bends.  <b>Condition:</b> Good condition.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
<p>Production 14" Rigid Steel Flowline</p> <p>AP3 Flowline: Cut and plug location near flange at riser spool tie-in</p>	1	<p>Total length: ~1.529 km</p> <p>Outside diameter (incl coatings): ~447.6 mm</p> <p>Inside diameter (incl liner): ~321 mm</p> <p>Internal Volume: 123.7 m<sup>3</sup></p>	<p>Total Weight: 460.7 Te</p> <p><b>Linepipe:</b> Carbon steel: 184.0 Te Stainless steel: 37.4 Te</p> <p><b>External Coatings:</b> 3LPP: 9.4 Te Concrete: 226.4 Te</p> <p><b>Field joints:</b> PU: 2.7 Te HSS: 0.3 Te</p> <p><b>Anodes –</b> 0.6 Te</p>	<p><b>Linepipe:</b> 14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)</p> <p><b>External Coatings:</b> 6 mm thickness 3 layer polypropylene (3LPP) 40 mm thickness concrete weight coating</p> <p><b>Field joints:</b> 40 mm polyurethane (PU) foam infill 2.5 mm heat shrink sleeve</p> <p><b>Anodes:</b> Aluminium-Zinc-Indium Alloy</p>	<p><b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.</p> <p><b>Hydrocarbon content in Treated Seawater:</b> A target of &lt; 30 ppm hydrocarbons in treated seawater.</p> <p><b>Burial:</b> Heavily buried (60-80% burial)</p> <p><b>Condition:</b> Good condition. No lateral displacement or damage observed. Flanges and bolts are intact. Majority of bracelet anodes are damaged. Several field joints are damaged. Anode depletion between 15-25%.</p>	<p>Yes</p> <p><b>Note:</b> A small section of flowline may remain depending on actual cut location until future decommissioning at EOFL. Plug inserted to retain treated seawater within any remaining section.</p>

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
Production 14" Rigid Steel Flowline  AP4 Flowline: Tie-in Flange at Wellhead Spool to cut and plug location at KP 2.693	2	Total length: ~2.610 km  Outside diameter (incl coatings): ~447.6 mm  Inside diameter (incl liner): ~321 mm  Internal Volume: 211.2 m <sup>3</sup>	Total Weight: 787.0 Te  <b>Linepipe:</b> Carbon steel: 314.1 Te Stainless steel: 63.8 Te  <b>External Coatings:</b> 3LPP: 16.0 Te Concrete: 386.4 Te  <b>Field joints:</b> PU: 4.5 Te HSS: 0.6 Te  <b>Anodes –</b> 1.6 Te	<b>Linepipe:</b> 14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)  <b>External Coatings:</b> 6 mm thickness 3 layer polypropylene (3LPP) 40 mm thickness concrete weight coating  <b>Field joints:</b> 40 mm polyurethane (PU) foam infill 2.5 mm heat shrink sleeve  <b>Anodes:</b> Aluminium-Zinc-Indium Alloy	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater, and pockets of trapped hydrocarbons – 1.6 m <sup>3</sup> (liquid) and 12.0 m <sup>3</sup> (gas, equivalent volume at surface conditions).  <b>Burial:</b> Heavily buried (60-80% burial)  <b>Condition:</b> Good condition. Several bracelet anodes, field joints and weight coating are damaged.	Yes  <b>Note:</b> Flowline section from KP 2.693 to riser spool will remain until future decommissioning at EOFL. Plug inserted at cut location to retain treated seawater.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
Production 14" Rigid Steel Flowline  AP4 Flowline: Cut and plug location at KP 2.693 to riser spool tie-in	1	Total length: ~202m  Outside diameter (incl coatings): ~447.6 mm  Inside diameter (incl liner): ~321 mm  Internal Volume: 4.8 m <sup>3</sup>	Total Weight: 61.3 Te  <b>Linepipe:</b> Carbon steel: 24.3 Te Stainless steel: 4.9 Te  <b>External Coatings:</b> 3LPP: 1.2 Te Concrete: 29.9 Te  <b>Field joints:</b> PU: 0.4 Te HSS: 0.04 Te  <b>Anodes –</b> 0.5 Te	<b>Linepipe:</b> 14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)  <b>External Coatings:</b> 6 mm thickness 3 layer polypropylene (3LPP) 40 mm thickness concrete weight coating  <b>Field joints:</b> 40 mm polyurethane (PU) foam infill 2.5 mm heat shrink sleeve  <b>Anodes:</b> Aluminium-Zinc-Indium Alloy	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater, and pocket of trapped hydrocarbons – 0.1 m <sup>3</sup> (liquid) and 0.1 m <sup>3</sup> (gas, equivalent volume at surface conditions).  <b>Burial:</b> Heavily buried (60 – 80% burial)  <b>Condition:</b> Good condition. Some coating damage.	No  <b>Note:</b> Flowline section from KP 2.693 to riser spool will remain until future decommissioning at EOFL. Plug inserted at cut location to retain treated seawater.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
Production 14" Rigid Steel Flowline  AP4 Flowline: Midline Spool	1	Total length: ~83 m  Outside diameter (incl coatings): ~466.6 mm  Inside diameter (incl cladding): ~321 mm  Internal Volume: 6.8 m <sup>3</sup>	Total Weight: 32.6 Te  <b>Linepipe:</b> Carbon steel: 17.1 Te Stainless steel: 2.0 Te  <b>External Coatings:</b> 3LPP: 0.5 Te Neoprene: <0.1 Te Concrete: 12.9 Te	<b>Linepipe:</b> 23.8 mm carbon steel (Grade 415) 3 mm stainless steel internal cladding (UNS S31603)  <b>External Coatings:</b> 6 / 9 mm thickness 3 layer polypropylene (3LPP) 11 mm thickness neoprene 40 mm thickness concrete weight coating	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater, and pocket of trapped hydrocarbons (volume included in flowline above).  <b>Burial:</b> Heavily buried with exposed spool bends.  <b>Condition:</b> Good condition.	Yes
<b>Electro-Hydraulic Umbilical (EHU)</b>						
Electro-Hydro Umbilical (EHU) <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Total length: ~7.264 km  Outside diameter: ~122 mm  Number of hose cores: 7 Number of electrical cores: 4	142.4 Te  <b>Armour wire:</b> Galvanised carbon steel  <b>Electric cable:</b> Copper conductor	Inner and outer sheath: Thermoplastic MDPE, LDPE  <b>Armour wire:</b> Galvanised carbon steel  <b>Electric cable:</b> Copper conductor	<b>Status (at commencement of Petroleum Activity):</b> Connected between facility and UTA. Depressurised. Remains on seabed with residual hydraulic fluid: <ul style="list-style-type: none"> <li>MEG – 1.3 m<sup>3</sup>,</li> <li>MacDermid HW443 (water based) – 3.9 m<sup>3</sup>.</li> </ul> <b>Burial:</b> Heavily buried (80%-100% burial) with some localised scour areas.  <b>Condition:</b> Good condition. No damage or degradation observed.	Yes  <b>Note:</b> Umbilical sections from cut location to topsides termination will remain until future decommissioning at EOF. Umbilicals will be capped.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
				Hydraulic hoses: Nylon 11 Besno P40 TL0, MDPE		
Electro-Hydro Umbilical (EHU) <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Total length: ~608m  Outside diameter: ~122 mm  Number of hose cores: 7  Number of electrical cores: 4	9.7 Te	Inner and outer sheath: Thermoplastic MDPE, LDPE  Armour wire: Galvanised carbon steel  Electric cable: Copper conductor  Hydraulic hoses: Nylon 11 Besno P40 TL0, MDPE	<b>Status (at commencement of Petroleum Activity):</b> Connected between facility and UTA. Depressurised. Remains on seabed with residual hydraulic fluid: <ul style="list-style-type: none"> <li>MEG – 0.1 m<sup>3</sup>,</li> <li>MacDermid HW443 (water based) – 0.3 m<sup>3</sup>.</li> </ul> <b>Burial:</b> Heavily buried (80%-100% burial) with some localised scour areas.  <b>Condition:</b> Good condition. No damage or degradation observed.	No  <b>Note:</b> This umbilical section from cut location to topsides termination will remain until future decommissioning at EOFL. Umbilical will be capped to retain hydraulic fluids.
<b>Spools and Flying Leads</b>						
Production 10" Wellhead Spools <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Length: ~157.6 m  Outer Diameter: ~291 mm  Internal Volume: 6.1 m <sup>3</sup>	Total Weight: 26.1 Te  Stainless steel: 24.9 Te 3LPP: 1.1 Te Neoprene: <0.1 Te	22Cr Duplex stainless steel  9 mm thickness 3 layer polypropylene (3LPP)  11 mm thickness neoprene	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Small section removed and end plugged. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater  <b>Burial:</b> Varies from spanning to full burial. Spools sit under a stabilisation mattress.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
					<b>Condition:</b> Good condition. Covered in either marine growth or sediment. No damage observed.	
Production 14" Make-up Spool <ul style="list-style-type: none"> <li>AP2</li> </ul>	1	Total length: ~48.6 m  Outside diameter (incl coatings): ~447.6 mm  Inside diameter (incl cladding): ~321 mm  Internal Volume: 3.9 m <sup>3</sup>	Total Weight: 24.9 Te  <b>Linepipe:</b> Carbon steel: 5.8 Te Stainless steel: 1.2 Te  <b>External Coatings:</b> 3LPP: 0.3 Te Neoprene: <0.1 Te Concrete: 7.2 Te  Anodes – 1.6 Te	<b>Linepipe:</b> 14.3 mm carbon steel (Grade 415) 3 mm stainless steel internal cladding (UNS S31603)  <b>External Coatings:</b> 6 / 9 mm thickness 3 layer polypropylene (3LPP) 11 mm thickness neoprene 40 mm thickness concrete weight coating	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm).  <b>Hydrocarbon content in Treated Seawater:</b> A target of < 30 ppm hydrocarbons in treated seawater.  <b>Burial:</b> Heavily buried.  <b>Condition:</b> Good condition.	Yes
Production 14" Riser Spools <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Total length: ~234 m  Outside diameter (incl coatings): ~466.6 mm	Total Weight: 66 Te  <b>Linepipe:</b> Carbon steel: 48.3 Te Stainless steel: 5.7 Te	<b>Linepipe:</b> 23.8 mm carbon steel (Grade 415) 3 mm stainless steel internal liner (316L)  <b>External Coatings:</b>	<b>Status (at commencement of Petroleum Activity):</b> Isolated from production wells. Depressurised, flushed and flooded with treated seawater (Roemex 450 ppm). Flushing will be conducted under the Angel Operations Environment Plan, which is currently schedule for Q3 2025.  <b>Hydrocarbon content in Treated Seawater:</b>	No  Riser spools will remain until future decommissioning at EOFL, given their location adjacent to live infrastructure.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
		Inside diameter (incl liner): ~321 mm  Internal Volume: 6.8 m <sup>3</sup>	<b>External Coatings:</b> 3LPP: 1.5 Te Neoprene: 0.1 Te Concrete: 16.1 Te	6 / 9 mm thickness 3-layer polypropylene (3LPP) 11 mm thickness neoprene 40 mm thickness concrete weight coating	A target of < 30 ppm hydrocarbons in treated seawater, and pocket of trapped hydrocarbons – 0.2 m <sup>3</sup> (liquid) and 1.3 m <sup>3</sup> (gas, expanded at sea surface). <b>Burial:</b> Exposed spool bends <b>Condition:</b> Good condition.	
Electrical Flying Leads (EFLs) • AP2 • AP3 • AP4	6	Length: ~150m	~ 0.17 Te	Polyethylene Steel Copper Dielectric oil	<b>Status (at commencement of Petroleum Activity):</b> Disconnected from XT. Connected to UTA.  <b>Burial:</b> Predominately buried with some sections below mattresses. Some elevated sections.  <b>Condition:</b> Generally good condition. Some debris identified. Damage to AP2 EFL external sheath.	Yes
Hydraulic Flying Leads (HFL) • AP2 • AP3 • AP4	3	Length: ~65 m	~ 0.76 Te	Thermoplastic Polyethylene inner and outer sheath Polymer base fillers	<b>Status (at commencement of Petroleum Activity):</b> Disconnected from XT. Connected to UTA. • MEG <0.1 m <sup>3</sup> , • MacDermid HW443 (water based) <0.1 m <sup>3</sup> .  <b>Burial:</b> Predominately buried with some sections below mattresses. Some elevated sections.  <b>Condition:</b> Generally good condition. Some debris identified.	Yes
<b>Auxiliary Structures</b>						
Umbilical Termination Assembly (UTA)	3	Length: ~2.7 m Width: ~1.5 m Height: ~1.3 m	~4.5 Te	Carbon steel Stainless steel Inconel connections	<b>Status (at commencement of Petroleum Activity)::</b> Remains on seabed as installed. <b>Burial:</b> No excessive scour.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition <sup>2</sup>	Removal under this EP?
<ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>					<b>Condition:</b> Good condition, no sign of damage. Lifting points easily accessible. CP indicates sufficient corrosion protection. Connections are intact and in good condition.	
Umbilical Termination Assembly (UTA) Foundation <ul style="list-style-type: none"> <li>AP2</li> <li>AP3</li> <li>AP4</li> </ul>	3	Length: ~5 m Width: ~3.5 m Height: ~2.5 m	~15 Te	Carbon steel	<b>Status (at commencement of Petroleum Activity)::</b> Remains as installed. <b>Burial:</b> Partially buried, mudmat not visible <b>Condition:</b> Good condition, no damage identified.	Yes
<b>Stabilisation Materials</b>						
Stabilisation Mattresses (drill centres – wellhead spools, flying leads, EHU)	8	6m x 2.5m x 0.3m (6 off)  5m x 2.5m x 0.3m (2 off)	~ 52 Te in total	Concrete Polyurethane	<b>Status (at commencement of Petroleum Activity)::</b> Remains on seabed as installed. <b>Burial:</b> Not buried. <b>Condition:</b> Good overall condition. No damage.	Yes
AP4 flowline grout mattress	1	Length: ~1.7 m Width: ~1.7 m Height: ~0.1 m	0.6 Te	Grout	<b>Status (at commencement of Petroleum Activity)::</b> Remains on seabed as installed. <b>Burial:</b> Partially buried. <b>Condition:</b> Good overall condition.	Yes
EHU / EFL stabilisation sandbags	5	Length: ~0.4 m Width: ~0.3 m Height: ~0.5 m	~0.1 Te in total	Sand	<b>Status (at commencement of Petroleum Activity)::</b> Remains on seabed as installed. <b>Burial:</b> Partially buried. <b>Condition:</b> Good overall condition.	Yes

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### 3.9 Infrastructure Removal Activities

#### 3.9.1 Flowline Recovery (including midline and makeup spools)

The flowline will be recovered by cutting it into sections on the seabed and recovering the sections. Sediment relocation may be required to de-bury the flowline, which would be done using a mass flow excavator (MFE) deployed from and recovered to a vessel. Relocated sediment will be distributed around the flowline. The flowline will be pressurised by the static head of the treated seawater fill. Pressure between the flowline and the environment will be equalised during the cutting process, resulting in the flow of treated seawater out of the flowline, until pressure is equalised.

Using a winch or crane, a cutting tool will be deployed to the seabed. An ROV will be used to assist deployment and position the cutting tool on the flowline. The cutting tool will cut the flowline and then reposition approximately 11-12 m along the flowline for the next cut location. An ROV will monitor and confirm positioning throughout the cutting process. This cutting process is repeated along the length of the flowline (or discrete sections of the flowline). Cuts should be made away from the field joints to avoid areas of potential degradation. Cuts may be made at larger distances across the flowline (up to 25m apart) for optimisation to reduce vessel duration.

The cutting tool is planned to be a hydraulic shear cutting tool (Figure 3-5). Woodside has successfully used a hydraulic shear cutting tool to section the Griffin gas export flowline for removal. However, a drop saw, or diamond wire saw may also be used.

A grab will be deployed from the vessel using a crane or a winch to recover the flowline sections. An ROV will monitor for engagement between the grab and the flowline. The vessel crane will then lift the pipe section clear of the seabed and recover through the water column. The contents of the flowline will freely drain into the water column. The flowline section will be recovered to the vessel and laid horizontally in a storage area on the deck (Figure 3-6). This operation will be repeated until all sections have been recovered to the vessel deck, with the vessel transiting to port for unloading as necessary.

If required, marine growth cleaning may be performed on the vessel using high pressure water jets, in parallel with line recovery steps. The marine growth that is removed will be discharged to sea during the cleaning process.

Planned discharges during flowline removal include:

- Seawater treated with Roemex with a target residual oil-in-water content of less than 30 ppm.
- Hydrocarbons – total 2.6 m<sup>3</sup> liquid condensate and <0.1 m<sup>3</sup> of gas trapped within the rigid flowlines will be released to sea (this equates to ~19.2 m<sup>3</sup> gas, equivalent volume at surface conditions).
- Small quantities of concrete spall (if cut with shears).
- Small quantities of concrete spall and steel swarf (if cut using drop saw or diamond wire saw).
- Traces of scale dislodged from within the flowline (if present).
- Marine growth removed from the flowline.

Refer to Section 3.10 for information on disposal arrangements for the recovered flowline.



Figure 3-5: Example shear cutting tool

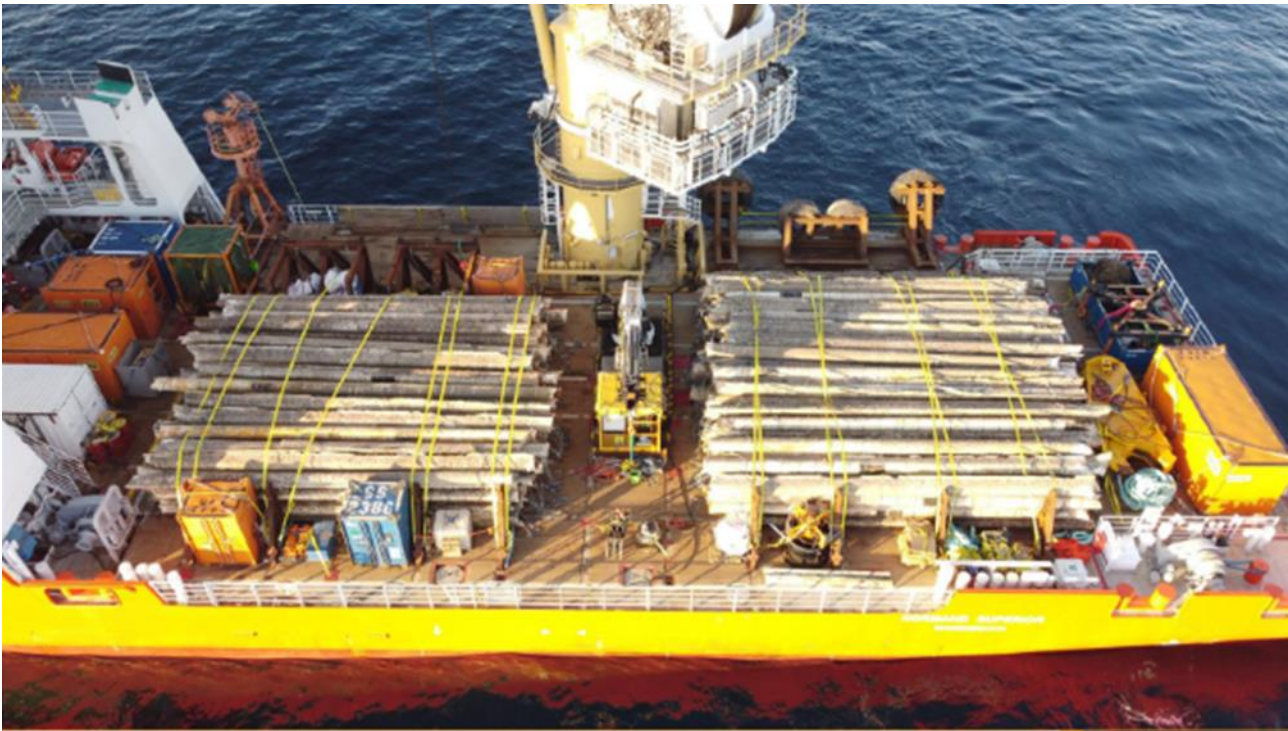


Figure 3-6: Indicative construction vessel deck layout with recovered subsea equipment

3.9.2 Umbilical Recovery

EHU will be recovered to a vessel either onto reels or cut into sections either subsea or on the back deck of the vessel. Recovery will be undertaken using a vessel crane and associated equipment.

ROVs will be used to support the activities, including cutting and/or disconnecting infrastructure from other equipment and placing infrastructure (e.g., jumpers) into ROV baskets to allow recovery. ROVs will also be used to perform water jetting around the base of some infrastructure (e.g., UTAs) to avoid any suction resistance or to remove marine growth, relocate sediment.

If required, marine growth cleaning may be performed on the vessel using high pressure water jets, in parallel with line recovery steps. The marine growth that is removed will be discharged to sea during the cleaning process.

Planned discharges during umbilical removal include:

- hydraulic fluid in the umbilical (1.3 m<sup>3</sup> MEG and 3.9 m<sup>3</sup> MacDermid HW443 (water based))
- marine growth removed from the umbilical

Refer to Section 3.10 for information on disposal arrangements for the recovered umbilical.

### 3.9.3 UTA Structure and Foundation Recovery

The UTA structures and their associated foundations may be lifted from the seabed either directly or using a subsea basket to facilitate recovery. An ROV will be deployed to depth from the vessel to verify integrity for lift direct to vessel or subsea basket.

If required, marine growth cleaning may be performed on the vessel using high pressure water jets, in parallel with line recovery steps. The marine growth that is removed will be discharged to sea during the cleaning process.

Planned discharges during umbilical UTA / foundation removal include:

- hydraulic fluid in the umbilical (volumes addressed above)
- marine growth removed from the UTA

Refer to Section 3.10 for information on disposal arrangements for the recovered UTA structures and foundations.

### 3.9.4 Rigid Spools Recovery

The wellhead spools will be cut into sections on the seabed using a cutting tool (e.g., hydraulic shears, diamond wire saw, drop saw, etc.) before being removed. An ROV will monitor and confirm positioning throughout the process. This cutting process is repeated along the length of the spool. Once all sections are cut, the cutting tool will be recovered to the vessel.

The vessel crane will deploy a mechanical grab to the first cut spool section location. An ROV will monitor grab position ensuring the grab successfully engages with the pipe. The vessel crane will then lift the spool section clear of the seabed and recover through the water column. The spool section will be recovered to, and laid on, the vessel deck in a corral storage area. This operation will be repeated until all sections have been recovered to the vessel deck.

Marine growth cleaning (if required) will be performed using high pressure water jets and returned to the sea.

Planned discharges rigid spools recovery include:

- seawater treated with Roemex with a target residual oil-in-water content of < 30 ppm from within the spools
- small quantities of steel swarf
- traces of scale dislodged from within the production spool (if present)
- marine growth removed from the spool

Refer to Section 3.10 for information on disposal arrangements for the recovered spools.

### 3.9.5 Flying Leads Recovery

The flying leads may be cut into sections on the seabed using a cutting tool (e.g., hydraulic shears, diamond wire saw, drop saw, etc.) and placed into subsea baskets. An ROV will monitor and confirm positioning throughout the process.

Marine growth cleaning (if required) will be performed using high pressure water jets and returned to the sea.

Planned discharges flying lead recovery include:

- small quantities of hydraulic fluid
- marine growth removed from the flying leads.

Refer to Section 3.10 for information on disposal arrangements for the recovered flying leads.

### 3.9.6 Secondary Stabilisation Recovery

Secondary stabilisation features, such as sandbags, mattresses, and grout bags, have been used to provide stability for EFLs and HFLs between connection points (UTA to XT).

An ROV will be deployed to locate the bags and mattresses. Mattress recovery tooling will be deployed to recover the concrete mattresses. Smaller stabilisation items may be recovered using a basket.

The vessel crane will lower the basket to a pre-determined position on the seabed. ROV to pick up secondary stability features and place them into the subsea basket. This operation will be repeated for all material or until the subsea basket's capacity is met.

The subsea basket will be reconnected to the vessel crane to be lifted through the water column and stored on board at a predesignated area of the vessel.

Planned discharges during secondary stability material recovery may include release of marine growth cleaned from the material at the surface.

Refer to Section 3.10 for information on disposal arrangements for the recovered secondary stabilisation material.

### 3.9.7 Debris Recovery

An ROV will be deployed to locate debris which may be recovered using a basket. Recovery of relatively small debris (e.g., cobble-sized concrete) is not feasible due to the small size, however larger debris may feasibly be recovered by ROV. This may reduce man-made material left on the seabed, potentially reducing the environmental impact. An ROV will be available during the Angel subsea infrastructure removal campaign, which could identify and recover relatively large (300 mm x 300 mm) debris created during removal.

The vessel crane will lower the basket to a pre-determined position on the seabed. ROV to pick up debris items and drop them into the subsea basket. This operation will be repeated for all material or until the subsea basket's capacity is met.

The subsea basket will be reconnected to the vessel crane to be lifted through the water column and stored on board at a predesignated area of the vessel.

Refer to Section 3.10 for information on disposal arrangements for the recovered debris material.

### 3.9.8 Additional Potential Activities

#### 3.9.8.1 Wellhead Severance and Removal

Removal of the AP2, AP3 and AP4 well infrastructure is base case under this EP, with optional removal under the North West Shelf Plug and Abandonment and TPA03 Well Intervention EP.

The wellheads are planned to be cut below the seabed using a mechanical cutting method at or below the mudline. Woodside has successfully used the diamond wire saw in the integrated wellhead removal program to cut wellheads at the mudline. Using this process final wellhead heights were measured to be within



150mm either side of the mudline. Wellhead cutting methodology is described in Table 3-10. Once the wellhead is cut, the wellhead will be recovered to the vessel and transported to shore for disposal.

**Table 3-10: Wellhead Cutting Methodology**

Method	Description	Vessel Type
External cutting using diamond wire saw	Method uses a hydraulically driven motor and pulley system to operate an industrial diamond cutting wire via a vessel or ROV. Clamps to the outside of wellhead at the base and cuts externally. Suitable for wells within all water depths. Cut at or below mudline, recent success in the field indicates cuts can be made within 150mm either side of the mudline.	Subsea support vessel with ROV capability

### 3.9.8.2 Flying Leads Disconnection

If plug and abandonment has not been performed for the Angel wells, then flying leads will be disconnected from the Xmas trees using suitable tooling. Protective caps will be installed on the flying lead connection points on the Xmas trees to preserve the trees.

## 3.10 Waste Management

Non-hazardous waste materials will be stored onboard the project vessels in suitable containers (segregated from hazardous materials) for transport to shore for disposal/recycling in accordance with local regulations.

All hazardous waste generated will be document and tracked, segregated from other waste streams, and stored in suitable containers. Recyclable hazardous wastes, such as oils and batteries, will be stored separately from non-recyclable materials. All wastes will be disposed of onshore at a licenced facility.

All waste streams will be classified and managed in accordance with applicable legislative requirements, or in accordance with international guidance where applicable, for example:

- Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1989, which implements the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the Basel Convention)
- WA Environmental Protection (Controlled Waste) Regulations 2004
- International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL Convention)
- International Finance Corporation: EHS Guidelines – Environmental Waste Management.

The recovered infrastructure will be managed through Woodside's contracting strategy which will include an infrastructure disposal strategy where waste management solutions will be assessed against the principles of the waste management hierarchy described in Sections 6.7 and 6.8.

Options for plastics include identifying potential recycling, upcycling, waste to energy opportunities. Pathways are subject to inspection and sampling of the material once received at the onshore laydown site. Where it is deemed no other feasible alternative exists, material requiring landfill will be disposed of at an appropriate licensed facility after sampling is conducted to determine contaminant levels where appropriate. Further details are provided in Sections 6.8.5 and 7.2.5.

As NORMs/mercury contamination is expected (Section 3.7.2.2), handling and disposal of the infrastructure includes procedures for dealing with contaminants onshore and offshore, should any be detected (Section 6.8.5).

## 4. DESCRIPTION OF THE EXISTING ENVIRONMENT

### 4.1 Overview

In accordance with Regulations 13(2) and 13(3) of the Environment Regulations, this section describes the existing environment that may be affected by the activity (planned and unplanned, 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 potential spatial extent of surface and in-water hydrocarbons at concentrations above ecological impact thresholds, in the event of the worst-case credible spill. The ecological impact thresholds used to delineate the EMBA are defined in Section 6.8.1.2. The worst-case credible spill scenario for this EP is the loss of marine diesel in the event of a vessel collision.

Woodside recognises that hydrocarbons may be visible beyond the EMBA at lower concentrations than the ecological impact thresholds defined in Section 6.8.1.2. These visible hydrocarbons are not expected to cause ecological impacts. In respect of this, an additional socio-cultural EMBA is defined, as the potential spatial extent within which social-cultural impacts may occur from changes to the visual amenity of the marine environment. Receptors relevant to the socio-cultural EMBA include cultural values and heritage, Commonwealth and State marine protected areas (MPAs), National and Commonwealth Heritage Listed places, areas of tourism and recreation, and commercial and traditional fisheries. For this EP, the socio-cultural EMBA for surface hydrocarbons encompasses an area fully within the boundaries of the EMBA for ecological impacts. The EMBA and socio-economic EMBA are shown in Figure 4-1 and described in Table 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 EMBA for surface and in-water hydrocarbons**

Hydrocarbon type	EMBA <sup>1</sup>	Socio-cultural EMBA <sup>1</sup>	Planning area for scientific monitoring
Surface	10 g/m <sup>2</sup> 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 <sup>2</sup> This represents a wider area where a visible sheen may be present on the surface and, therefore, the concentration at which socio-cultural 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-cultural receptors are associated with ecological impacts. Therefore, dissolved hydrocarbons at this threshold also represent the level at which socio-cultural 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). This area is described further in Appendix G: Figure 5-1.  In the event of a spill, DNP will be notified of AMPs which may be contacted by hydrocarbons at this threshold Table 7-5.
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-cultural receptors are associated with ecological impacts. Therefore, entrained		



Hydrocarbon type	EMBA <sup>1</sup>	Socio-cultural EMBA <sup>1</sup>	Planning area for scientific monitoring
	hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur.		
Shoreline	100 g/m <sup>2</sup> This represents the threshold that could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat.	10 g/m <sup>2</sup> 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

<sup>1</sup> Further details including the source of the thresholds used to define the EMBA in this table are provided in Section 6.8.1.2.

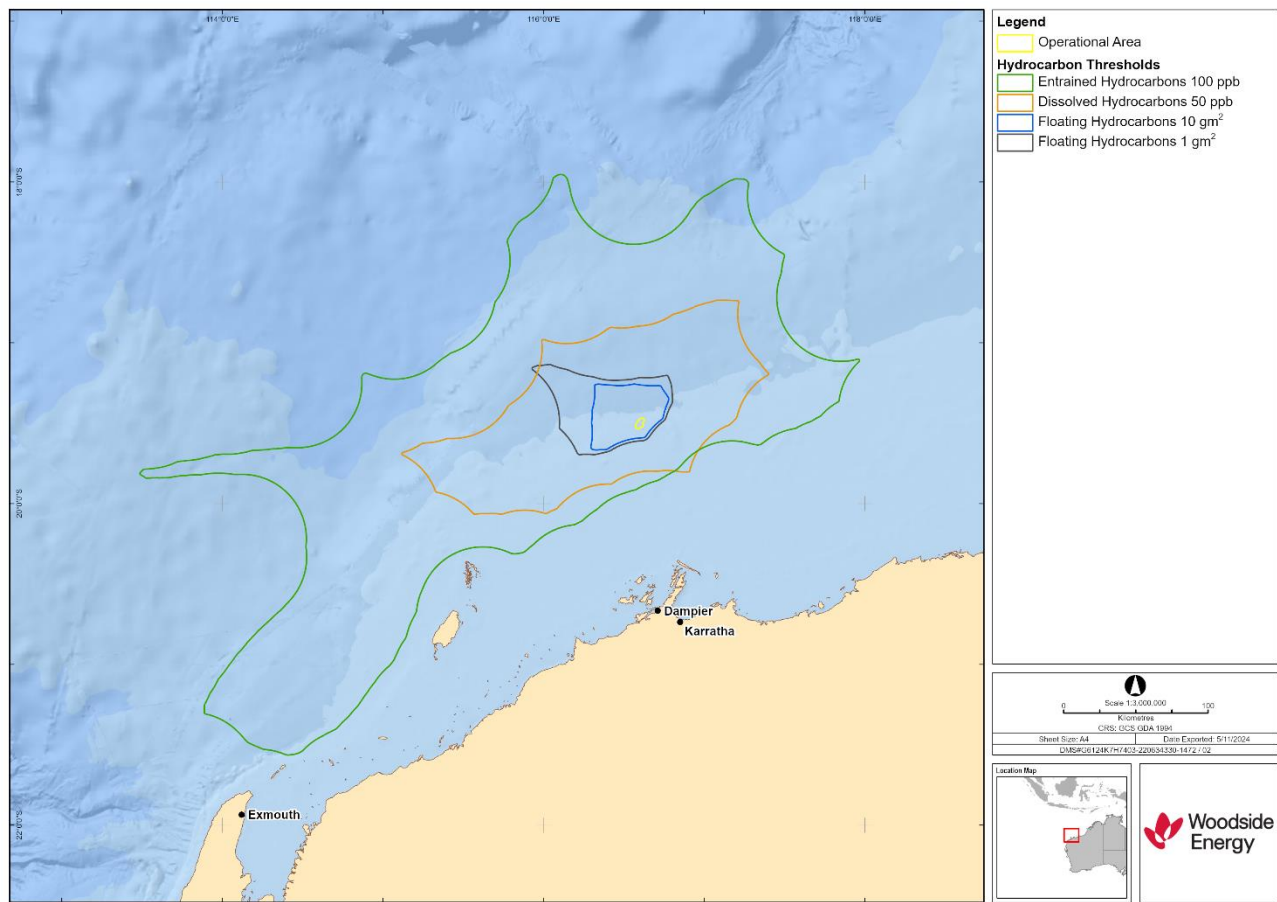


Figure 4-1: Environment that may be affected by the Petroleum Activity

## 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 of approximately 75 m to 85 m. Within the NWMR, the Operational Area lies within the NWS Province (Figure 4-2)). Woodside's Existing Environment (Appendix C) summarises the characteristics for the relevant marine bioregions.

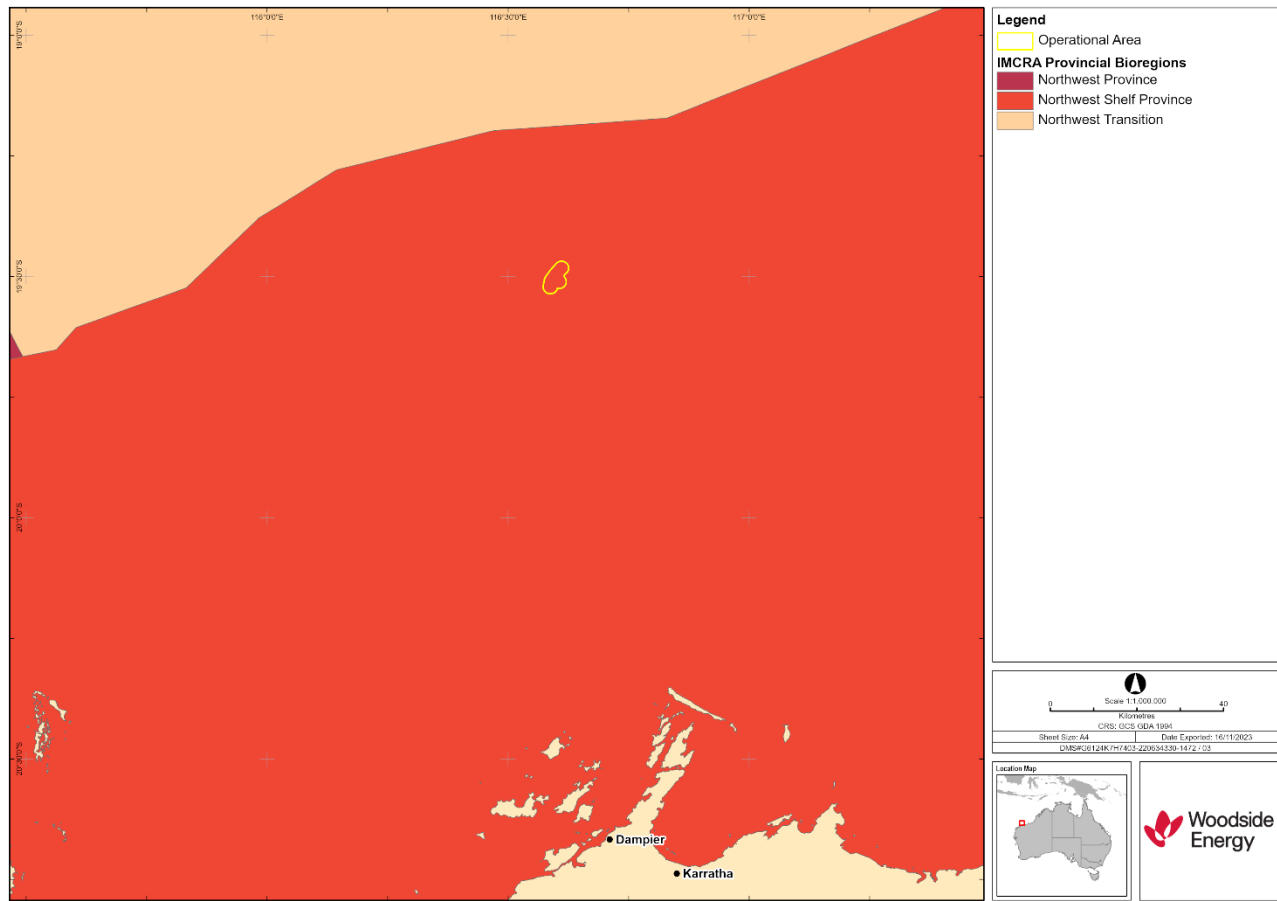
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**Figure 4-2: Location of the Operational Area and relevant marine bio-regions**

### 4.3 Matters of National Environmental Significance (EPBC ACT)

Table 4-2 summarises the matters of national environmental significance (MNES) overlapping the Operational Area and EMBA, according to Protected Matters Search Tool (PMST) results (Appendix D). It should be noted that the EPBC Act PMST is a general database that identifies areas in which protected species have the potential to occur. The PMST conducts searches to determine the presence/absence of MNES based on a conservative grid-based search function. Marine areas (>30 km) from the coast use 32 km x 32 km grid cells to determine the spatial overlap with listed MNES. Accordingly, the PMST report (Appendix D) can indicate the presence of MNES, that do not actually intersect with the Operational Area or EMBA. To ensure the accurate consideration of any impacts from the Angel subsea decommissioning activities on MNES, shapefiles (provided for by DCCEE) have been assessed using Geographic Information System software to determine the actual presence and distance to MNES.

Additional information on these MNES are provided in the subsequent sections of this chapter and described in detail in Appendix D.

**Table 4-2: Summary of relevant MNES identified by the EPBC Act Protected Matters Search Tool (PMST) as potentially occurring within the Operational Area and EMBA**

MNES	Number of MNES in Operational Area	Number of MNES in EMBA	Relevant section
World Heritage Properties	0	1	Section 11.2 of the Master Existing Environment (Appendix C) and Section 4.9.
National Heritage Places	0	1	
Wetlands of International Importance (Ramsar)	0	0	

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MNES	Number of MNES in Operational Area	Number of MNES in EMBA	Relevant section
Commonwealth Marine Area	1	2	Not relevant to this EP
Listed Threatened Ecological Communities	0	0	
Listed Threatened Species	23	29	Sections 3 to 8 of the Master Existing Environment (Appendix C) and Section 4.6
Listed Migratory Species	35	47	

#### 4.4 Physical environment

The Operational Area lies in waters approximately 75 m to 85 m deep on the continental shelf (Figure 4-3).

The bathymetry within the Operational Area is generally flat, which is consistent with the broader NWS Province shelf region (Baker *et al.* 2008). The seabed within the EMBA has a gentle (0.05°) seaward gradient, extending to a relatively steep outer slope approximately 200 to 300 km offshore in water depths of around 200 m (Dix *et al.* 2005). The continental slope then descends more rapidly from the shelf edge to depths greater than 1,000 m to the north-west (James *et al.* 2004).

Appendix C provides a summary of the physical characteristics of the environment within the EMBA.

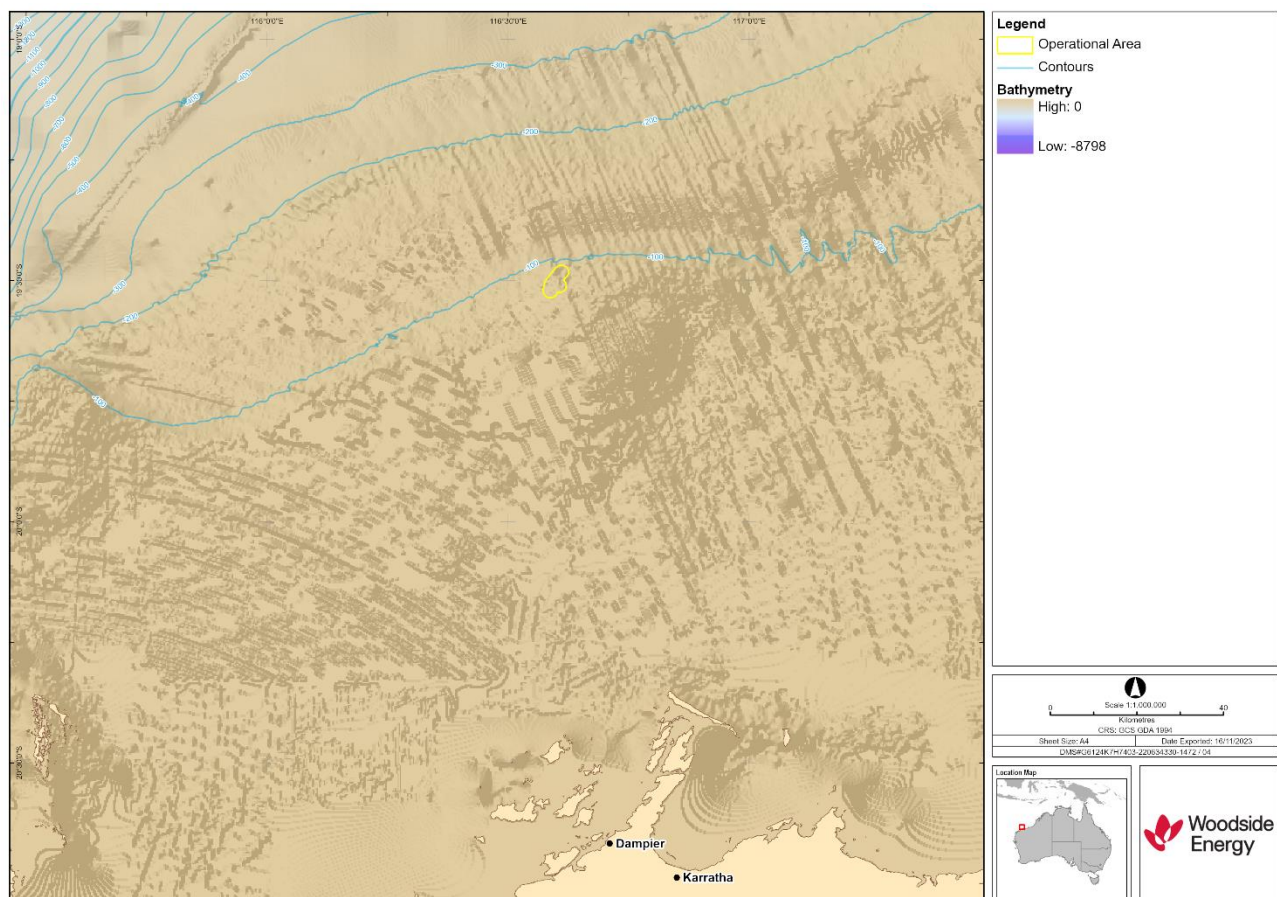


Figure 4-3: Bathymetry of the Operational Area

#### 4.5 Habitats and biological communities

Marine sediments in the outer NWS Province are relatively homogenous and are typically dominated by sands and a small portion of gravel (Baker *et al.* 2008). Fine sediment size classes (e.g. silt and muds)

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increase with proximity to the shoreline and the shelf break but are less prominent in the intervening continental shelf (Baker *et al.* 2008). Carbonate sediments typically account for the bulk of sediment composition, with both biogenic and precipitated sediments present on the outer shelf (Dix *et al.* 2005). Beyond the shelf break, the proportion of fine sediments increases along the continental slope towards the Exmouth Plateau and the abyssal plain (Baker *et al.* 2008). Sedimentary types in the Operational Area are expected to be broadly consistent with those in the NWS Province and can be inferred from Woodside sampling programs undertaken at Glomar Shoals and the Goodwyn A (GWA) platform (Australian Institute of Marine Science (AIMS) 2014a, BMT Oceanica 2015a). The majority of sediments in the Operational Area are expected to be comprised primarily of fine sands, very fine sands, and silt, similar to those analysed at the Glomar Shoals KEF (AIMS 2014a, BMT Oceanica 2015a).

Glomar Shoals is a large (215 km<sup>2</sup>) submerged littoral feature located approximately 93 km north of the Dampier Archipelago on the outer western shelf and comprises complex bathymetrical features. Approximately 0.01% of the Glomar Shoals KEF overlaps the Operational Area (Figure 4-10), in water depths between 75 m to 77 m (Section 4.7).

Glomar Shoals rises gently on the south-west side of the reef from 80 m depth to a single plateau at 40 m depth. The north-eastern side of the reef rises steeply from 70 m to 40 m depth. The shoals feature is relatively shallow, with water depths reaching 22 m to 28 m at its shallowest point. The shoal has relatively high biological productivity and has been identified as a KEF of the NWMR (Falkner *et al.* 2009).

Benthic habitats of Glomar Shoals vary with depth and are characterised by coarse unconsolidated sediment at depths greater than 60 m to hard substrate supporting benthic communities comprising sparse hard and soft corals sponges and macroalgae at depths < 40 m. Total cover of benthic taxa (hard coral, soft coral, sponges, and other benthic biota) is highest at depths < 40 m and decreases with depth (Wahab, 2018). At depths of 60 m to 80 m, benthic cover is low (approximately 2% benthic biota cover), and at depths greater than 80 m benthic cover is barely present with baseline survey data indicating 0.1% cover of benthic biota. The results of a baseline survey and habitat modelling undertaken by AIMS in 2013 indicate that the portion of the Glomar Shoals KEF overlapping the Operational Area is composed of soft sediment seabed and not areas of higher, phototrophic benthic biota (AIMS, 2014). Structurally complex biodiverse benthic habitats are mainly found within the north-eastern portion of Glomar Shoals KEF.

Glomar Shoals KEF is considered to support a greater diversity of habitats than the surrounding areas due to the higher proportion of complex bathymetrical features associated with the shoals, compared to the surrounding areas (Falkner *et al.* 2009). On a regional scale, the Glomar Shoals KEF is also considered to be an important area for a number of commercial and recreational fish species. Glomar Shoals feature is recognised for its high regional biodiversity and productivity and is considered a unique habitat type at the local scale (SEWPaC, 2012). This remote, shallow water area represents a regionally unique habitat and is likely to play an important role in the productivity of the Pilbara region (AIMS 2014a, Wahab *et al.* 2018).

The benthic habitats of Glomar Shoals KEF are considered pristine and host regionally distinct ecological communities. The abundance and diversity of demersal fish communities at Glomar Shoals are influenced by the seabed habitat type, with genera associated with sandy habitats common, including threadfin breams (*Nerripteris* spp.) and triggerfish (*Abalisters* spp.). Species richness and abundance are influenced by habitat depth, complexity and the degree of coral cover. In general, the fish abundance and diversity of Glomar Shoals KEF are considered comparable with other reefs, submerged shoals and banks in the region, although less diverse and abundant than fish assemblages at Rankin Bank (Wahab *et al.* 2018).

Other Key Ecological Features of consideration include The Ancient Coastline at 125 m depth KEF, located 2 km north of the Operational Area. The KEF is an ancient, submerged coastline with areas of hard substrate that provides habitat which supports the KEF's higher diversity and enhanced species richness relative to the surrounding area (refer to Section 4.7). The Ancient Coastline KEF is relatively poorly understood however, the following fauna is associated with the escarpment: crinoids, molluscs, echinoderms, sponges, corals, and other benthic invertebrates representative of hard substrate fauna in the region. Several discrete areas of hard substrate exist across the Ancient Coastline KEF which support sessile filter feeding communities. Although several areas with sensitive habitat and features are present within the EMBA and Operational Area, the majority of the seabed is characterised by relatively expansive areas of featureless sandy substrate.

Habitats and ecological communities within the Operational Area and EMBA are identified in Table 4-3 and described in Appendix C. For further information on KEF features and values that are relevant to or may be

impacted by the EP activities, refer to Table 4-3, Table 4-14 and the Master Existing Document (Appendix C, Table 10-1).

**Table 4-3: Habitats and communities within the EMBA**

Habitat/ community	Key locations within the EMBA
<b>Seabed characteristics</b>	
Bare/unconsolidated sediments	The offshore environment of the NWMR, where the Operational Area is located, comprises predominately of soft sediments (sandy and muddy substrata with occasional patches of coarser sediments) and sparse benthic biota.
Banks and shoals	Shoals are a significant habitat within the EMBA, and a number of submerged banks and shoals are located throughout the EMBA associated with the Southern Pilbara Island group (e.g. Outrim Patches, Penguin Bank). Key shoals include Rankin Bank. Rankin Bank is on the continental shelf and within the EMBA, approximately 107 km south-west from the Operational Area at the closest point. While not a KEF, Rankin Bank, along with Glomar Shoals, is the only large, complex bathymetrical feature on the outer western shelf of the West Pilbara and represents habitats that are likely to play an important role in the productivity of the Pilbara region (AIMS 2014a). Rankin Bank consists of three submerged shoals delineated by the 50 m depth contour with water depths of approximately 18 m to 30.5 m (AIMS 2014a). Rankin Bank represents a diverse marine environment, predominantly composed of consolidated reef and algae habitat (~55% cover), followed by hard corals (~25% cover), unconsolidated sand/silt habitat (~16% cover), and benthic communities composed of macroalgae, soft corals, sponges, and other invertebrates (~3% cover) (AIMS 2014a). The habitat surrounding Rankin Bank (<50 m) was mapped by AIMS on behalf of Woodside (2014a) and hosts filter feeding communities in areas of consolidated substrate interspersed by sand.
Glomar Shoals	Glomar Shoals is a shallow sedimentary bank comprised of coarser biogenic material than the surrounding seabed. The shoals' feature is 33 m to 77 m below the sea surface (Falkner <i>et al.</i> 2009) and is located 7.25 km (from the 50 m depth contour) from the Operational Area. Glomar Shoals has also been identified as a KEF (Falkner <i>et al.</i> 2009) and overlaps the Operational Area. This KEF encompasses a wider area than the shoal feature itself.
Ancient Coastline at 125 m depth contour	The Ancient Coastline at 125 m depth contour (DAWE 2019a) is located 2 km north of the Operational Area (refer to Section 4.7). Areas of this KEF comprise hard substrate and may occur near the Operational Area. Hard substrate seabed habitats present within the EMBA are likely to support filter feeding biota such as sponges and gorgonians (sea whip and fans), as reported for hard substrate seabed habitat in similar water depths along this outer shelf area of the NWS. Seabed habitat comprising hard substrates were not identified during a video benthic habitat and box grab seabed sediment sampling survey of the Lambert Deep development area (Jacobs 2014). A previous geophysical survey of this area, however, had identified a scarp area in proximity to two of the sample locations (Fugro Survey Pty Ltd 2002, Jacobs 2014). Observations of old dead coral fragments and coral rubble were made at these same two sample locations during the 2014 survey (Jacobs, 2014). Hard substrate seabed habitats present within the EMBA are likely to support filter feeding biota such as sponges and gorgonians (sea whip and fans), as reported for hard substrate seabed habitat in similar water depths along this outer shelf area of the NWS.
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	<p>The Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula KEF overlaps the EMBA and is located 294 km south-west of the Operational Area (refer to Section 4.7).</p> <p>The Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula are defined as a key ecological feature as they are unique seafloor features with ecological properties of regional significance, which apply to both the benthic and pelagic habitats within the feature. The canyons on the slope of the Cuvier Abyssal Plain and Cape Range Peninsula are connected to the Commonwealth waters adjacent to Ningaloo Reef and may also have connections to Exmouth Plateau. Aggregations of whale sharks, manta rays, humpback whales, sea snakes, sharks, large predatory fish and seabirds are known to occur in this area and are related to productivity (Sleeman <i>et al.</i> 2007). Thus, the canyons, Exmouth Plateau and</p>

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Habitat/ community	Key locations within the EMBA
	Commonwealth waters adjacent to Ningaloo Reef operate as a system to create the conditions for enhanced productivity seen in this region (Sleeman <i>et al.</i> 2007).
Exmouth Plateau	<p>The Exmouth Plateau KEF overlaps the EMBA and is located 227 km south-west of the Operational Area (refer to Section 4.7).</p> <p>Although the seascapes of this plateau are not unique (Falkner <i>et al.</i> 2009), it is believed that the large size of Exmouth Plateau and its expansive surface may modify deepwater flow and be associated with the generation of internal tides. Both may contribute to the upwelling of deeper, nutrient-rich waters closer to the surface (Brewer <i>et al.</i> 2007). The Exmouth Plateau is generally an area of low habitat heterogeneity; however, it is likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of around 1000 metres. The Exmouth Plateau is defined as a key ecological feature as it is a unique seafloor feature with ecological properties of regional significance, which apply to both the benthic and pelagic habitats within the feature.</p>
<b>Marine primary producers</b>	
Coral	<p>Coral reef habitats have a high diversity of corals and associated fish and other species of both commercial and conservation importance. Coral reef habitats are an integral part of the marine environment within the NWMR. The nearest coral reef habitat to the Operational Area is located at Glomar Shoals. Other coral reef habitats in the EMBA include:</p> <ul style="list-style-type: none"> <li>Rankin Bank (approximately 107 km south-west from Operational Area)</li> <li>Glomar Shoals (overlaps Operational Area)</li> </ul>
Seagrass beds and macroalgae	<p>Macroalgal communities of the north-west of Western Australia are relatively poorly understood/surveyed in comparison to other regions of Australia (Huisman, 2004; Huisman and Borowitzka, 2003). Macroalgae generally require a hard substrate, sufficient light and water clarity to survive, so are generally limited to shallow water. Macroalgal assemblages in the Pilbara region display an ephemeral growth pattern and may not be present year-round, despite the presence of suitable habitat.</p> <p>Seagrass beds and macroalgae habitats represent a food source for many marine species and also provide key habitats and nursery grounds (Department of Fisheries (DoF), 2011a). Seagrass beds and macroalgae habitats are present in several locations within the North-West Shelf Province, where the Operational Area is located. The nearest to the Operational Area are:</p> <ul style="list-style-type: none"> <li>Montebello Islands (approximately 142 km south-west from Operational Area)</li> <li>Barrow Island (approximately 172 km south-west from Operational Area)</li> </ul>
Mangroves	<p>Mangroves are an important part of the coastal ecosystem, contributing to primary productivity and providing habitat for fauna species including fish, sea snakes, turtles and birds (Wells <i>et al.</i>, 2003). The significance of tropical arid zone mangroves along the Pilbara coastline is recognised. Specific guidance documentation has been established by the Environmental Protection Agency (EPA) (2001) to protect these communities, habitats and dependant habitats from development pressures.</p> <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). 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. Mangrove forests can be found in:</p> <ul style="list-style-type: none"> <li>Montebello Islands (approximately 142 km south-west from Operational Area)</li> </ul>
<b>Other communities and habitats</b>	
Plankton	<p>Phytoplankton within the Operational Area and EMBA are generally expected to reflect the conditions of the NWMR. Primary productivity of the NWMR appears to be largely driven by offshore influences (as reported by Brewer <i>et al.</i>, 2007), with periodic upwelling events and cyclonic influences driving coastal productivity with nutrient recycling and advection. 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 <i>et al.</i>, 2007).</p>

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Habitat/ community	Key locations within the EMBA
	<p>Zooplankton within the Operational Area and EMBA 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 &amp; Gilmour, 2008; Simpson <i>et al.</i>, 1993) and fish larvae abundance can occur throughout the year.</p> <p>Within the EMBA, peak primary productivity 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 (MPRA, 2005) with periodic upwelling throughout the year.</p>
Continental Slope Demersal Fish Communities	<p>The Continental Slope Demersal Fish Communities KEF overlaps the EMBA and is located 115 km south-west of the Operational Area (refer to Section 4.7).</p> <p>The diversity of demersal fish assemblages on the continental slope in the Timor Province, the North-West Shelf Transition Province and the North-West Shelf Province is high compared to elsewhere along the Australian continental slope. This species assemblage is recognised as a key ecological feature because of its biodiversity values, including high levels of endemism. For further information on KEF features and values that are relevant to or may be impacted by the EP activities, refer to Section 4.7 and the Master Existing Document (Appendix C, Table 10-1).</p>
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. Free swimming pelagic fish within the Operational Area and EMBA are expected to include small pelagic fishes, broadly distributed throughout the tropical pelagic environment. Larger pelagic fish include migratory species (e.g. tunas, sharks etc.) as well as commercially important species.</p> <p>Particular features within the EMBA that are known to support pelagic and demersal fish populations include The Ancient Coastline at 125 m Depth Contour KEF (approximately 2 km north from Operational Area), The Continental Slope Demersal Fish Communities KEF (approximately 115 km south-west from Operational Area), Rankin Bank (approximately 107 km south-west from Operational Area) and Glomar Shoals (overlaps Operational Area).</p> <p>Notably, the presence of subsea infrastructure associated with the GWA, Pluto and Angel 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 <i>et al.</i> 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 and at shoals within the EMBA.</p> <p>Discrete areas of hard substrate hosting sessile filter feeding communities may also be associated within the Ancient Coastline at the 125 m Depth Contour KEF (approximately 2 km north from Operational Area). However, no areas of hard substrate characteristic of this KEF have been identified within the Operational Area (Jacobs 2014).</p> <p>Filter feeder communities within the Operational Area are present on the subsea infrastructure, which provides hard substrate for attachment (Jacobs, 2014).</p>
Artificially created habitats	<p>There is an increasing body of scientific literature overseas and in Australia looking at the ecosystem value of oil and gas subsea infrastructure. This knowledge is required and used to understand impacts and benefits of the offshore industry on the marine environment and inform decommissioning decisions. In Australia these have largely focused on the NWS. The key findings of the following studies indicate that subsea infrastructures have been found to create habitat for a number of species, including commercially valuable species that are in low abundance across the region.</p> <ul style="list-style-type: none"> <li>• McLean <i>et al.</i> (2017) assessed the fish diversity and abundance as well as epibenthic habitats and invertebrates along two pipelines in the north-west of Australia, one of which was the Echo Yodel pipeline. <ul style="list-style-type: none"> <li>– A total of 5962 individual fish from 92 species and 42 families were observed in ROV footage taken during routine inspection and maintenance activities along</li> </ul> </li> </ul>

Habitat/ community	Key locations within the EMBA
	<p>the two pipelines. The findings included the presence of larval fish, juveniles, sub-adults and adults, which indicates the populations around the pipelines may be increasing. It was also found that both pipelines, including the Echo Yodel pipeline, provided habitat that supported a high abundance of commercially important fish including snappers (<i>Lutjanidae</i>) and groupers (<i>Epinephelidae</i>).</p> <ul style="list-style-type: none"> <li>– Analysis of 1318 ROV transects sampled from the Echo Yodel pipeline in 2013 observed complex deep water epibenthic habitat forming filter-feeders including deep water corals, crinoids (feather stars), <i>Gorgonocephalidae</i> (basket stars), hydroids, true anemones and sponges. Historically high trawling effort is thought to have extensively removed and modified complex epibenthic habitats in the region. These habitats were considered to be important to commercially targeted species. The modification or loss of these habitats is thought to have negatively impacted the valuable commercial fisheries in the region. However, McLean <i>et al.</i> (2017) demonstrates that modern pipeline structures such as the Echo Yodel pipeline can offer a significant epibenthic habitat and refuge for fish, potentially comparable to the historical habitats lost to trawling.</li> <li>• In 2018 Bond and Taylor (2019) continued and added to the work completed by McLean <i>et al.</i> (2017) who investigated changes in the fish community and habitat on the Echo Yodel pipeline from 2007, 2008 and 2013 using ROV surveys. They looked at pipeline changes over time and differences between the pipeline and EHU. Their conclusions include: <ul style="list-style-type: none"> <li>– Species richness was, on average, 25% higher on the Echo Yodel pipeline than off, while relative abundance of fish was nearly double on the pipeline than in adjacent natural habitats. The pipeline was characterised by large, commercially important species known to associate with complex epibenthic habitat and, as such, possessed a biomass of commercial fish 7.5 times higher and catch value 8.6 times higher than in adjacent natural habitats (Bond <i>et al.</i>, 2018a).</li> <li>– Changes in habitat coverage on the pipeline continue to show trends described by McLean <i>et al.</i> (2017). Additional to increases in sand/rubble/cobble and reduction in the overall area of bare pipe, true anemones continued to reduce in cover while crinoids and gorgonocephalids increased in cover. True anemones found on the pipeline in 2008 are no longer present and those recorded in the 2018 are of a different species.</li> </ul> </li> <li>• New research led by the Australian Institute of Marine Science (AIMS) (2024) in collaboration with Deakin University and ORCAS Consulting supports these findings and found that offshore oil and gas infrastructures play a minor role in maintaining regional populations of marine life in north-west and south-east Australia. <ul style="list-style-type: none"> <li>– There is evidence that oil and gas structures can increase the local abundance and diversity of marine organisms, particularly in seascapes where natural habitats are scarce. These new findings suggest that if structures like platforms are removed, there may be little regional impact on how the larvae of marine organisms disperse to reach new habitats and how marine populations will be sustained.</li> <li>– The Bass Strait study found that oil and gas platforms play a minor role in supporting the long-term health and survival of the five representative species (three rocky reef fish and two invertebrates) studied, but subsea pipelines appear to facilitate important dispersal processes in their early life stages.</li> <li>– The researchers found that platforms were a modest source of connectivity for the jewel anemone, despite the species dominating coverage of these structures. Platforms were not important destinations or stepping stone habitats for the other species studied, so their full removal would have a low impact on the connectivity of those species.</li> <li>– In contrast, sections of subsea pipelines were found to be source and destination habitats of varying strengths for most study species, except for the long-spined sea urchin. Removing these pipelines would have a moderate</li> </ul> </li> </ul>



Habitat/ community	Key locations within the EMBA
	impact on the connectivity of the fish populations studied and a low impact on the invertebrates studied.

## 4.6 Protected species

A total of 56 EPBC Act listed species considered to be MNES were identified as potentially occurring within the EMBA, of which a subset of 42 species were identified as potentially occurring within the Operational Area. The full list of marine species identified from the PMST reports are provided in Appendix D. The PMST reports are produced from a grid-based search, which can cause species outside of the search area to be detected, such as terrestrial. Species identified in the PMST that are not known to inhabit shorelines, nor rely on the marine environment for their diet, are not included or assessed. One conservation dependent species (Scalloped Hammerhead) has also been identified with a potential to occur within the Operational Area and EMBA.

Species identified as potentially occurring within the Operational Area and EMBA and biologically important areas (BIAs) or habitat critical to their survival (habitat critical) which overlap the Operational Area and EMBA are listed in Table 4-4 to Table 4-12. Figure 4-4 to Figure 4-8 show the spatial overlap between relevant BIAs and habitat critical areas and the Operational Area and EMBA. Species that have been identified as having ecologically significant interactions in the Operational Area are described in further detail in this section. Key threatened and migratory species and associated biologically important behaviours in the EMBA are further described in Appendix C.

### 4.6.1 Fish, sharks and rays

A total of 14 EPBC Act listed threatened or specially protected migratory fish, shark, and ray species have been identified to potentially occur within the EMBA, of which 11 occur in the Operational Area (Table 4-4). A full list of EPBC Act listed species identified in the PMST search is provided in Appendix D.

BIAs that overlap the EMBA are presented in Figure 4-4 and in Table 4-5. The Operational Area overlaps the foraging BIA for Whale Sharks located northward from Ningaloo along the 200 m isobath (Figure 4-4, Table 4-5).

Further description of BIAs is provided in Appendix C.

**Table 4-4: Threatened and migratory fish, shark and ray species predicted to occur within the Operational Area and EMBA**

Scientific name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>3</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>4</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Pristis clavata</i>	Dwarf Sawfish	Vulnerable	Migratory	Marine	Specially Protected – Migratory Species	Critically Endangered	N/A	Species or species habitat known to occur within area	Recovery Plan for the Grey Nurse Shark ( <i>Carcharias taurus</i> ) 2014 (Commonwealth of Australia, 2014);  Sawfishes and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b);  Threat Abatement Plan for the impacts of marine debris on the
<i>Pristis zijsron</i>	Green Sawfish	Vulnerable	Migratory	Marine	Threatened Species - Vulnerable	Critically Endangered	N/A	Species or species habitat known to occur within area	
<i>Pristis pristis</i>	Freshwater Sawfish	Vulnerable	Migratory	Marine	Specially Protected – Migratory Species	Critically Endangered	Species or species habitat may occur within area	Species or species habitat likely to occur within area	
<i>Mobula birostris</i>	Giant Manta Ray	N/A	Migratory	Marine	Specially Protected – Migratory Species	Endangered	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	
<i>Carcharias taurus</i>	Grey Nurse Shark	N/A	Migratory	Marine	Threatened Species - Vulnerable	Critically Endangered	N/A	Species or species habitat likely to occur within area	

<sup>3</sup> Threatened and Priority Fauna List – <https://www.dbca.wa.gov.au/management/threatened-species-and-communities>.

<sup>4</sup> IUCN. 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org>.

Scientific name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>3</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>4</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Carcharias taurus</i> (west coast population)	Grey Nurse Shark	Vulnerable	N/A	Marine	N/A	Near Threatened	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018).
<i>Isurus paucus</i>	Longfin Mako	N/A	Migratory	Marine	Specially Protected – Migratory Species	Endangered	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Anoxypristis cuspidata</i>	Narrow Sawfish	N/A	Migratory	Marine	Specially Protected – Migratory Species	Critically Endangered	Species or species habitat known to occur within area	Species or species habitat known to occur within area	
<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	N/A	Migratory	Marine	N/A	Critically Endangered	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Mobula alfredi</i>	Reef Manta Ray	N/A	Migratory	Marine	Specially Protected – Migratory Species	Vulnerable	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	
<i>Sphyrna lewini</i>	Scalloped Hammerhead	Conservation Dependent	N/A	Marine	N/A	Critically Endangered	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	

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Scientific name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>3</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>4</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Isurus oxyrinchus</i>	Shortfin Mako	N/A	Migratory	Marine	Specially Protected – Migratory Species	Endangered	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Rhincodon typus</i>	Whale Shark	Vulnerable	Migratory	Marine	Specially Protected – Migratory Species	Endangered	Foraging, feeding or related behaviour known to occur within area	Foraging, feeding or related behaviour known to occur within area	
<i>Carcharodon carcharias</i>	Great White Shark	Vulnerable	Migratory	Marine	Threatened Species - Vulnerable	Vulnerable	Species or species habitat may occur within area	Species or species habitat known to occur within area	

Table 4-5: Fish, shark and ray BIAs within the EMBA

Species	BIA type	Approx. distance and direction of BIA from Operational Area (km)
Whale Shark ( <i>Rhincodon typus</i> )	Foraging (northward from Ningaloo along 200 m isobath)	Overlaps

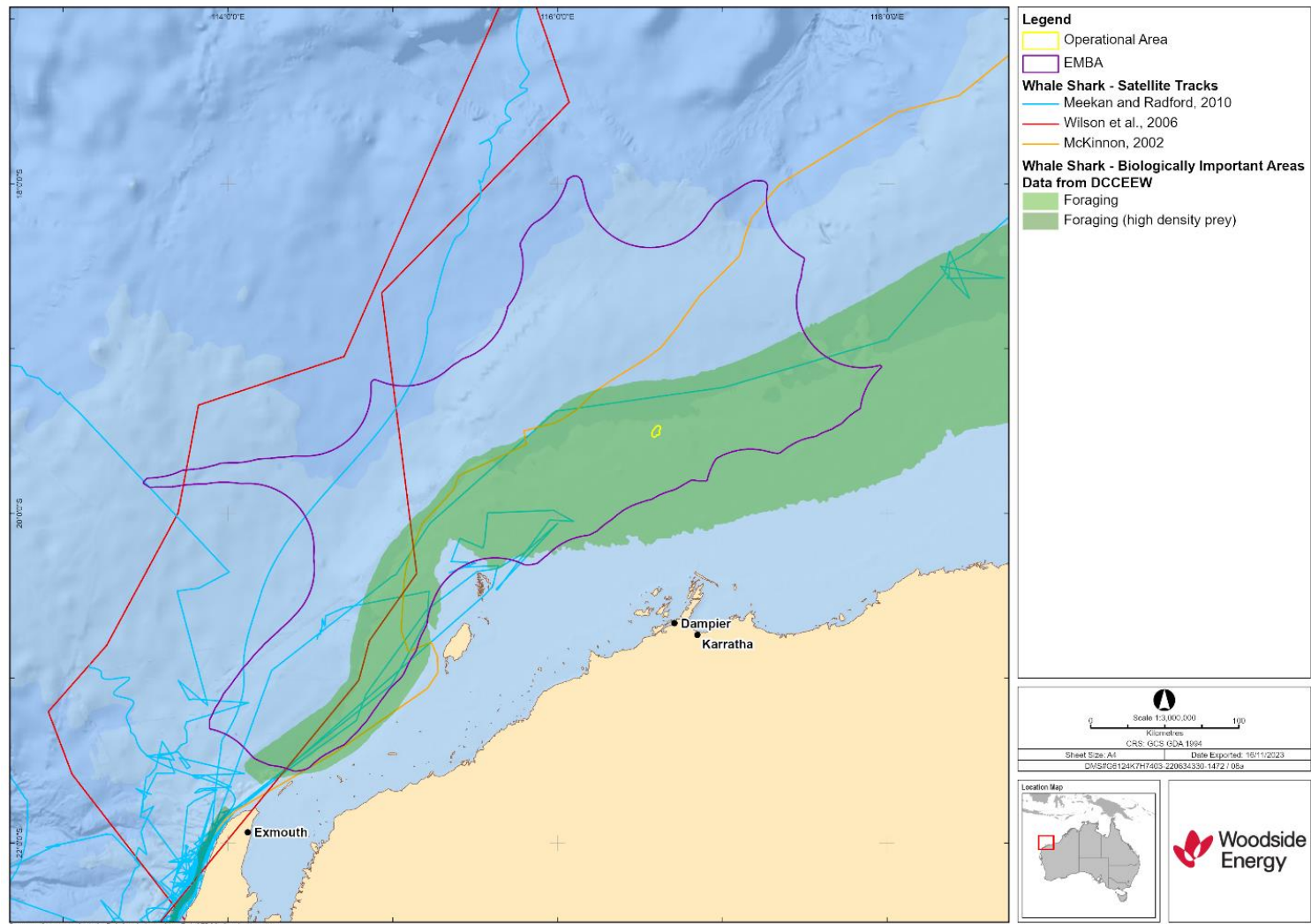


Figure 4-4: Whale shark BIAs overlapping the EMBA and tagged whale shark satellite tracks

Source: DCCEEW, 2024

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#### **4.6.2 Marine reptiles**

A total of 8 EPBC Act listed threatened and migratory marine reptile species have been identified to potentially occur within the EMBA, of which 8 occur in the Operational Area (Table 4-6). A full list of EPBC Act listed species identified in the PMST search is provided in Appendix D.

BIAs that overlap the EMBA are presented in Figure 4-5 and Table 4-7. Critical habitat overlapping the EMBA is presented in Figure 4-6 and Table 4-8. The Operational Area does not overlap any BIAs or habitats critical for marine reptiles (Figure 4-5 and Figure 4-6)

Further description of BIAs is provided in Appendix C.

Table 4-6: Threatened and migratory marine reptile species predicted to occur within the Operational Area and EMBA

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>5</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>6</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory	Marine	Threatened Species - Vulnerable	Data Deficient	Congregation or aggregation known to occur within area	Congregation or aggregation known to occur within area	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia, 2017); Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018).
<i>Chelonia mydas</i>	Green Turtle	Vulnerable	Migratory	Marine	Threatened Species - Vulnerable	Endangered	Species or species habitat likely to occur within area	Congregation or aggregation known to occur within area	
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	Vulnerable	Migratory	Marine	Threatened Species - Vulnerable	Critically Endangered	Species or species habitat likely to occur within area	Congregation or aggregation known to occur within area	
<i>Aipysurus foliosquama</i>	Leaf-scaled Sea Snake	Critically Endangered	N/A	Marine	Threatened Species – Critically Endangered	Data Deficient	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	

<sup>5</sup> Threatened and Priority Fauna List – <https://www.dbca.wa.gov.au/management/threatened-species-and-communities>.

<sup>6</sup> IUCN. 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org>.

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>5</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>6</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Dermochelys coriacea</i>	Leatherback Turtle	Endangered	Migratory	Marine	Threatened Species - Vulnerable	Vulnerable	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	
<i>Caretta caretta</i>	Loggerhead Turtle	Endangered	Migratory	Marine	Threatened Species - Endangered	Vulnerable	Species or species habitat likely to occur within area	Species or species habitat known to occur within area	
<i>Crocodylus porosus</i>	Salt-water Crocodile	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Aipysurus apraefrontalis</i>	Short-nosed Sea Snake	Critically Endangered	N/A	Marine	Threatened Species – Critically Endangered	Data Deficient	Species or species habitat known to occur within area	Species or species habitat known to occur within area	

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**Table 4-7: Marine turtle BIAs within the EMBA**

Species	BIA type	Approx. distance and direction of BIA from Operational Area (km)
Flatback turtle	Internesting buffer (Intercourse Is)	47 km south
	Internesting buffer (Montebello Is - Hermite Is, NW Is, Trimouille Is)	62 km south-west
	Internesting buffer (Dampier Archipelago (islands to the west of the Burrup Peninsula))	15 km south
	Internesting buffer (Legendre Is, Huay Is)	20 km south
	Internesting buffer (Delambre Is)	32 km south-east
	Internesting buffer (Thevenard Island - South coast)	163 km south-west
Green turtle	Internesting buffer (Montebello Is - Hermite Is, NW Is, Trimouille Is)	121 km south-west
	Internesting buffer (North and South Muiron Is)	302 km south-west
	Internesting buffer (Middle Is. West Coast Barrow Island West Coast and North Coast)	148 km south-west
	Internesting buffer (Montebello Islands)	126 km south-west
Hawksbill turtle	Internesting buffer (Ah chong and South East Is)	121 km south-west
	Internesting buffer (Barrow Island)	147 km south-west
	Internesting buffer (Montebello Is - Hermite Is, NW Is, Trimouille Is)	118 km south-west
	Internesting buffer (Thevenard Island)	241 km south-west
Loggerhead turtle	Internesting buffer (Muiron Island)	302 km south-west
	Internesting buffer (Montebello Islands)	126 km south-west

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**Table 4-8: Internesting habitat critical to the survival of marine turtle species predicted to occur within the EMBA**

Species	Genetic stock	Nesting locations	Approx. distance and direction from Operational Area (km)	Internesting buffer	Nesting period	Hatching period
Green turtle	North West Shelf	Barrow Island, Montebello Islands, Serrier Island and Thevenard Island.	(74 km south-east)	20 km	Nov–Mar	Jan–May (peak: Feb–Mar)
Flatback turtle	Pilbara	Montebello Islands, Barrow Island, Dampier Archipelago (including Delambre Island and Hauy Island), coastal islands from Cape Preston to Locker Island	(34 km south-east)	60 km	Oct–Mar (peak: Feb–Mar)	Oct–Mar
Hawksbill turtle	Western Australia	Cape Preston to mouth of Exmouth Gulf including Montebello Islands and Lowendal Islands.	(74 km south-east)	20 km	All year (peak: Oct–Feb)	All year (peak: Dec–Feb)
Leatherback turtle	No overlap – nesting located in Northern Territory and North Queensland					
Olive Ridley turtle	No overlap – nesting located in Northern Australia and North Queensland					

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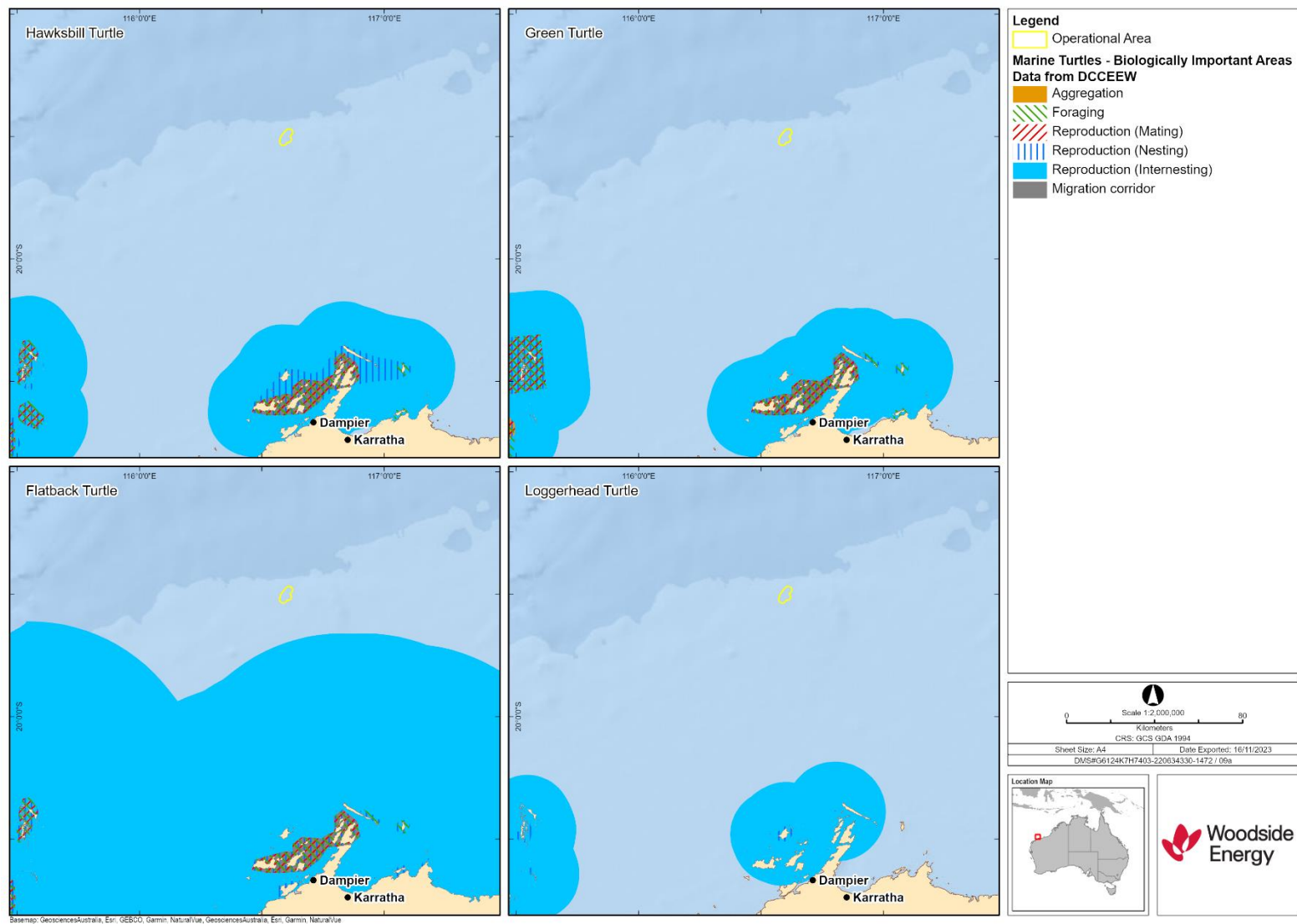


Figure 4-5: Marine reptile BIAs location relative to the Operational Area

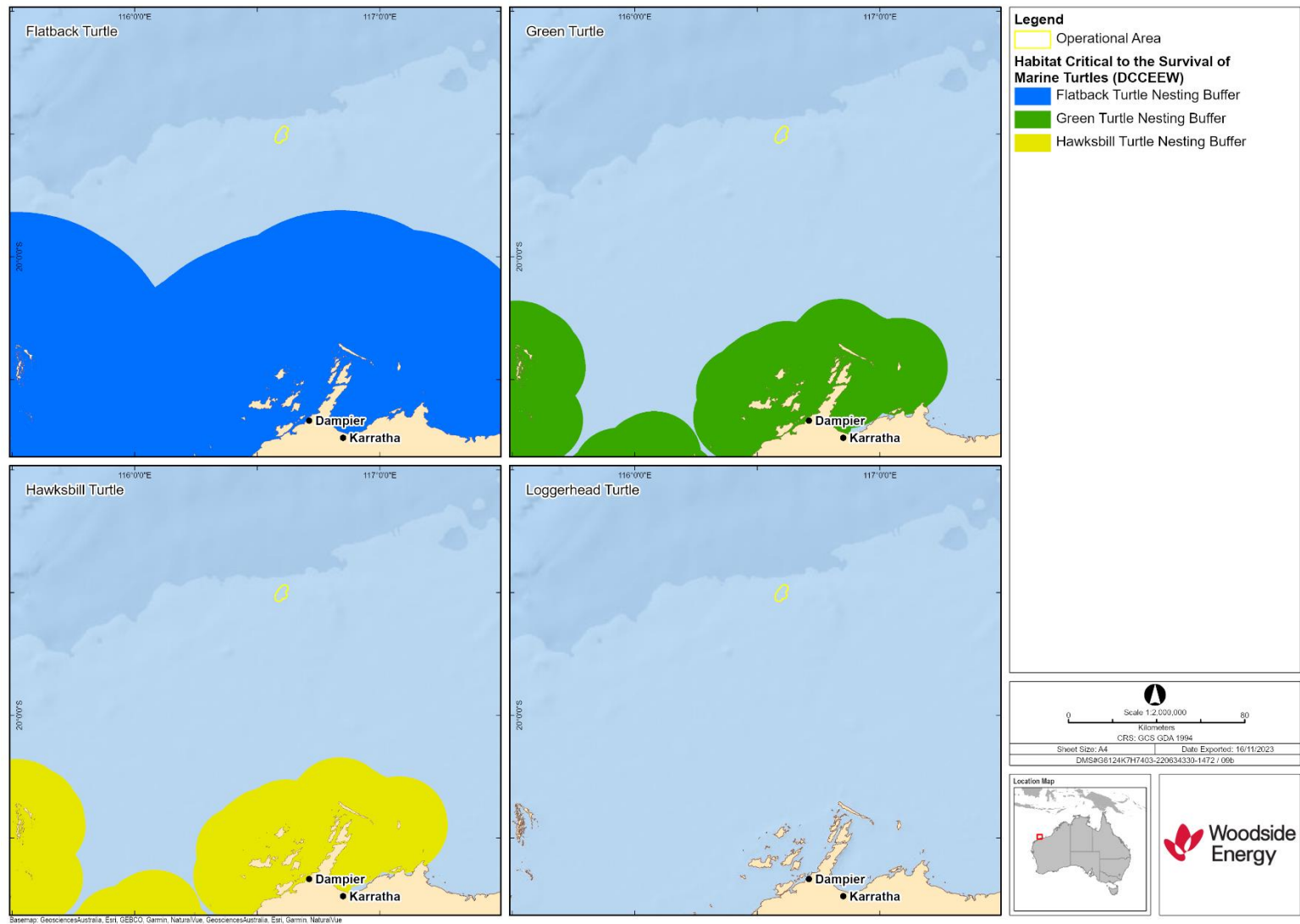


Figure 4-6: Marine turtles’ habitat critical to the survival of the species location relative to the Operational Area

### 4.6.3 Marine mammals

A total of 13 EPBC Act listed threatened and migratory marine mammal species have been identified to potentially occur within the EMBA, of which 8 occur in the Operational Area (Table 4-9). A full list of EPBC Act listed species identified in the PMST search is provided in Appendix D.

BIAs that overlap the EMBA are presented in Table 4-10, Figure 4-7, and Figure 4-8. Further description of BIAs is provided in Appendix C.

**Table 4-9: Threatened and migratory marine mammal species predicted to occur within the Operational Area and EMBA**

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>7</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>8</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Balaenoptera bonaerensis</i>	Antarctic Minke Whale	N/A	Migratory	Cetacean	Specially Protected – Migratory Species	Near Threatened	N/A	Species or species habitat likely to occur within area	Conservation Management Plan for the Blue Whale 2015–2025 (Commonwealth of Australia, 2015a);  Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018).
<i>Sousa sahulensis</i>	Australian Humpback Dolphin	N/A	Migratory (as <i>Sousa chinensis</i> )	Cetacean	Specially Protected – Migratory Species	Vulnerable	N/A	Species or species habitat likely to occur within area	
<i>Orcaella heinsohni</i>	Australian Snubfin Dolphin	N/A	Migratory	Cetacean	Specially Protected – Migratory Species	Vulnerable	N/A	Species or species habitat may occur within area	
<i>Balaenoptera musculus</i>	Blue Whale	Endangered	Migratory	Cetacean	Threatened Species - Endangered	Endangered	Species or species habitat likely to occur within area	Migration route known to occur within area	
<i>Balaenoptera edeni</i>	Bryde's Whale	N/A	Migratory	Cetacean	Specially Protected – Migratory Species	Least Concern	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	

<sup>7</sup> Threatened and Priority Fauna List – <https://www.dbca.wa.gov.au/management/threatened-species-and-communities>.

<sup>8</sup> IUCN. 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org>.

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>7</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>8</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Dugong dugon</i>	Dugong	N/A	Migratory	Marine	Specially Protected – Migratory Species	Vulnerable	N/A	Species or species habitat known to occur within area	
<i>Balaenoptera physalus</i>	Fin Whale	Vulnerable	Migratory	Cetacean	Threatened Species - Endangered	Vulnerable	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Megaptera novaeangliae</i>	Humpback Whale	N/A	Migratory	Cetacean	Specially Protected – Migratory Species & Conservation Dependant	Least Concern	Breeding known to occur within area	Breeding known to occur within area	
<i>Orcinus orca</i>	Killer Whale	N/A	Migratory	Cetacean	Specially Protected – Migratory Species	Data Deficient	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Balaenoptera borealis</i>	Sei Whale	Vulnerable	Migratory	Cetacean	Threatened Species - Endangered	Endangered	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Eubalaena australis</i>	Southern Right Whale	Endangered	Migratory	Cetacean	Threatened Species - Vulnerable	Least Concern	N/A	Species or species habitat likely to occur within area	

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Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>7</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>8</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Physeter macrocephalus</i>	Sperm Whale	N/A	Migratory	Cetacean	Threatened Species - Vulnerable	Vulnerable	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Tursiops aduncus</i>	Spotted Bottlenose Dolphin (Arafura/Timor Sea populations)	N/A	Migratory	Cetacean	N/A	Near Threatened	Species or species habitat may occur within area	Species or species habitat known to occur within area	

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**Table 4-10: Marine mammal BIAs within the EMBA**

Species	BIA type	Approx. distance and direction from Operational Area (km)
Humpback Whale	Migration (north and south)	33 km south
Pygmy Blue Whale	Migration (The migration corridor extends from the coast to out to approximately 100 km offshore in the Kimberley region extending south to North-west Cape. From North-west Cape to south of shark Bay the migration corridor is reduced to approximately 50 km).	50 km north

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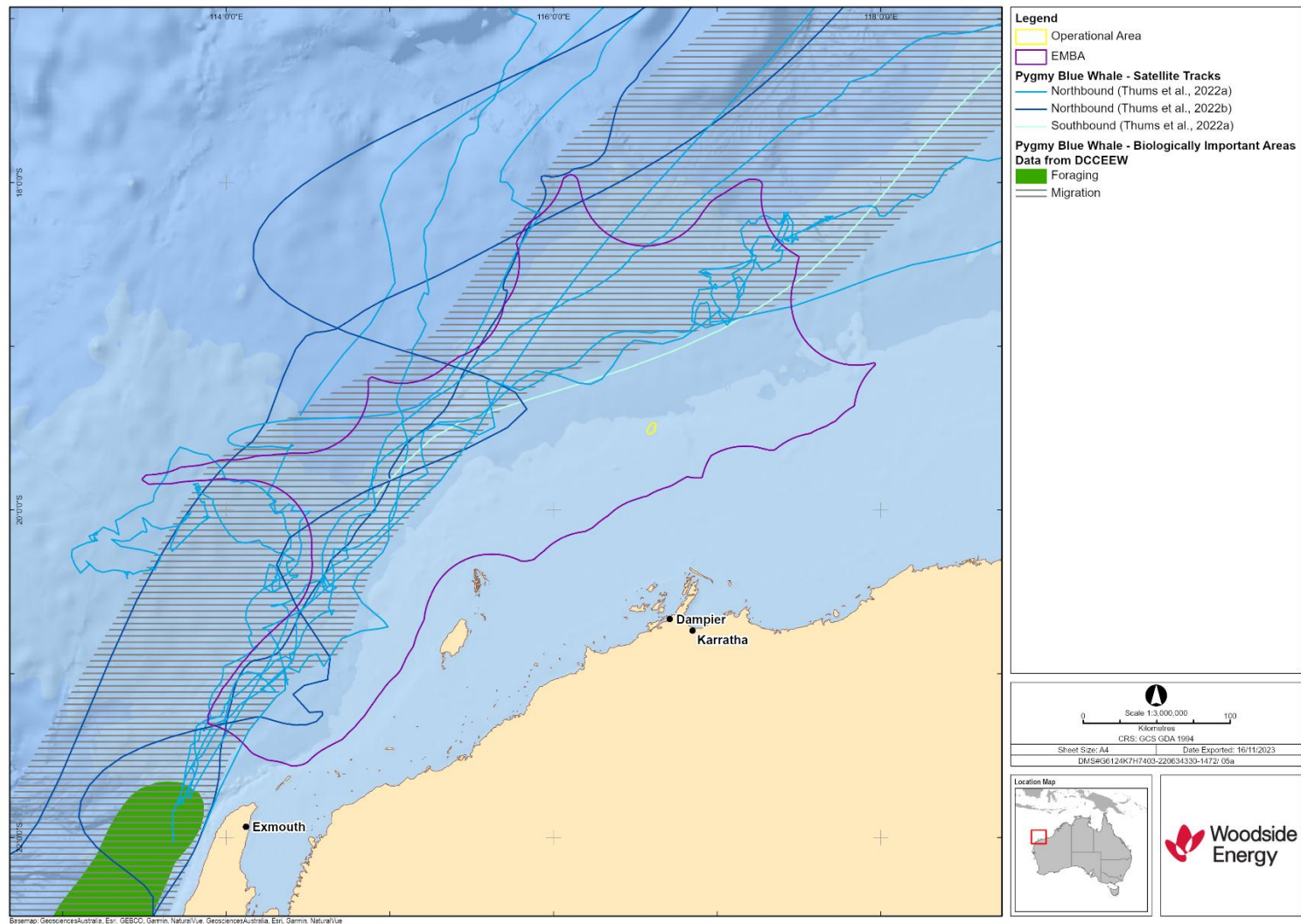


Figure 4-7: Pygmy blue whale BIAs in proximity to the Operational Area and tagged whale tracks

Source: DCCEEW, 2024

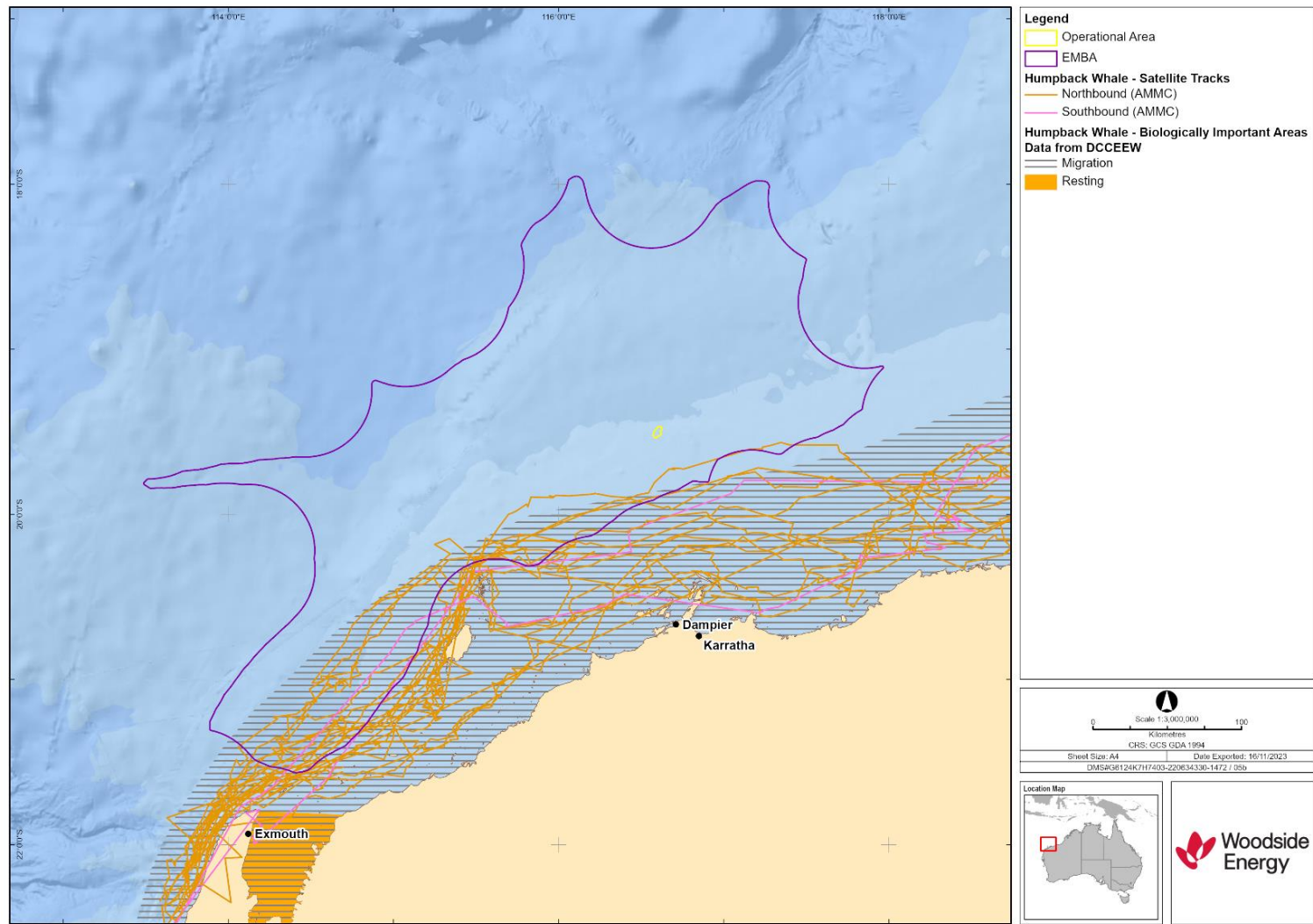


Figure 4-8: Humpback whale BIAs in proximity to the Operational Area and tagged tracks

Source: DCCEEW, 2024

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#### 4.6.4 Seabirds and migratory shorebirds

A total of 21 EPBC Act listed threatened seabirds and migratory shorebird species have been identified to potentially occur within the EMBA, of which 14 occur in the Operational Area (Table 4-11). A full list of EPBC Act listed species identified in the PMST search is provided in Appendix D.

BIAs that overlap the EMBA are presented in Table 4-12 and Figure 4-9. The Operational Area overlaps the breeding BIA for Wedge-tailed Shearwaters located in the Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef (Table 4-12, Figure 4-9).

Detailed descriptions of seabirds and migratory shorebirds in the EMBA are provided in Appendix C.

##### 4.6.4.1 Southern Giant Petrel

The Southern Giant Petrel (*Macronectes giganteus*) is listed as endangered under the EBPC Act and listed as a migratory species under the BC Act. The total population of the Southern Giant-Petrel breeding in Australian territory is around 7090 breeding pairs (EA 2001f, Woehler *et al.* 2001; Woehler *et al.* in press). There were 2,293 breeding pairs of the Southern Giant-Petrel on Macquarie Island when it was censused in the period 1998 to 1999, and the population was considered to be decreasing. There were 3,154 breeding pairs on Heard Island when this was censused in the period 1987 to 1988. There were 1400 breeding pairs on McDonald Island in the Southern Ocean when it was censused in 1979. Giganteus Island, Hawker Island, and Frazier Island in the Australian Antarctic Territories respectively supported three, 25 and 215 breeding pairs of Southern Giant-Petrels when they were censused in 1998 to 1999. The population of Giganteus Island was considered to be stable, and the populations of Hawker Island and Frazier Island were considered to be increasing (EA 2001f, Woehler *et al.* 2001; Woehler *et al.* in press).

The Southern Giant-Petrel breeds annually. Pairs return to their breeding sites in August and September, forming dispersed colonies of ten to 300 pairs. On Macquarie Island, nests are normally about 3 m apart (Marchant & Higgins 1990). The egg is usually laid between September and October, and hatches 59 days later (Burger 1978; Johnstone 1978). At Macquarie Island, however, the egg is typically laid between the 20th of August and the 6th of September, and hatching occurs between the 25th of October and the 12th of November, and if successful, fledging occurs at 115 days of age between late January and late March (Gales *et al.* in press).

A joint State and Federal Government study commissioned by the Natural Heritage Trust is studying the movements of both Northern and Southern Giant-Petrels nesting on Macquarie Island using satellite tracking. This study represents the first satellite tracking of these species in Australian waters and complements existing satellite tracking data obtained for Giant Petrels at South Georgia (British Antarctic Survey) and Palmer Station, Antarctica (DEH 2006).

Although this species or species habitat may occur within the EMBA, no BIAs for the Southern giant petrel overlap with the Operational Area or EMBA.

##### 4.6.4.2 Abbott's Booby

The Abbott's Booby (*Papasula abbotti*) is listed as endangered under the EBPC Act and under the BC Act. Currently, Abbott's Booby is only known to breed on Christmas Island (Stokes 1988) and to forage in the waters surrounding the island (Becking 1976).

In 1967, the breeding population on Christmas Island was estimated at 2,300 pairs (Nelson 1971). In 1979 and 1980, the breeding population was resurveyed and although numbers were not estimated, they found that the distribution of nests had not changed significantly from that of 1967, despite large areas of habitat clearance (Powell & Tranter 1981). The most recent population survey carried out in 1991 estimated the population at 2,500 pairs (Yorkston & Green 1997). Although this is greater than that estimated by Nelson, this survey covered much more of the island and discovered nests in areas not previously known.

Abbott's Boobies are thought to be very long lived, and from breeding data it has been estimated that it would take between 24 and 31 years for parents to produce their replacements (Nelson & Powell 1986; Reville *et al.* 1990a). They probably first breed at eight years of age and the average life span could be around 40 years (Reville *et al.* 1990a). Abbott's Booby lays a single egg clutch (Marchant & Higgins 1990). The mean period from hatching to fledging is 151 days (range 140 to 175 days, sample size 11), 30 to 60 days longer than in other Sulidae (gannets and boobies). Breeding commences in March, when established pairs begin returning to nest sites and start collecting nest material (Nelson & Powell 1986). Laying may

occur at any time between April and October, but most birds lay between mid-May and mid-July (Nelson & Powell 1986).

Although this species or species habitat may occur within the EMBA, no BIAs for the Abbott's Booby overlap with the Operational Area or EMBA.

#### 4.6.4.3 Indian Yellow-nosed Albatross

The Indian yellow-nosed albatross (*Thalassarche carteri*) is listed as vulnerable under the EBPC Act and endangered under the BC Act. The Indian Yellow-nosed Albatross forages mostly in the southern Indian Ocean where it is particularly abundant off Western Australia (Marchant & Higgins 1990). The current global population of the Indian Yellow-nosed Albatross is estimated at 160 000-180 000 individuals, with 36 500 pairs breeding annually (Gales 1998). The species breeds on Prince Edward Islands (South Africa), Kerguelen Islands, Crozet Island, Amsterdam and St Paul Islands (France) (Gales 1998).

The age at first breeding of the Indian Yellow-nosed Albatross is probably five years (Jouventin *et al.* 1983). The Indian Yellow-nosed Albatross nests biennially in colonies (Environment Australia 1999), but little is known about their nesting biology. Adult birds arrive at Amsterdam Island in late August and there is a pre-breeding period of 15 to 20 days during which courtship and pair formation takes place (Richardson 1984). A single egg is laid mid-September and is incubated by both sexes. There is no data on the length of shifts, but the total incubation period is 71 to 72 days (Jouventin *et al.* 1983). The eggs hatch in late November to early December (Serventy *et al.* 1971). Both parents guard the chick continually for the first three weeks and feed chicks until time of fledging in late March to mid-April (Environment Australia 1999; Garnett & Crowley 2000;).

Although this species or species habitat is likely to occur within the EMBA, no BIAs for the Indian yellow-nosed albatross overlap with the Operational Area or EMBA.

**Table 4-11: Threatened and migratory seabird and migratory shorebird species predicted to occur within the Operational Area and EMBA**

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>9</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>10</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Papasula abbotti</i>	Abbott's Booby	Endangered	N/A	Marine	N/A	Endangered	N/A	Species or species habitat may occur within area	Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018).
<i>Sternula nereis nereis</i>	Fairy Tern	Vulnerable	N/A	N/A	Threatened Species - Vulnerable	Vulnerable	Species or species habitat may occur within area	Breeding known to occur within area	
<i>Phaethon lepturus fulvus</i>	Christmas Island White-tailed Tropicbird	Endangered	N/A	Marine	N/A	Least Concern (as <i>Phaethon lepturus</i> )	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Anous stolidus</i>	Common Noddy	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern (as Brown Noddy)	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Actitis hypoleucos</i>	Common Sandpiper	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	Species or species habitat may occur within area	Species or species habitat may occur within area	

<sup>9</sup> Threatened and Priority Fauna List – <https://www.dbca.wa.gov.au/management/threatened-species-and-communities>.

<sup>10</sup> IUCN. 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org>.

Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>9</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>10</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Calidris ferruginea</i>	Curlew Sandpiper	Critically Endangered	Migratory	Marine - overfly marine area	Threatened Species – Critically Endangered	Near Threatened	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Numenius madagascariensis</i>	Eastern Curlew	Critically Endangered	Migratory	Marine	Threatened Species – Critically Endangered	Endangered (as Far Eastern Curlew)	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	N/A	Migratory	Marine (as <i>Puffinus carneipes</i> )	Threatened Species – Vulnerable	Near Threatened	N/A	Species or species habitat may occur within area	
<i>Fregata minor</i>	Great Frigatebird	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	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	Marine	Threatened Species – Endangered	Endangered	N/A	Species or species habitat may occur within area	
<i>Fregata ariel</i>	Lesser Frigatebird	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	

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Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>9</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>10</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
<i>Pandion haliaetus</i>	Osprey	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	N/A	Species or species habitat known to occur within area	
<i>Calidris melanotos</i>	Pectoral Sandpiper	N/A	Migratory	Marine - overfly marine area	Specially Protected – Migratory Species	Least Concern	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Calidris canutus</i>	Red Knot	Vulnerable	Migratory	Marine - overfly marine area	Threatened Species – Endangered	Near Threatened	Species or species habitat may occur within area	Species or species habitat may occur within area	
<i>Phaethon rubricauda westralis</i>	Red-tailed Tropicbird (Indian Ocean)	Endangered	N/A	N/A	N/A	Least Concern (as <i>Phaethon rubricauda</i> )	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Sterna dougallii</i>	Roseate Tern	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	N/A	Foraging, feeding or related behaviour likely to occur within area	
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Vulnerable	Migratory	Marine	Specially Protected – Migratory Species	Vulnerable	Species or species habitat may	Species or species habitat may	

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Species name	Common name	Environment Protection and Biodiversity Conservation Act 1999 (as per PMST report Appendix D)			WA Biodiversity Conservation Act 2016 <sup>9</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>10</sup>	Potential for interaction		EPBC Act Part 13 Statutory Instrument
		Threatened status	Migratory status	Listed	Conservation Status	Global Status	Operational Area	EMBA	
							occur within area	occur within area	
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	Vulnerable	N/A	Marine	N/A	Least Concern	N/A	Species or species habitat may occur within area	
<i>Macronectes giganteus</i>	Southern Giant-Petrel	Endangered	Migratory	Marine	Specially Protected – Migratory Species	Least Concern	N/A	Species or species habitat may occur within area	
<i>Calonectris leucomelas</i>	Streaked Shearwater	N/A	Migratory	Marine	Specially Protected – Migratory Species	Near Threatened	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	
<i>Phaethon lepturus</i>	White-tailed Tropicbird	N/A	Migratory	Marine	Specially Protected – Migratory Species	Least Concern (as <i>Phaethon lepturus</i> )	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area	

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**Table 4-12: Seabird and shorebird BIAs within the EMBA**

Species	BIA type	Approx. distance and direction from Operational Area (km)
Wedge-tailed Shearwater	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	Overlaps
	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	253 km south-west
	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	62 km south-east
	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	33 km south-west
	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	155 km south-west
	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	33 km south-east
Lesser Crested Tern	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	238 km south-west
Roseate Tern	Breeding (Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef)	204 km south-west

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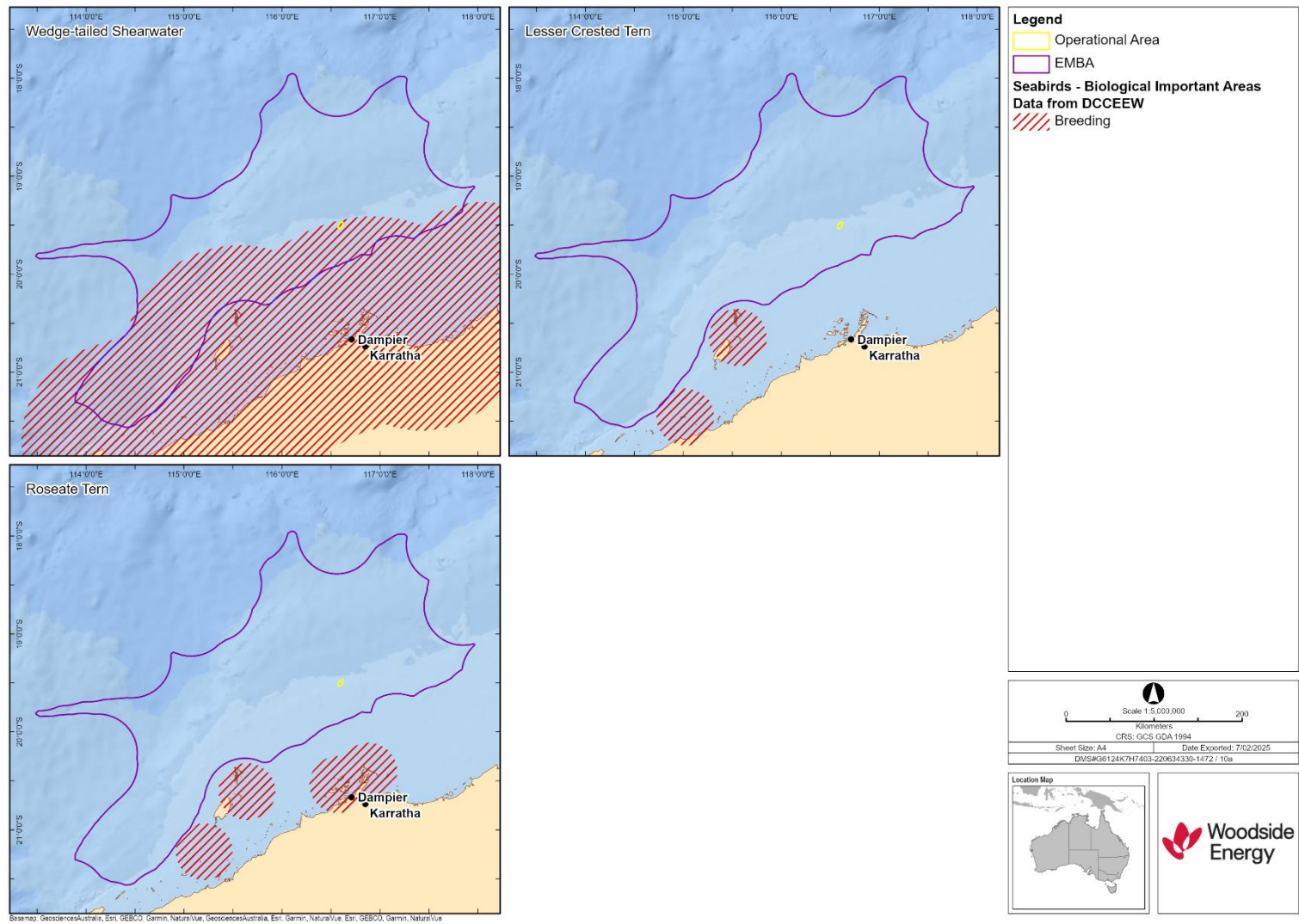


Figure 4-9: Wedge-tailed Shearwater, Lesser Crested Tern and Roseate Tern BIAs overlapping the EMBA



## 4.7 Key ecological features (KEFs)

KEFs within the Operational Area and EMBA are identified in Table 4-14 and described in Appendix C. Figure 4-10 shows the spatial overlap with KEFs and the Operational Area and EMBA.

**Table 4-14: KEFs within the Operational Area and EMBA.**

Key ecological feature	Distance and direction from Operational Area to KEF (km)	Description of spatial overlap
Glomar Shoals	Overlaps	The Operational Area overlaps approximately 0.01% of the KEF (approximately 11.54 ha or 0.11 km <sup>2</sup> ) but is located 7.25 km (from the 50 m depth contour) from the Glomar Shoal feature itself (Figure 4-10). For further information on KEF features and values that are relevant to or may be impacted by the EP activities, refer to Table 4-3 and the Master Existing Document (Appendix C, Table 10-1).
Ancient coastline at 125 m depth contour	2 km north	These KEFs occur within the wider EMBA (Figure 4-10), however, do not overlap with the Operational Area. For further information on KEF features and values that are relevant to or may be impacted by the EP activities, refer to Table 4-3 and the Master Existing Document (Appendix C, Table 10-1).
Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula	294 km south-west	
Continental Slope Demersal Fish Communities	115 km south-west	
Exmouth Plateau	227 km west	

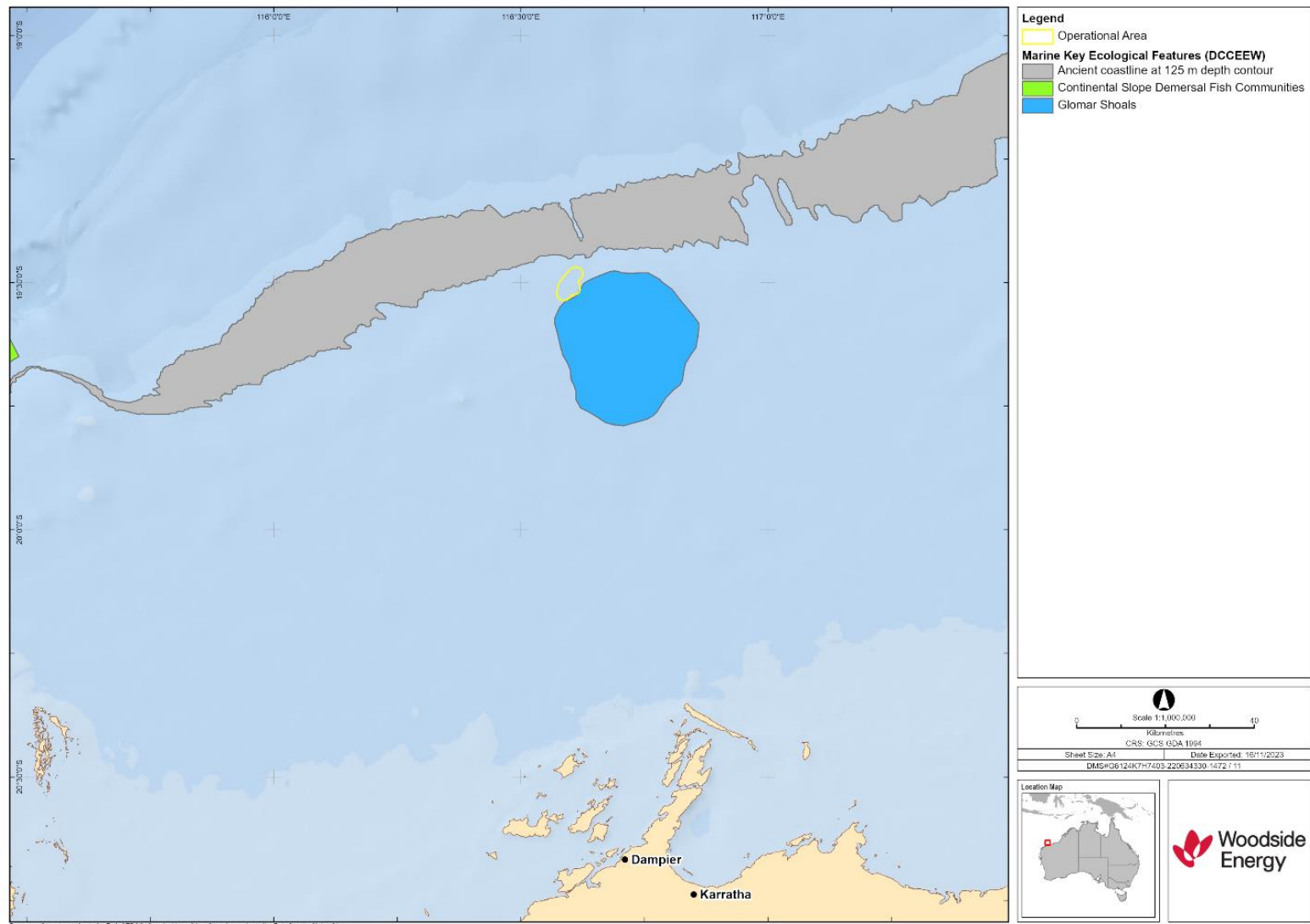


Figure 4-10: KEFs overlapping the Operational Area and EMBA

## 4.8 Protected places

No protected places overlap the Operational Area. Protected places within the EMBA are identified in Table 4-15 and presented in Figure 4-11. Appendix C outlines the values and sensitivities of protected places and other sensitive areas in the Operational Area and EMBA.

**Table 4-15: Established protected places and other sensitive areas overlapping the Operational Area and EMBA**

	Distance and direction from Operational Area to protected place or sensitive area (km)	IUCN category* or relevant park zone overlapping the Operational Area and/or EMBA
<b>AMPs</b>		
<b>NWMR</b>		
Montebello	86 km south-west of Operational Area	Multiple Use Zone (IUCN VI)

\*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 and South-west Marine Parks Network Management Plan 2018.*

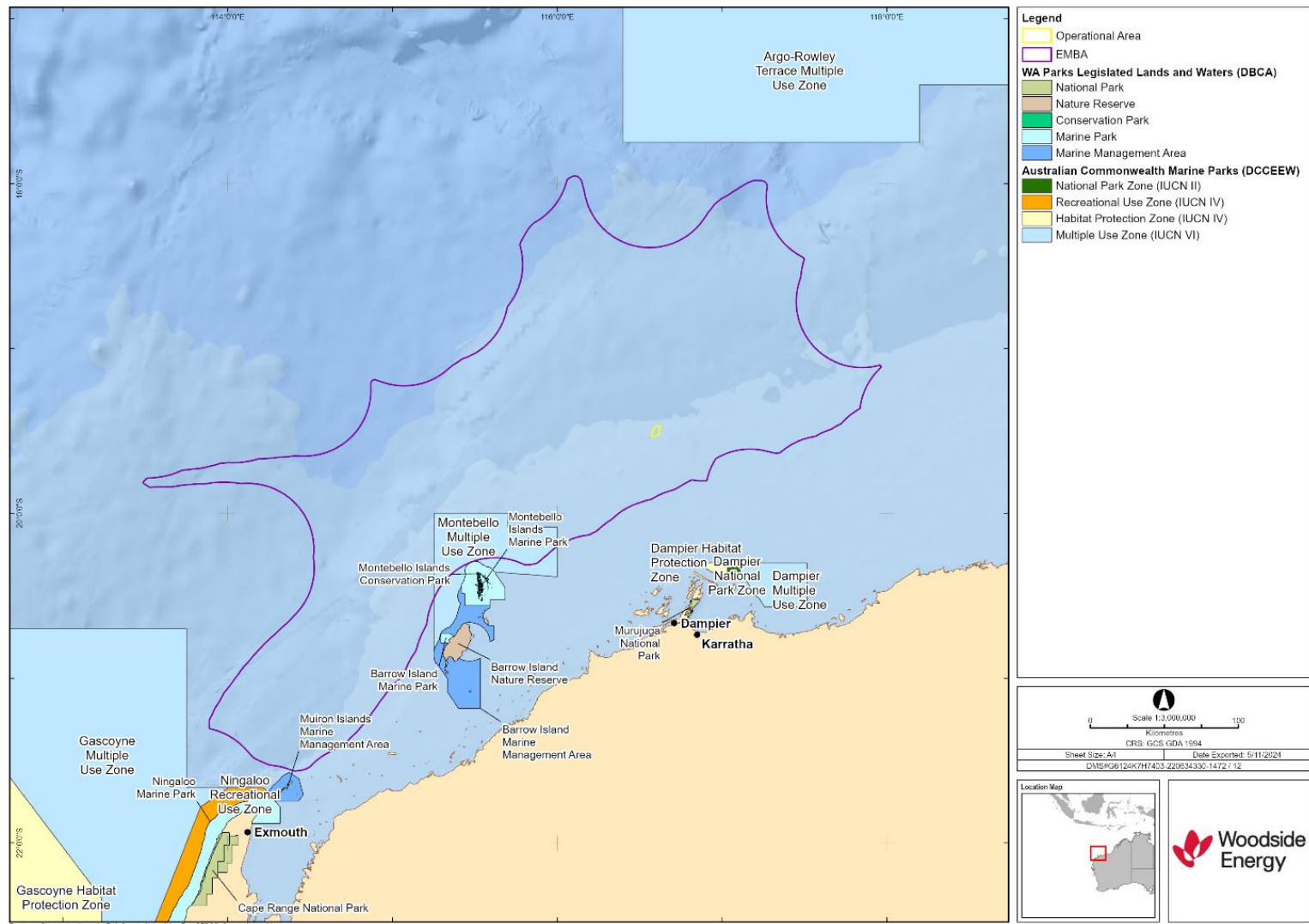


Figure 4-11: Protected areas overlapping the Operational Area and EMBA



## 4.9 Cultural values and heritage

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 these areas are described. Description of cultural values and heritage as they relate to the wider North-west Marine Region (NWMR) are described in Appendix C.

### 4.9.1 Native Title

For the activity described in this EP, no native title claims or Indigenous Land Use Agreements (ILUAs) interact with the Operational Area, there are six native title claims and twelve ILUAs adjacent to the EMBA (Table 4-16). Claims and determinations have not been differentiated in this table, as it is acknowledged that rights and interest may exist within either of these. Figure 4-12 shows the spatial overlap with native title claims and ILUAs.

As a starting point for understanding social and cultural features of the environment for Indigenous (First Nations) groups, Woodside uses the existing systems, such as native title, to identify Indigenous groups that may have functions, interests or activities that may be affected. To that end, Woodside identifies native title representative bodies and nominated representative entities (defined in Section 5), as well as native title claims, determinations and ILUAs which the EMBA overlaps. While acknowledging that cultural features and heritage values may exist outside of the native title framework, Native title claims, determinations and ILUAs are defined under the *Native Title Act 1993* (Cth). Woodside considers this to be the broadest extent over which Indigenous groups have claimed native title rights and interests.

Further description of how Woodside considers native title rights and interest is provided in Appendix C.

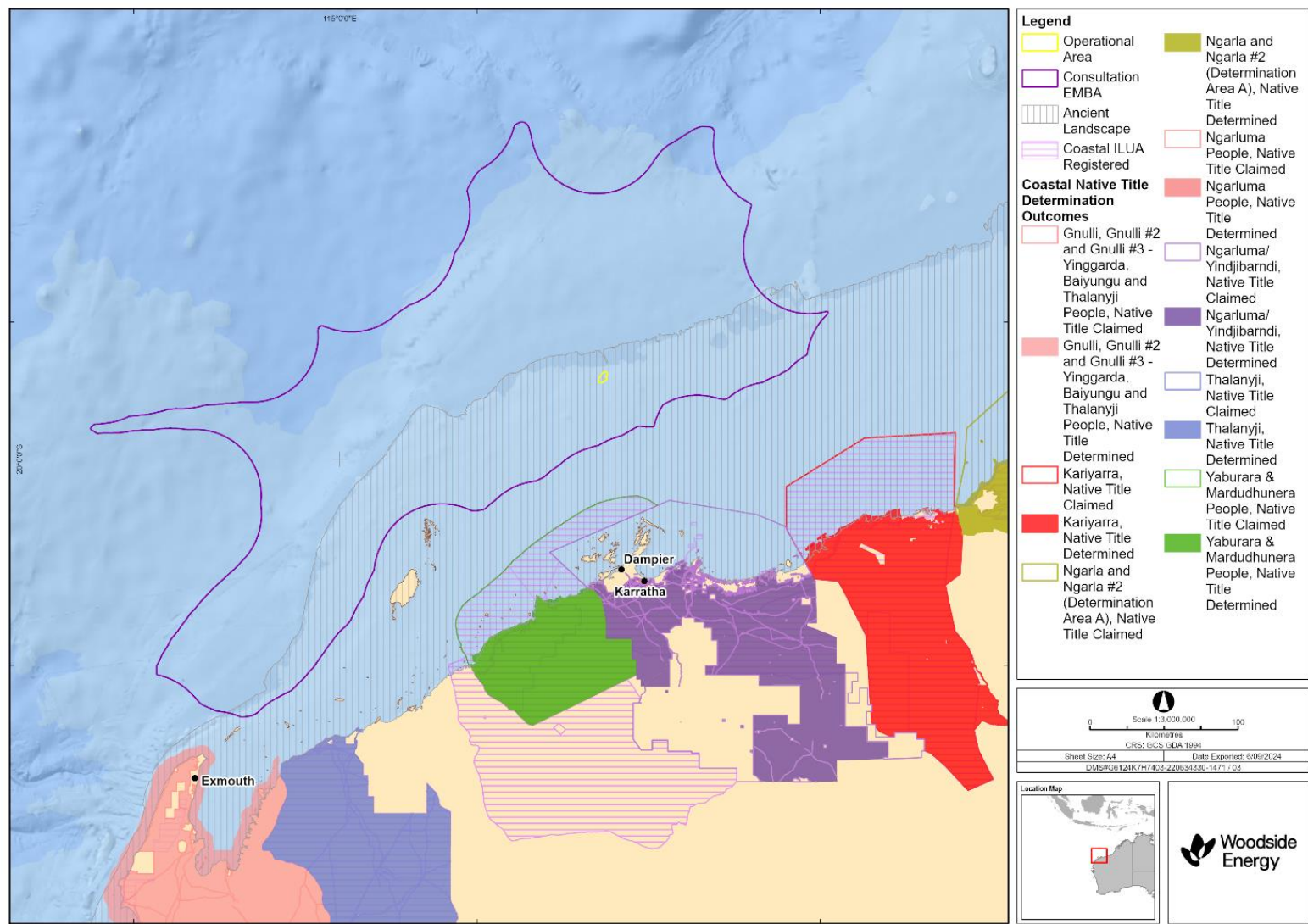


Figure 4-12: Operational Area and socio-economic EMBA in relation to Native Title Claims, Determinations and Indigenous Land Use Agreements

#### 4.9.2 Coastally adjacent First Nations groups

To identify cultural features and heritage values which may exist outside of a 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 Section 5).

Further description of how Woodside engages with coastally adjacent First Nations groups is provided in Appendix C.

**Table 4-16: Summary of Native Title Claims, Determinations and Indigenous Land Use Agreements which overlap or are coastally adjacent to the EMBA**

Claim/ determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally adjacent to the EMBA
<b>Claim/ Determination</b>			
Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People	Nganhurra Thanardi Garrbu Aboriginal Corporation, Yinggarda Aboriginal Corporation	No	Yes
Kariyarra	Kariyarra Aboriginal Corporation	No	Yes
Ngarluma People	Ngarluma Aboriginal Corporation RNTBC	No	Yes
Ngarluma/Yindjibarndi	Yindjibarndi Aboriginal Corporation RNTBC, Ngarluma Aboriginal Corporation RNTBC	No	Yes
Thalanyji	Nganhurra Thanardi Garrbu Aboriginal Corporation, Yinggarda Aboriginal Corporation, Buurabalayji Thalanyji Aboriginal Corporation RNTBC	No	Yes
Yaburara & Mardudhunera People	Wirrawandi Aboriginal Corporation RNTBC	No	Yes
<b>ILUA</b>			
Alinta-Kariyarra Electricity Infrastructure ILUA	Not specified	No	Yes
Anketell Port, Infrastructure Corridor and Industrial Estates Agreement	Ngarluma Aboriginal Corporation RNTBC	No	Yes
Cape Preston Project Deed (YM Mardie ILUA)	Wirrawandi Aboriginal Corporation RNTBC	No	Yes
Cape Preston West Export Facility	Wirrawandi Aboriginal Corporation RNTBC	No	Yes
FMG - Kariyarra Land Access ILUA	Not specified	No	Yes
Kariyarra and State ILUA	Kariyarra Aboriginal Corporation	No	Yes

Claim/ determination/ ILUA	Registered Native Title Body Corporate	Overlap with EMBA	Coastally adjacent to the EMBA
KM & YM Indigenous Land Use Agreement 2018	Wirrawandi Aboriginal Corporation RNTBC, Robe River Kumura Aboriginal Corporation	No	Yes
Kuruma Marthudunera and Yaburara and Coastal Mardudhunera Indigenous Land Use Agreement	Not specified	No	Yes
Macedon ILUA	Buurabalayji Thalanyji Aboriginal Corporation	No	Yes
Ningaloo Conservation Estate ILUA	Nganhurra Thanardi Garrbu Aboriginal Corporation RNTBC	No	Yes
RTIO Kuruma Marthudunera People ILUA	Robe River Kuruma Aboriginal Corporation	No	Yes
RTIO Ngarluma Indigenous Land Use Agreement (Body Corporate Agreement)	Ngarluma Aboriginal Corporation RNTBC	No	Yes

### 4.9.3 Marine Parks

Woodside undertakes an assessment of cultural values within Marine Park Management Plans where the Operational Area or EMBA overlaps a Marine Park.

Woodside considers the management plans of marine parks that overlap the Operational Area and the EMBA to determine whether cultural features and heritage values have been identified and whether there are specified Traditional Custodians or representative bodies referenced to contact regarding potential cultural features and heritage values. For completeness, Woodside considers cultural features and heritage values identified in the management plans, where EP relevant Traditional Custodians or representative bodies are represented. These values are outlined in Table 4-17.

The Operational Area does not overlap any Commonwealth Marine Parks. The EMBA overlaps with features of the Montebello AMP managed under the North-west Marine Parks Network Management Plan 2018 (Director of National Parks, 2018). The EMBA does not overlap any State Marine Parks. Where management plans 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 (Section 5.3). Consultation with these groups may identify heritage values and cultural features beyond those addressed in the marine park management plans.

The North-west Marine Parks Network Management Plan notes for the Montebello AMP that the Yamatji Marlpa Aboriginal Corporation is the relevant Native Title Representative Body.

Where management plans for the AMPs note shipwrecks within the AMPs and overlap with World, National and Commonwealth heritage lists. These are addressed in Sections 4.9.7 and 4.9.8.

### 4.9.4 Sea Country values

Sea country values of marine ecosystems are further described in Appendix C. An impact to marine ecosystems has the potential to impact cultural values where the impact is detectable within Sea Country. Potential impacts to these cultural values are assessed in Section 5.

Woodside initiates consultation on cultural values of Sea Country where Traditional Custodians or representative institutions are identified, or self-identify, as relevant persons.

Cultural features or heritage values related to marine species within the Operational Area or EMBA raised by Traditional Custodians in the course of preparing the EP have been outlined in Section 4.9.4.4. Values identified in publicly available literature are summarised in Section 4.9.4.1.

#### **4.9.4.1 Desktop assessment of Sea Country values**

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 4-17 according to the First Nations groups (where identified or inferable) who hold these values.

**Table 4-17: Cultural features and heritage values identified in publicly available literature**

First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
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)	Possible (unspecified) Possible (unspecified)
	Feature: heritage sites in the Ningaloo region include shell middens, artefact scatters, skeletal material/burial sites, camps, meeting places, hunting places and water sources. Feature: resources including gajalbu (emu), bundgurdi (kangaroo), bardurra (bush turkey), majun (marine turtles), turtle eggs, bilygurumarda (osprey), fish, shellfish and plants. Feature: mudflats, mangroves and sand dunes provide a critical breeding ground for marine and terrestrial wildlife. Value: the Ningaloo region contains cultural heritage dating back at least 32,000 years, including ceremonial thalu sites.  Value: connection to Country is important to the Traditional owners' spirituality and religion.  Value: caring for Country - "The southern coastal reserves along the Ningaloo Coast are jointly managed by Traditional Owners and the DBCA. The Joint Management Body ensures that the Traditional Owners have an opportunity to make decisions about environmental management and land use". This document also includes information that is marked that cannot be copied, reproduced or used without consent.	DBCA 2020	No  Possible (turtles, fish) No (other resources)  No  No  Possible (unspecified)  No (location specific)	No  Possible (turtles) No (other resources)  No  Possible (unspecified, but likely refers to onshore areas outside the EMBA) Possible (unspecified)  Possible (location specific)
	Feature: resources including mangrove crabs, gastropods, shellfish, dugong, turtle.	Morse 1993.	Possible (turtles) No (other resources from a cultural context)	Possible (turtles, dugong) No (other resources from a cultural context)

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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)
Ngarda-Ngarli (Mardudhunera, Ngarluma, Wong-Goo-Tt-Oo, Yaburara and/or Yindjibarndi)	Feature: archaeological sites on Murujuga. Feature: ceremonial sites. Feature: dreaming sites.	UNESCO 2020	No No Possible (unspecified)	No 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. Value: petroglyphs are important in initiation and education.	DEC 2013	Possible (unspecified)  No  No Possible No	Possible (unspecified) Possible (submerged) Possible (submerged) Possible Possible (submerged)
	Value: the sea is acknowledged 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 (turtles, fish) No (dugong) Possible (unspecified)	Possible (turtles, dugong, fish) 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 (seas)	Yes (seas)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: traditional knowledge recalls Pannawonica Hill being carried from the sea near Barrow Island or Murujuga by a spirit bird.	Hook et al 2004.	No	Possible
	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)
	Feature: Submerged First Nations archaeological sites in Cape Bruguieres channel.	Benjamin et al 2020	No	No
	Feature: Submerged First Nations archaeological sites in Cape Flying Foam Passage.	Benjamin et al 2023	No	No
	Value: traditional knowledge recalls Maarga (creation ancestors) lifted the land and sky out of the ocean.	Milroy and Revell 2013 Japingka Aboriginal Art Gallery 2023.	Possible (unspecified)	Possible (unspecified)
	Feature: submerged waterholes related to the Kangaroo songline. Value; traditional knowledge holds that Songlines continue beyond the current coast and across the submerged landscape.	Kearney et al 2023.	Possible Possible (unspecified)	Possible Possible (unspecified)
	Value: songlines are captured through storytelling, rock art, songs and dance, and in the landmarks themselves. Value: Murujuga is the start of many songlines, including the Seven Sisters.	Bainger 2021	Possible (unspecified) No	Possible (unspecified) No
	Value: songlines at Murujuga date back to times when the sea-level was lower.	MAC 2023b.	No	No
	Feature: rock art Feature: sacred sites	Weerianna Street Media Production 2017.	No Possible (unspecified)	No 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 (turtles, fish) No No No Possible (unspecified)	Possible (turtles, fish) No No No Possible (unspecified)
	Feature: resources including mangrove seeds, turtles, turtle eggs) Value: it is recalled that ceremonies were conducted on islands.	Smyth 2007	Possible (turtles) No (other resources)	Possible (turtles) No (other resources)
	Feature: archaeological sites on Murujuga.	McDonald 2015 McDonald 2023	No	No
	Feature: archaeological sites on Enderby Island.	McDonald et al 2023a	No	No
	Feature: archaeological sites on Rosemary Island.	McDonald et al 2023b	No	No
	Feature: petroglyph and other archaeological sites at Murujuga. Feature: archaeological evidence of the use of resources including fish, turtles, marine mammals, crocodiles, crabs and sea urchins.	Dortch et al 2019	No Possible albeit unlikely (submerged)	No Possible (submerged, highly unlikely for most evidence of faunal use to survive inundation)
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 (fish, turtle, vertebrates) No (dugong) Possible (unspecified)	Possible (fish, turtle, dugong, invertebrates) Possible (Barrow Island based on potential shoreline contact) Possible (unspecified)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Feature: resources include turtles, eggs, fish, shellfish and plants.	DBCA et al. 2002	Possible (fish, turtle)	Possible (fish, turtle, eggs, shellfish)
	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)
	Value: access to Barrow and possibly Montebello Islands	Hook et al. 2004	No	No
	Feature: artefact scatters are located in coastal sand dunes.	Hook 2020	No	No
	Feature: burials are located in coastal sand dunes.		No	No
	Value: traditional knowledge recalls a water snake is located in inland waters.		No	No
	Feature: archaeological sites are located on Barrow Island.	Ditchfield et al. 2018 Paterson 2017	No	No
	Feature: archaeological sites are located at Barrow and Montebello Islands.	Dortch et al. 2019.	No	No Possible (submerged, highly unlikely for most evidence of faunal use to survive inundation)
	Feature: archaeological evidence of the use of resources including fish, turtles, marine mammals, crocodiles, crabs and sea urchins.		No	

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	<p>Feature: thalu ceremonial sites for the increase of turtle, shark, ray, fish, squid, octopus, hill kangaroo and emu.</p> <p>Feature: ceremonies.</p> <p>Value: connection to Country.</p> <p>Value: transfer of knowledge.</p> <p>Value: access to Country.</p>	DBCA 2022	<p>No</p> <p>No</p> <p>Possible</p> <p>Possible</p> <p>Possible</p>	<p>Possible (submerged thalu sites e.g., petroglyphs)</p> <p>No (ceremonial use)</p> <p>Possible</p> <p>Possible</p> <p>Possible</p>
Yinggarda	Value: Ongoing connection to Country	FCA [2019]	Yes	Yes
	<p>Value: Right and responsibility to speak and care for Country</p> <p>"We still take care of those ... places. We still have to go and keep them clean, make sure they haven't been disturbed. If we didn't do this, we'd get sick, because the Old People, the spirits would think we weren't taking care of the country. They're watching all the time, if we don't do the right thing, we'll get sick. I take my boys onto country to show them where these places are, so they'll know."</p>		Yes	Yes
	<p>Value: Contemporary use of Country for cultural activities (camp, fish, hunt and gather on their country)</p> <p><i>"The native title holders hunt native game and collect numerous edible or otherwise useful plants. The knowledge of finding, acquiring, preparing and using their natural resources has been passed down through generations. For example, for Baiyungu and Thalanyji families, this includes catching and collecting the marine animals along the coastline, and a specific ritual for consuming emu."</i></p>		Possible (unlikely)	Possible (unspecified)
Ngarluma and Yindjibarndi	<p>Value: Creation Spirits</p> <p>"In our Law it is said that in the beginning the sky was very low. When the creation spirits got up from the ground, they lifted the sky and the world out of the sea"</p>	Rijavec (2004)	Possible (unspecified)	Possible (unspecified)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: Submerged Landscape  "sea as an inseparable extension of the land"	Ward et al. (2022)	Yes	Yes
	Value: Songlines Features: Rock Art  "Songlines are like historical events captured in a few different ways, through storytelling, rock art, songs and dance, and in the landmarks themselves," says Clinton Walker, a Ngarluma and Yindjibarndi man who calls Western Australia's sun-baked Pilbara home. "Aboriginal people use songlines as a means of navigation, following all the landmarks they sing about. You may not have been there, but the songs give you enough information to find your way. Our people learn hundreds of songs."	Australian Broadcasting Corporation (2017)	Possible (unspecified)	Possible (unspecified)
			No (Rock Art)	Possible (Submerged) (Rock Art)
	Value: Built heritage		No	No
	Feature: Murujuga "Murujuga is a significant place for Aboriginal people across the Pilbara and beyond. It is the starting place for some of our song lines."	ICOMOS (2023)	No	No
	Feature: Submerged Landscape "There are songlines that our Elders share today that date back to the time before sea levels rose and turned the hills and valleys of Murujuga into submerged landscapes and the islands of the Dampier Archipelago today"		Possible	Possible
	Value: Intergenerational Knowledge "For us, as Ngarda-Ngarli, we hope by sharing knowledge and educating people, we can fulfil our responsibilities to care for our country going into the future."		Possible (unspecified)	Possible (unspecified)
	Feature: Archaeological Sites [Shark Bay] Archaeological sites around Shark Bay tend to be close to the shoreline		No (location specific)	No (location specific)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	<p>Feature: Submerged Landscape</p> <p>Aboriginal people of north-western Australia have been sustainably using and managing their sea country for tens of thousands of years, in some cases since before rising sea levels created these marine environments.</p>	Australian Marine Parks (2018)	Possible	Possible
	<p>Value: Sea Country</p> <p>Value: Rights and responsibilities over sea country</p> <p>"Sea country is valued for Indigenous cultural identity, health and wellbeing."</p>		Possible (unspecified)	Possible (unspecified)
	<p>Value: Marine Animals</p> <p>Value: Spiritual totems</p> <p>Value: Songlines</p> <p>It is recognised that spiritual corridors extend from terrestrial areas into nearshore and offshore waters, a number of marine animals are totems for Indigenous people, and that songlines pass through marine parks.</p>		<p>Yes</p> <p>Possible (unspecified)</p> <p>Possible(unspecified)</p>	<p>Yes</p> <p>Possible (unspecified)</p> <p>Possible(unspecified)</p>
	<p>Value: Creation Stories</p> <p>Murujuga as "where the Law came up out of the sea and travelled inland"</p>	Leach (2021)	Possible (unspecified)	Possible (unspecified)
	<p>Value: Archaeological sites</p> <p>Feature: Shell midden sites on coast</p>		No	No
	<p>Value: Songlines/ Cermonies</p> <p>Our songs and ceremony are also in the sea, they are running through the sea, both along the bottom of the sea and they also rise and travel on the surface of the sea. White people think the sea is empty that it has no law, but "the law and the ceremony is there in the saltwater, in the fish, in the sea birds, the dugong and the turtle, it is there and we knowledgeable people are holding it."</p>		<p>Possible (unspecified)</p> <p>No (dugong)</p>	Possible (all)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	The terms 'Sea Country' or 'Saltwater Country' refer to coastal, island and marine environments that together make up the traditional estates of maritime Indigenous groups in Australia (Smyth 1997):	Smyth (2008)		
	<p>Value: Sea Country</p> <p>The ocean, or saltwater country, is not additional to a clan estate on land, it is inseparable from it. As on land, saltwater country contains evidence of the Dreamtime events by which all geographic features, animals, plants and people were created. It contains sacred sites, often related to these creation events, and it contains tracks, or Songlines along which mythological beings travelled during the Dreamtime or creation period. The sea, like the land, is integral to the identity of each clan, and clan members have a kin relationship to the important marine animals, plants, tides and currents.</p> <p>It is recognised that Indigenous people have been sustainably using and managing their sea country, including areas now included within Australian Marine Parks, for thousands of years—in some cases since before rising sea levels created these marine environments.</p>	Australian Marine Parks (2018)	Possible (unspecified)	Possible (unspecified)
	<p>Value: Submerged Landscape</p> <p>Aboriginal people of north-western Australia have been sustainably using and managing their sea country for tens of thousands of years, in some cases since before rising sea levels created these marine environments.</p>		Possible	Possible
	<p>Value: Rights and Responsibility over Sea Country</p> <p>Aboriginal people continue to assert inherited rights and responsibilities over sea country within the North- west Network. It is recognised that spiritual corridors extend from terrestrial areas into nearshore and offshore waters, a number of marine animals are totems for Indigenous people, and that songlines pass through marine parks.</p>		Possible (unspecified)	Possible (unspecified)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: Access to sea country Value: Hunting/ Fishing rights		Yes (Access restricted to OA only)	No (Access restricted to OA only)
	Value: Barrow Island and Montebello Islands Feature: Limestone Caves/ Archaeological Assemblages	Dortch et al. (2019)	No (location specific)	No (location specific)
	Value: Murujuga National Park		No (location specific)	No (location specific)
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.	Benjamin et al (2020)	No	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	Possible (submerged)

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First Nations group	Features and values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: sea country includes values, places, resources, stories and cultural obligations. Value: activities relating to resources included: <ul style="list-style-type: none"> <li>• dugong hunting</li> <li>• turtle hunting</li> <li>• turtle egg collecting</li> <li>• seabird egg collecting</li> <li>• spearing fish</li> <li>• reef trapping fish</li> <li>• herding fish</li> <li>• line fishing</li> <li>• collecting fish in stone fish traps</li> <li>• poisoning fish</li> </ul> gathering shellfish and other marine resources.	Smyth (2007)	Possible (unspecified)  No (activities)	Possible (unspecified)  Unlikely to occur (activities and fauna present)
	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)	Likely to occur  No	Likely to occur  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   No	Possible (unspecified) Possible (submerged, highly unlikely for most evidence of faunal use to survive inundation) Possible (unspecified)

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#### 4.9.4.2 First Nations archaeological heritage assessment

First Nations archaeological heritage in relation to the North-west Marine Region (NWMR) is described in Appendix C.

The Department of Planning, Lands and Heritage (DPLH) Aboriginal Heritage Inquiry system was searched, which showed 0 Registered Aboriginal Sites for the EMBA (Appendix J). The exact location, access, and traditional practices for a number of these sites may not be disclosed and if required, such as in the event of a major hydrocarbon release, would involve prioritising further consultation with key contacts within DPLH and relevant local First Nations communities.

#### 4.9.4.3 Submerged cultural heritage values

Planned activities overlapping the Ancient Landscape have potential for seabed disturbance as outlined in Section 4. Woodside engages a consultant to undertake a desktop review based on geophysical and bathymetric data, for the potential of submerged archaeological material, in any areas subject to seabed disturbance and at a depth of less than 130 m. This approach is consistent with the draft guidelines for working in the near and offshore environment to protect Underwater Cultural Heritage (DCCEEW, 2023) (see Section 6.7.2). An assessment of the broader surrounding area (Nutley, 2023) recommended additional survey of the operational area. An assessment of the potential for underwater cultural heritage is scheduled to be undertaken prior to the commencement of the proposed activity. An assessment of the potential impacts on archaeological material and management controls are outlined in Sections 6.7 and 6.8.

Further information regarding First Nations archaeological heritage in relation to the Ancient Landscape in the North-west Marine Region (NWMR) is described in Appendix C.

#### 4.9.4.4 Feedback received via consultation to inform Existing Environment Description

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 with relevant persons, Registered Native Title Bodies Corporate have identified or raised topics relating to environmental values of cultural interest. These include a broad interest in the marine fauna, including whales and turtles.

Feedback received on potential cultural features and heritage values during consultation are described in Table 4-18.

Woodside has committed to ongoing engagement to further understand these values. 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 (see Section 7.7).

**Table 4-18: Summary of feedback received via consultation to inform Existing Environment Description**

Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
Buurabalayji Thalanyji Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Connection to Sea Country  Enduring deep connection to sea country north of Onslow, extending out to Islands off the Pilbara coast such as the Montebello islands, Barrow Island and the Mackerel Islands	Possible	Possible
Gogolayngor Aboriginal Corporation	Consultation for this EP	<i>No values raised</i>	-	-
Karajarri Traditional Lands Association	Consultation for this EP	<i>No values raised</i>	-	-
Kariyarra Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Turtles	Possible	Possible
		Value: Access to Sea Country  (1) Accessing Sea Country for fishing, trapping, crabbing catching turtle, hunting dugong, using stingray barbs for spears and collecting shellfish.  (2) Visiting offshore islands at low tide	No (all)	Possible (all)
		Value: Marine species resources  Resource species of cultural interest to Kariyarra people include marine mammals, fish, molluscs including bivalves, gastropods and cephalopods.	Possible	Possible
		Value: The existence of intangible cultural heritage including the Yinta (associated with Sea Country).  From Kariyarra Native Title documents it is clear that Yinta are significant cultural/spiritual sites, often a pool or water source but possibly a hill or other feature.	Possible	Possible

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		These are, at least generally, associated with creation beings and are a core part of cultural rights to land in determining who can use or speak for an area.		
		Interest: Coastal Landforms (Cultural interest)	No	No
		Interest: Coastal Native Vegetation (Cultural interest)	No	No
		Feature: Cultural interest in cultural heritage sites associated with the coast and the ocean.	No	No
		Value: Traditional fishing and gathering rights in the ocean	No	Possible
		Value: Cultural interest in intangible cultural heritage associated with the coast and the ocean. (1) Presence of mythic snakes	Possible (ocean only /unspecified)	Possible (ocean only /unspecified)
		Value: Intergenerational Knowledge <i>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. Impacts to resource collection would be limited to temporary exclusion in areas where there are hydrocarbons present, including shoreline accumulation. Relevant cultural authorities will be engaged in the event of a spill that may affect them...</i>	Possible	Possible
		Value: Cultural obligations to care for Country, including Sea Country. Value: Secret Habitat Totems associated with Sea Country	Possible (Unspecified)	Possible (Unspecified)

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		Interest: Assertion of sea rights in native title claim area Interpreted as general connection to country, assertion of rights to access country and cultural obligation to care for environmental values of sea country  (1) Having duties to look after and protect all KACs Sea Country.	No (based on NT determined area)	No (based on NT determined area)
		Value: Whales (Connection to Songlines)  Impacts to whale migration	Possible (whales and songlines)	Possible (whales and songlines)
		Value: Sea Turtle Nesting	No	No
		Value: Food Resources	Possible (unspecified)	Possible (unspecified)
Murujuga Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Mermaid Sound  (1) The ecosystem health of Mermaid Sound	No	No
		Value: Whales  (1) Whales and other species of totemic importance need to be protected, including their populations, biodiversity, and migration patterns.  (2) A whale Thalu is an increase at the totemic site that brings whales into the beach.	Possible (all)	Possible (all)
		Value: Dolphins  There are cultural ceremonies associated with communicating with dolphins	Possible	Possible
		Value: Dugongs  Dugongs are a food source associated with seagrasses near Gidley Island	Possible	Possible
		Value: Fish  Specific mentions of fish included There are Thalu ceremonies associated with increasing fish stocks	Possible	Possible

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		Value: Sea Snakes  Sea snakes were specifically mentioned as culturally important species	Possible	Possible
		Value: Turtles  (1) Flatback, green, hawksbill, loggerhead and leatherback turtles; Songline 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.  (2) Flatback, green, hawksbill, loggerhead and leatherback turtles: They are culturally important species that moves through Mermaid Sound. Turtles are most often seen in shallower areas and where there are seagrasses.  (3) Most beaches are nesting sites for turtles, including those on Gidley and Legendre Islands... which also identifies Rosemary Island as the most important hawksbill turtle nesting site in Western Australia.	Possible (1,2)  No (3)	Possible (all)
		Feature: Coral  Concerned about coral bleaching because corals are important. Beautiful colours. They also attract a lot of other things.  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).  Locations identified during consultation include Withnell Bay; Conzinc Bay; south west of Legendre Island.	No	Possible
		Feature: Seagrass  (1) Seagrasses provide protection for animals.  (2) Locations identified during consultation include Conzinc Island; between Angel and Gidley Islands.	No	Possible

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		Feature: Mangroves  (1) Mangroves would have provided shelter, crabbing, digging for shellfish, could be turtle nurseries. Locations identified during consultation include Conzinc Bay north end; Flying Foam Passage; Searipple Passage; north-east bay of West Lewis Island.	No	Possible
		Feature: Macroalgal communities  Are important primary production sites, habitats, and food sources (not explicitly identified by elders).	No	Possible
		Feature: Subtidal soft-bottom communities  Support invertebrate diversity (not explicitly identified by elders).	No	Possible
		Feature: Intertidal sand and mudflat communities  Important primary production sites, support invertebrate diversity and provide food for shorebirds (not explicitly identified by elders).	No	Possible
		Feature: Rocky shores  Habitats for intertidal organisms and provide food for shorebirds (not explicitly identified by elders).	No	Possible
		Feature: Other areas of Mermaid Sound of importance (including Conzinc Bay)  (1) 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.	No	Possible
		Value: Squid  (1) Squidding (harvesting of squid from the ocean) around Conzinc Bay	No (based on specific location)	Possible
		Value: Appropriate cultural authority for Murujuga.	No	Possible
		Interest: Management of onshore heritage sites	No	No

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		Interest: Submerged Heritage Engage with researchers on options to identify potential submerged heritage.	Possible	Possible
		Value: Songlines The potential impact on Jinna (Songlines) due to the lack of broader-scale bathymetric information for the submerged landscape	Possible	Possible
		Value: Whales and Whale Sharks	Possible (both)	Possible (both)
		Feature: Marine parks	No	Possible
Ngarluma Aboriginal Corporation	Raised during the course of consultation for another EP	Interest: Management of onshore heritage sites	No	No
		Interest: Submerged Heritage Engage with researchers on options to identify potential submerged heritage.	Possible	Possible
Nimanburr Aboriginal Corporation	Consultation for this EP	<i>No values raised</i>	-	-
Nyangumarta Warrarn Aboriginal Corporation	Consultation for this EP	Value: Eighty Mile Beach <i>priority is to protect Eighty Mile Beach due to its cultural and ecological value to the Nyangumarta Custodians</i>	No	No
		Impacts of migrating birds (1), whales (2), turtles (3) and vegetation (4)	Possible 1,2 and 3	Possible (all)
Nyangumarta Karajarri Aboriginal Corporation	Consultation for this EP	<i>No values raised</i>	-	-
Nyul Nyul Aboriginal Corporation	Consultation for this EP	<i>No values raised</i>	-	-

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
Robe River Kuruma Aboriginal Corporation	Raised during the course of consultation for another EP	Feature: Coastline Environmental incidents (oil spill) impacting the coast	No	Possible
		Feature: Underwater heritage	Possible	Possible
Wanparta Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Connection to Sea Country <i>The Ngarla People have a deep spiritual connection to Sea Country</i>	Possible	Possible
		Feature: Nearshore Islands (particularly Solitary Island/ Jarrkunpungu) Value: Intangible Cultural Heritage (Dreaming Stories)  (1) Wanparta stated that they are linked to the dreaming stories through the interconnecting islands  (2) Wanparta legal representative highlighted that there are Dreamtime stories through the nearshore island (Solitary Island/ Jarrkunpungu)	No (all)	Possible (all)
		Value: Cultural Obligation to look after Sea Country Values  <i>Extremely important to Ngarla people, and they feel a responsibility to look after the ocean and lore.</i>	Possible	Possible
		Feature: Sea (Fresh and Salt Water) Value: Intangible Cultural Heritage (Dreaming Stories)  <i>Comments that we are a sea people connected through both fresh and salt water with Dreamtime stories that do connect through the sea.</i>	Possible	Possible

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		<p>Feature: Sea (Ocean/Water)</p> <p>(1) Wanparta noted that they feel a sense of responsibility to keep looking after the ocean. They noted that they are very connected to the health of the ocean, they have a sense of responsibility to look after the ocean (Law and culture). If impacted, this would impact future generations and how Law is practiced</p> <p>(2) Wanparta legal representative explained the emblems and totems reflected on the Wanparta Aboriginal Corporation logo. She noted that the dark blue on the logo represents the ocean (and that their Native Title) extends into the ocean).</p> <p>(3) The importance of water was emphasised by the group</p> <p>(4) Protection and management of marine life and healthy ocean plays a significant role in lore, culture and customs</p>	Possible (all)	Possible (all)
		<p>Value: Marine Species</p> <p>Wanparta legal representative explained the emblems and totems reflected on the Wanparta Aboriginal Corporation logo. The animals depicted on the logo are totemic species and include the (1) Kestrel, (2) Octopus, (3) Spiny Brim and (4) Sting Ray.</p>	(1) No Possible (2,3,4)	(1) No Possible (2,3,4)
Wirrawandi Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Whales (General interest around management of impacts to whales)	Possible	Possible
		Value: Turtles (General interest around management) Wirrawandi asked whether turtle monitoring programs are still in place	Possible	Possible
		Feature: Rock art  Wirrawandi asked whether air emissions from activities impacts rock art & what Woodside does to minimise impacts to rock art. Wirrawandi also asked for more community information on rock art.	No	Possible (submerged)
		Interest: Submerged heritage	Possible	Possible

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		(1) Wirrawandi asked where sites of underwater heritage have been recently found  (2) Wirrawandi asked about impacts to the seabed from planned activities, and what is considered in relation to submerged cultural heritage, particularly given the recent finding of artefacts.		
Yawuru Native Title Holders Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Yindjibarndi Aboriginal Corporation	Consultation for this EP	No values raised	-	-
Yinggarda Aboriginal Corporation	Raised during the course of consultation for another EP	Value: Coastal Fishing  Local communities enjoy fishing along the coast, including for (1) Shark Bay Mullet that is an important resource.	No	Possible
		Value: Ecosystem Health  Plants, animals and the environment are inexorably linked to their culture	Possible	Possible
		Value: Dugongs	Possible	Possible
		Feature: Seagrass  Important food source for dugongs (Shark Bay)	No	Possible
		Value: Whales  1) potential impact to migration patterns of whales;  (2) and potential collisions with vessels	Possible	Possible
NATIVE TITLE REPRESENTATIVE BODIES				
Kimberly Land Council	Consultation for this EP	No values raised	-	-

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
Yamatji Marlpa Aboriginal Corporation (YMAC)	Consultation for this EP	<i>No values raised</i>	-	-
<b>SELF-IDENTIFIED FIRST NATIONS GROUPS</b>				
Ngarluma Yindjibarndi Foundation Ltd	Consultation for this EP	<i>No values raised</i>	-	-
<b>OTHER FIRST NATIONS GROUPS</b>				
Save Our Songlines, [Individual 20] and [Individual 1]	Consultation for this EP	<i>See values raised in previous consultation</i>	-	-
	Raised specific to Petroleum Activities Program Raised in context of general Scarborough Project activities	Feature: Songlines, dreaming and energy lines (unspecified)	Possible (unspecified)	Possible (unspecified)
		Feature: Whales – including migratory patterns	Possible	Possible
		Interest: Turtles – including migration patterns	Possible	Possible
		Interest: Dugongs - unspecified	Possible	Possible
		Interest: Plankton - unspecified	Possible	Possible
		Interest: Seagrass - unspecified	No	Possible
		Interest: where saltwater and freshwater meet	No	Possible
	Raised in Concise Statement and Affidavit <sup>3</sup> in context of Scarborough seismic activities	Value: Caring for Country [Individual 1] asserts she and [Individual 20] are holders of women's lore with cultural obligations to protect, preserve and promote the environment, animals and plants threatened by the Activity (specific to Seismic) [Individual 1] asserts the spiritual health and wellbeing of Murujuga and all the plants and animals present on Murujuga and connected to the songlines in and around Murujuga	Possible (unspecified)	Possible (unspecified)
		Feature: Whales [Individual 1] asserts the following values:	Possible (whales)	Possible (whales)

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		<p>"Whales carry important songlines, the whale Dreaming, and connection between land and sea"</p> <p>"As the biggest animal on earth, the whale has the greatest heart connection to songlines, people and animals and carries the songlines around the ocean, connecting places."</p> <p>"Whale Dreaming story has a strong connection to the heart centre in each person, this story helps people to open up and to realise, understand and raise awareness of the environment and everything humans are connected to."</p> <p>"In their own families, female whales have a caretaker or midwife role, and those who are connected to the Whale Dreaming and carry the women's lore also have obligations as caretakers of the earth."</p> <p>"The women's lore that [Individual 20] and [Individual 1] carry is the songline of the whale, which is important for sustaining the creation of all animals and humans."</p> <p>"[Individual 20] and [Individual 1] connect to the whales like this through their songlines, they sing to the whales, the whales feel that song and the connection through their hearts, regardless of the distance."</p> <p>"the whales tell [Individual 20] and [Individual 1] a story, and [Individual 20] and [Individual 1] are the people who feel and who are connected to that story. [Individual 20] and [Individual 1] have that feeling of connection inside them all the time, they live and breathe it, they are in and everything about it."</p> <p>"Because each animal uses songlines for migration, breeding and feeding, the disruption or distortion to the songlines causes the animals to become disoriented, confused or lost."</p>	Possible (songlines, unspecified)	Possible (songlines, unspecified)
		<p>Interest: Whales</p> <p>Interest: Pygmy Blue whales</p> <p>"Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to</p> <ul style="list-style-type: none"> <li>ii. behavioural changes (leaving or avoiding the area where the Activity occurs) to turtles, pelagic fish (such as tuna and billfish), sharks, pygmy blue whales</li> <li>iii. whales' sonar communications systems, particularly between mothers and calves, from sound and vibrations emitted by the Activity</li> </ul>	Possible (whales)	Possible (whales)

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon); and vi. vehicle collision and/or entanglement with marine fauna"		
		Interest: Turtles "Other animals, such as turtles, dolphins, dugongs, and krill follow the whale's songlines, because they're all connected together - the whale creates a path for the other animals like 'grading a road'. "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: ii. behavioural changes (leaving or avoiding the area where the Activity occurs) to turtles, pelagic fish (such as tuna and billfish), sharks, pygmy blue whales v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon); and vi. vehicle collision and/or entanglement with marine fauna"	Possible (turtles)	Possible (turtles)
		Interest: Dugongs "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon)"	Possible (dugong)	Possible (dugong)
		Interest: Pelagic fish "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: ii. behavioural changes (leaving or avoiding the area where the Activity occurs) to turtles, pelagic fish (such as tuna and billfish), sharks, pygmy blue whales"	Possible (fish)	Possible (fish)
		Interest: Sharks "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to:	Possible (sharks)	Possible (sharks)

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Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		ii. behavioural changes (leaving or avoiding the area where the Activity occurs) to turtles, pelagic fish (such as tuna and billfish), sharks, pygmy blue whales v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon)"		
		Interest: Plankton "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: i. chronic mortality to some marine organisms, including zooplankton	Possible	Possible
		Interest: Water quality "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: iv. potential operational discharges associated with the presence of ships in the area, including potential impacts to water quality v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon)	Yes	Yes
		Interest: Seabirds "Potential impacts on marine species and natural environment, relevant to the natural environment, relevant to the Applicant's interests, including but not limited to: v. potential impacts on water quality and consequent potential impacts on marine fauna such as whales, dugongs, sharks, rays, and seabirds from the risk of unplanned chemical discharges (non-hydrocarbon)	Possible	Possible
		Interest: Where saltwater and freshwater meet "The places where the saltwater from the sea and the freshwater from the land connect are where the biggest energy lines <sup>11</sup> are, and that connection is a core of creation relevant to a Dreaming story."	No	No

<sup>11</sup> Although [Individual 1], [Individual 20] and Save our Songlines referred to and described Energy Lines, these are understood to be the same as songlines and this document therefore refers to songlines

Relevant First Nations Group / Individuals	Context	Description of Value / Feature / Interest	Potential for Overlap	
			Operational Area	EMBA
		Value: Rock Art "Rocks at Murujuga symbolise stories, the totems (the depicted artwork) - whether representing plants or animals - and tell a story of their history, and how long they've been there."	No	Possible (submerged)
		Value: Bungarra, Eagle, Kangaroo Identified totemic species	No (all)	No (all)
		Interest: Murujuga "When [Individual 20] and [Individual 1] and their people stand on Country they are connected to their songlines through the rocks. As holders of women's lore, [Individual 20] and [Individual 1] put healing energy into the rocks and use that to heal the songlines." "[Individual 20] and [Individual 1] connect to their bloodline, old people and songlines through Country, including the rocks at Murujuga, which are encrypted with ancient stories that keep connection to the bloodline and songlines alive and well."	No	No

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#### **4.9.5 Summary of cultural features and heritage values**

Woodside has developed a robust understanding of cultural features and heritage values relevant to the activity through examination of publicly available information, studies and consultation with relevant persons under Regulation 25 of the Environment Regulations.

A summary of cultural features and heritage values identified through both consultation and desktop assessment is provided in Table 4-19. As previously described, topics which have been raised in the context of an interest linked to the natural environment are impact and risk assessed in Section 6.



Table 4-19 Summary of cultural features and heritage values

Identified cultural features and heritage values	Context	EP Source		Potential for overlap	
		Consultation Feedback	Desktop Literature Assessment	Operational Area	EMBA
Archaeological Heritage and Landscapes					
Coastal/ island archaeological sites	Coastal archaeological sites include shell middens, artefact scatters, skeletal material/burial sites, camps, meeting places, hunting places and water sources.	✓	✓	No	No
Petroglyphs	Petroglyphs are a form of rock art. Petroglyphs are a prominent feature particularly at Murujuga where it is found on hard, volcanic rock.	✓	✓	Unlikely (submerged)	Unlikely (submerged)
Fish traps	Stone arrangements constructed in intertidal areas which fill with fish at high tide and trap them at low tide.	x	✓	No	Unlikely (submerged)
Submerged archaeological sites	The Ancient Landscape extends between 125m and 130m below current sea level. Ancient occupation of this area may have left traces through now submerged archaeological sites.	✓	✓	No	Possible
Rivers, waterholes, tidal channels and seeps	Water sources on the Ancient Landscape which may be culturally significant or archeologically prospective.	x	x	No	Possible
Submerged hills	Hills on the Ancient Landscape which may be culturally significant or archeologically prospective. As sea level rose these hills would have become islands and eventually submerged.	x	x	No	Possible
Intangible values					
Songlines	Publicly available literature talks to Songlines associated with ancestral beings that travelled Sea Country.	✓	✓	Possible (unspecified)	Possible (unspecified)
Creation/ Dreaming sites, sacred sites and ancestral beings	Publicly available literature talks to creation/dreaming and ancestral beings, including water serpents, connected to or originating from the sea generally.	✓	✓	Possible (unspecified)	Possible (unspecified)
Ceremonial sites	Places where ceremony (e.g. thalu ceremonies) are performed. All identified ceremonial sites are located onshore.	✓	✓	No	No

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Identified cultural features and heritage values	Context	EP Source		Potential for overlap	
		Consultation Feedback	Desktop Literature Assessment	Operational Area	EMBA
Cultural obligations to care for Country	Cultural obligation to care for the environmental values of Sea Country. Exclusion of Traditional Custodians from Sea Country or decision making processes may inhibit ability to care for Country.	✓	✓	Possible (unspecified)	Possible (unspecified)
Knowledge of Country/ customary law and transfer of knowledge	The preservation and transmission of knowledge is dependent on the preservation of the environment generally. Exclusion of Traditional Custodians from Sea Country may inhibit the transfer of knowledge.	✓	✓	Possible (unspecified)	Possible (unspecified)
Connection to Country	Connection to Country is described in publicly available literature as “important to the Traditional owners’ spirituality and religion”. 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	✓	✓	Possible (unspecified)	Possible (unspecified)
Access to Country	Limitations on Traditional Custodians accessing or enjoying areas of Sea Country	✓	✓	No	No (No limitations on access beyond the Operational Area)
Kinship systems and totemic species	Traditional Custodians have connection to species through kinship and totemic systems. An individual may have obligation to care for or not consume a species to which they are kin.	✓	✓	Possible	Possible
Resource collection	Fishing, hunting, gathering of marine species including marine mammals, marine reptiles, fish and invertebrates.	✓	✓	No	Unlikely
<b>Marine ecosystems and species</b>					
Water quality	Interest only, raised as a natural environment interest	✓	x	Possible	Possible
Marine species	Generally raised in consultation and literature as an interest	✓	✓	Possible	Possible

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Identified cultural features and heritage values	Context	EP Source		Potential for overlap	
		Consultation Feedback	Desktop Literature Assessment	Operational Area	EMBA
Marine mammals: Whales	Generally raised in consultation and identified in publicly available literature Thalu species of totemic importance Linked to Songlines and Dreaming stories Humpback whales in particular	✓	✓	Possible	Possible
Marine mammals: Dolphins	Cultural ceremonies associated with dolphins Culturally important species	✓	✓	Possible	Possible
Marine mammals: Dugongs	Culturally important species Used as a resource	✓	✓	Possible	Possible
Marine reptiles: Marine turtles	Culturally important species and migration There are Thalu ceremonies associated with turtles Turtles and turtle eggs as a resource	✓	✓	Possible	Possible
Fish: Fish, whale sharks, sharks and rays	Culturally important species Used as a resource Law run through the sea, including fish There are Thalu ceremonies associated with increasing fish stocks Fish, including bream and sting rays are totemic species Fish, including sharks and rays raised as a natural environment interest	✓	✓	Possible	Possible
Cephalopods: Squid and Octopus	Thalu species of totemic importance Resource	✓	✓	Possible	Possible
Intertidal communities: Bivalves, gastropods, echinoderms (sea urchins), crustaceans	Resource.	✓	✓	No	Possible
Seabirds	Culturally important species Birds (including shags, seagulls and osprey) and bird eggs as a resource	✓	✓	Possible	Possible

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Identified cultural features and heritage values	Context	EP Source		Potential for overlap	
		Consultation Feedback	Desktop Literature Assessment	Operational Area	EMBA
Benthic habitats: Macroalgal communities	Interest only, raised as a natural environment interest.	✓	x	No	Possible
Shoreline habitats: Mangroves	Critical breeding ground for marine and terrestrial wildlife. Mangroves would have provided shelter, crabbing, digging for shellfish, could be turtle nurseries. Mangrove seeds as resource	✓	✓	No	No
Shoreline habitats: Intertidal sand/ mudflat communities	Interest only, raised as a natural environment interest.	✓	x	No	No
Shorelines	Interest only, raised as a natural environment interest.	✓	x	No	No
Marine Park/ coastal reserves	Interest and responsibility	✓	✓	No	Possible

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#### 4.9.6 Historic sites of significance

There are no known sites of historic cultural heritage significance within the Operational Area. Appendix C Section 11.1.2 describes cultural heritage sites within the EMBA.

#### 4.9.7 Historic underwater heritage

The protection of historic underwater heritage under Commonwealth and State legislation is described in Appendix C.

The Australasian Underwater Cultural Heritage database records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics and other underwater cultural heritage) in Australian waters. The Australian National Shipwreck Database lists all known shipwrecks in Australian waters. A search of these databases indicated that there are no sites within 10 km of the Operational Area, however, a number of sites (shipwrecks) exist within the EMBA (Table 4-20).

**Table 4-20 Shipwrecks located within the EMBA**

Vessel Name	Year Wrecked	Latitude	Longitude	Shortest Distance to the OA (km)
Haw Kiet	2003	-18.457167°	117.258333°	130.78
Vianen	1628	-20.000000°	115.166667°	156.5
Wild Wave (China)	1873	-20.000000°	115.166667°	156.5
Marietta	1905	-18.45816667°	117.2583333°	156.5
Curlew	1911	-20.000000°	115.166667°	156.5
Tanami	1935	-20.28333°	115.36666°	93.58
Trial	1622	-20.28598333°	115.3752333°	93.58
Lady Ann	1982	-21.400000°	114.200000°	322.93

#### 4.9.8 World, National and Commonwealth heritage listed places

No listed heritage places overlap the Operational Area or EMBA.

## **4.10 Socio-economic environment**

### **4.10.1 Commercial Fisheries**

A number of Commonwealth and State fishery management areas are located within the Operational Area and EMBA. FishCube data was 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 (2019 – 2024) to analyse the potential for interaction of fisheries with the Operational Area and EMBA. Data 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.

This information was used to determine relevant fisheries for consultation who may be impacted by the proposed petroleum activities. Table 4-21 provides an assessment of the potential interaction and Appendix C provides further detail on the fisheries that have been identified through desk-based assessment and consultation (Section 5). No Commonwealth managed fisheries were identified as having a potential interaction with the Petroleum Activity, within the Operational Area, however two Commonwealth fishery was identified as having a potential interaction with the Petroleum Activity within the EMBA. Three State managed fisheries were identified as having a potential interaction with the Petroleum Activity, within the Operational Area and eleven within the EMBA (Figure 4-13).

**Table 4-21: Commonwealth and State commercial fishery management areas overlapping the Operational Area and EMBA**

Fishery	Operational Area	EMBA	Description		
			X No spatial overlap	✓ Spatial overlap	Blue/ green shading Possibility for interaction with the Petroleum Activity
Commonwealth managed fisheries					
Western Tuna and Billfish Fishery	✓	✓	The Western Tuna and Billfish Fishery management area overlaps the EMBA and Operational Area, however the majority of Australian catch has concentrated in south-eastern Australia (ABARES., 2021). There has been no fishing effort reported within the Operational Area or EMBA in the last five years. Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activity given the current distribution of fishing effort.		
Western Skipjack Fishery	✓	✓	The Western Skipjack Tuna Fishery management area overlaps the Operational Area and the EMBA. 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 (Patterson <i>et al.</i> , 2022). Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activity given the current distribution of fishing effort.		
Southern Bluefin Tuna Fishery	✓	✓	The Southern Bluefin Tuna Fishery management area overlaps the EMBA and Operational Area. The Southern Bluefin Tuna Fishery spans the Australian Fishing Zone, however since 1992, the majority of Australian catch has concentrated in south-eastern Australia (Patterson <i>et al.</i> , 2022). There has been no fishing effort reported within the Operational Area or EMBA in the last five years. Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activity given the current distribution of fishing effort.		
North West Slope Trawl Fishery	X	✓	This fishery management area does not overlap with the Operational Area, however, overlaps with the EMBA. The North West Slope Trawl Fishery (NWSTF) operates off north-western Australia from 114°E to 125°E, roughly between the 200 m isobath and the outer boundary of the Australian Fishing Zone. A large area of the Australia–Indonesia memorandum of understanding box (an area off north-western Western Australia where Indonesian fishers may operate using only traditional methods) falls within the NWSTF). The NWSTF has predominantly been a scampi fishery using demersal trawl gear. Three vessels operated in the 2022-23 season. Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Western Deepwater Trawl Fishery	X	✓	The Western Deepwater Trawl management area does not overlap with the Operational Area, however, overlaps with the EMBA. The fishery operates off the Western Australian coast, in the Gascoyne Region ranging between the North West Cape and Shark Bay. The fishery uses demersal trawling methods, in waters seaward of a line approximating the 200 m isobath (Butler, et al. 2023). Fishing effort has been relatively low since 2005-2006, with 1 to 3 vessels active in the fishery since 2004-2005, and 2 active vessels recorded in 2021-2022 (Butler, et al. 2023).		

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Fishery	Operational Area	EMBA	Description		
			X No spatial overlap	✓ Spatial overlap	Blue/ green shading Possibility for interaction with the Petroleum Activity
			Woodside considers that interactions with the fishery may occur in the EMBA.		
State managed fisheries					
Mackerel Managed Fishery	✓	✓	The Mackerel Managed Fishery overlaps the Operational Area and EMBA. FishCube data reported no fishing effort in 10 NM CAES blocks overlapping the Operational Area over the last five years (DPIRD, 2024). FishCube data reported fishing effort by up to six vessels within seven 60 NM CAES block/s overlapping the EMBA in the last five years (DPIRD, 2024). Accordingly, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Pilbara Trap Managed Fishery	✓	✓	The Pilbara Trap Managed Fishery overlaps the Operational Area and EMBA. Fishing effort is typically focused in waters less than 50 m, however, through consultation fishers have reported setting traps in waters greater than 50 m deep. FishCube data for the Pilbara Trap Managed Fishery is not provided at the 10 NM scale, therefore it is uncertain if the effort reported in 60 NM CAES blocks overlap with the Operational Area (DPIRD, 2023). The fishery is active in the EMBA, with eight 60 NM CAES blocks reporting up to three vessels across the 2019 – 2024 seasons (DPIRD, 2024). Accordingly, Woodside considers it a possibility that interactions with this fishery may occur in the Operational Area and the EMBA.		
Pilbara Line Fishery (Condition)	✓	✓	The Pilbara Line Fishery licensees are permitted to operate anywhere within Pilbara waters (Newman <i>et al.</i> , 2021) and overlaps the Operational Area and EMBA. The fishery is active in the EMBA, with six 60 NM CAES blocks reporting up to five vessels across the 2019 – 2024 seasons (DPIRD, 2024). FishCube data for the Pilbara Line Fishery is not provided at the 10 NM scale, therefore it is uncertain if the effort reported in the 60 NM CAES block overlaps with the Operational Area (DPIRD, 2023). Accordingly, Woodside considers it a possibility that interactions with this fishery may occur in the Operational Area and the EMBA.		
Pilbara Fish Trawl (Interim) Managed Fishery	✓	✓	The Pilbara Fish Trawl Interim Managed Fishery overlaps the Operational Area and EMBA. The fishery is active in the EMBA, with three 60 NM CAES blocks reporting up to four vessels across the 2019 – 2024 seasons (DPIRD, 2024). FishCube data reported activity in two 10 NM CAES blocks overlapping the Operational Area, reporting up to four vessels in the last five years (DPIRD, 2024). Accordingly, Woodside considers it a possibility that interactions with this fishery may occur in the Operational Area and the EMBA.		
Marine Aquarium Managed Fishery	✓	✓	The Marine Aquarium Fish Managed Fishery management area overlaps the Operational Area and EMBA, however generally collects fish for display in water depths of less than 30 m. The fishery is active in the EMBA, with four 60 NM CAES block reporting up to seven licences across the 2019 – 2024 seasons (DPIRD, 2024). No fishing effort has been recorded within the CAES blocks overlapping		

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Fishery	Operational Area	EMBA	Description		
			X No spatial overlap	✓ Spatial overlap	Blue/ green shading Possibility for interaction with the Petroleum Activity
			the Operational Area in the last five years. Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Onslow Prawn Managed Fishery	✓	✓	The Onslow Prawn Managed Fishery overlaps the Operational Area and EMBA. However, no fishing effort has been recorded within the CAES blocks overlapping the Operational Area in the last five years and fishing primarily occurs in water depths of 15 m or less for this fishery. The fishery is active in the EMBA, with four 60 NM CAES blocks reporting less than three vessels across the 2019 – 2024 seasons (DPIRD, 2024). Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Nickol Bay Prawn Managed Fishery	X	✓	The Nickol Bay Prawn Managed Fishery management area does not overlap with the Operational Area, however overlaps the EMBA. FishCube data reported fishing effort in the EMBA, with three 60 NM blocks reporting up to eight vessels in the last five years (DPIRD, 2024). Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Pilbara Crab Managed Fishery	✓	✓	The Pilbara Crab Managed Fishery overlaps the Operational Area and EMBA. No fishing effort was reported in CAES blocks within the Operational Area for the last five years (DPIRD, 2023). Fishing effort also typically occurs in water depths less than 50 m, whereas the Operational Area is located in water depths of 75 m to 85 m. The fishery is active in the EMBA, with one 60 NM CAES blocks reporting less than three vessels in the last five years (DPIRD, 2024). Accordingly, Woodside considers it a possibility that interactions with this fishery may occur in the EMBA.		
Specimen Shell Managed Fishery	✓	✓	The Specimen Shell Managed Fishery management area overlaps the Operational Area and EMBA. However, shells are typically collected in waters less than 30 m deep, and no fishing effort was recorded in the CAES blocks overlapping the Operational Area in the last five years. The fishery is active in the EMBA, with three 60 NM blocks reporting up to three licences across the 2019 – 2024 seasons (DPIRD, 2024). Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	The West Coast Deep Sea Crustacean Managed Fishery management area overlaps the Operational Area and EMBA. FishCube data reported fishing effort within the EMBA, with three 60 NM blocks reporting less than three vessels in the last five years (2019 – 2024) (DPIRD, 2024). FishCube data reported no fishing effort within the Operational Area in the last five years (DPIRD, 2024). Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Western Australian Sea Cucumber Fishery	✓	✓	The Western Australian Sea Cucumber Fishery licensees are permitted to operate anywhere within Western Australian Waters, therefore overlapping the Operational Area and EMBA. The fishery is active in the EMBA, with two 60 NM CAES blocks reporting less than three vessels across the 2019 –		

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Fishery	Operational Area	EMBA	Description		
			X No spatial overlap	✓ Spatial overlap	Blue/ green shading Possibility for interaction with the Petroleum Activity
			2024 seasons (DPIRD, 2024). No fishing effort was reported in CAES blocks overlapping the Operational Area. Therefore, Woodside considers it a possibility that interactions with this fishery may occur within the EMBA.		
Abalone Managed Fishery	✓	✓	Whilst this fishery management area overlaps the Operational Area and EMBA, fishing effort in the last five years has been concentrated in south-west WA (typically as far north as Carnarvon) and occasionally off South Australia. FishCube data reported no fishing effort within the Operational Area or EMBA in the last five years (2019 – 2024) (DPIRD, 2024). Accordingly, Woodside considers there to be no potential for interaction with this fishery and the activity.		
Pearl Oyster Managed Fishery	✓	✓	The Pearl Oyster Managed Fishery overlaps the Operational Area, and EMBA, however fishing effort is limited to 35 m depth. FishCube data reported no fishing effort within the Operational Area or EMBA in the last five years (2019 – 2024) (DPIRD, 2024). Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activity given the current distribution of fishing effort.		
South West Coast Salmon Managed Fishery	✓	✓	The South West Coast Salmon Fishery management area overlaps the Operational Area and EMBA. However, FishCube data reported no fishing effort within the Operational Area or EMBA in the last five years (2019 – 2024) (DPIRD, 2024). Accordingly, Woodside considers there to be no potential for interaction with this fishery and the Petroleum Activity given the current distribution of fishing effort.		
Charter Based Commercial Operators					
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 indicate tour operator fishing effort highest around Ningaloo and Muiron Islands and at Barrow Island and the Montebello Islands. FishCube data reports consistent fishing effort across eight 60 NM CAES block that overlap the EMBA (DPIRD, 2024). Fishing effort was reported by up to twenty licences across the 2019 – 2024 seasons (DPIRD, 2024). FishCube data reported no active tour operators in CAES blocks overlapping the Operational Area in the last 5 years (DPIRD, 2024). Therefore, Woodside considers it a possibility that interactions with Fishing Tour Operators may occur within the EMBA.		

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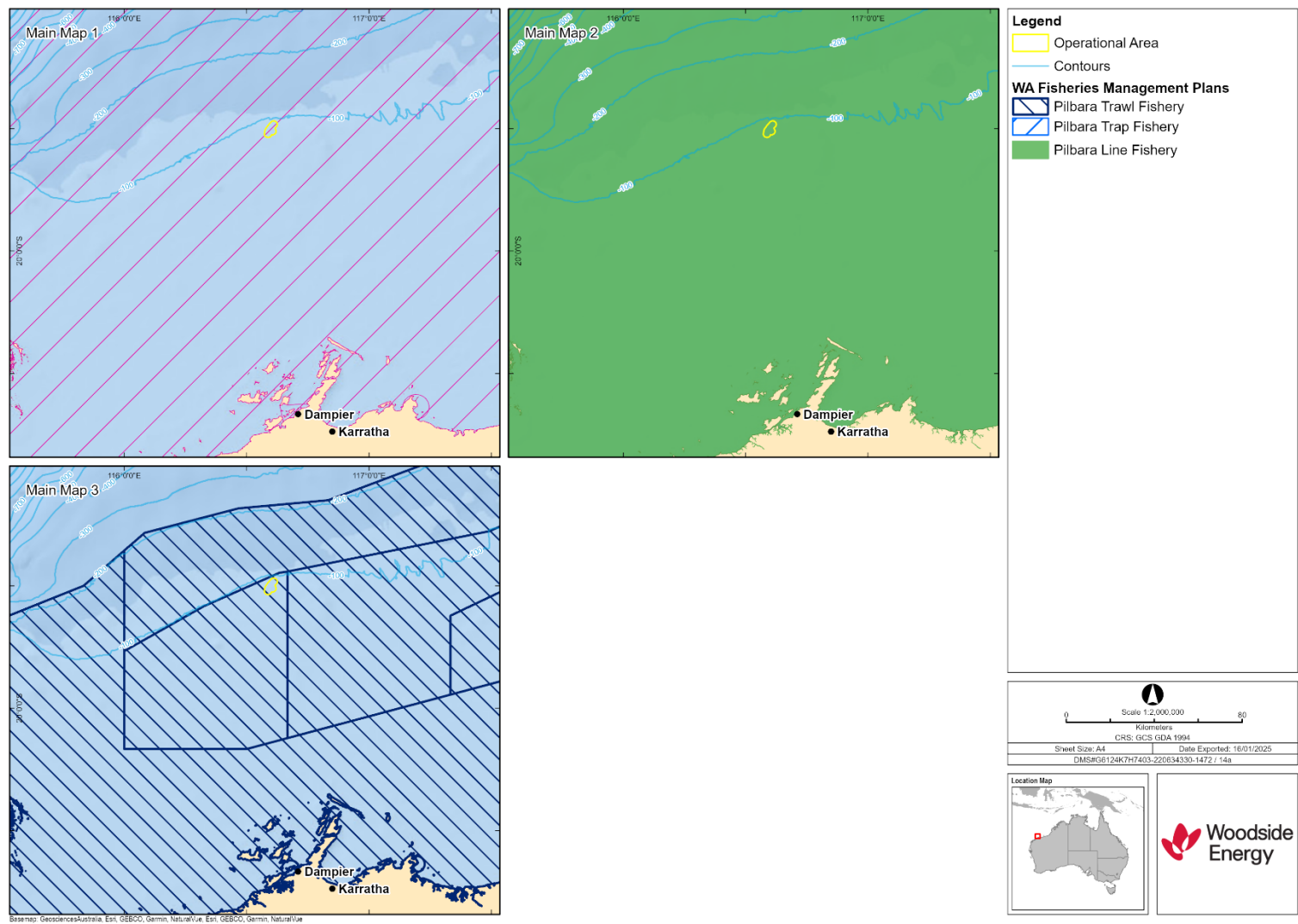


Figure 4-13: State managed commercial fisheries overlapping the Operational Area with a potential for interaction with the Petroleum Activities Program

#### 4.10.2 Traditional and customary fishing

There are no traditional or customary fisheries within the Operational Area, as these are typically carried out in shallow coastal waters and/or areas with structures such as reef. However, it is recognised that Barrow Island, Montebello Islands and Ningaloo Reef, all overlapping or in close proximity to the EMBA, have a known history of fishing when areas were occupied (as from historical records) (Department of Conservation and Land Management 2005, Department of Environment and Conservation 2007). The Western Australia Recreational Fishing Guide (2024) states that First Nations people do not need a recreational fishing licence, in any waters, if it is in accordance with continuing tradition, for individual or familial consumption, and not for a commercial purpose. Areas that are covered by registered native title claims are likely to practice Aboriginal fishing techniques at various sections of the Western Australia coastline.

Traditional fishing methods in the NWMR are further described in Appendix C.

#### 4.10.3 Tourism and recreation

No tourism activities take place specifically within the Operational Area; but it is acknowledged that there are growing tourism and recreational sectors in WA. These sectors have expanded spatially over the last two decades. Potential for growth and further expansion in tourism and recreational activities in the Pilbara and Gascoyne regions is recognised, particularly with the development of regional centres and a workforce associated with the resources sector (Gascoyne Development Commission, 2012).

Charter fishing, cruising, diving, snorkelling, whale watching, and marine turtle and dolphin watching are the main commercial tourism activities in and adjacent to the NWMR. Except for offshore charter fishing, most marine tourism activities occur in nearshore waters, including in the Dampier Archipelago (DEWHA, 2008a). FishCube data containing tour operator activity was acquired from DPIRD for the period 2018 - 2023 (inclusive), which shows no tourist activities take place specifically within the Operational Area, however it is to be acknowledged that there are growing tourism and recreational sectors in WA and these sectors have expanded over the last couple of decades. Growth and the potential for further expansion in tourism and recreational activities is recognised for the Pilbara and Gascoyne regions, with the development of regional centres and a workforce associated with the resources sector (SGS Economics and Planning 2012).

Tourism is one of the major industries of the region and contributes significantly to the local economy in terms of both income and employment. The main marine nature-based tourist activities are concentrated around and within the Ningaloo World Heritage Area (located 321 km south-west of the Operational Area). Activities undertaken include recreational fishing, snorkelling and scuba diving and wildlife watching and encounters (including whale sharks, manta rays, humpback whales and turtles) (Schianetz *et al.* 2009).

The popularity of recreational fishing has grown substantially in the Pilbara region over recent years, with a distinct seasonal peak in winter when significant numbers of metropolitan and interstate tourists travel through the area and visit the Dampier Archipelago. The high tidal range in the area means beach fishing is limited to periods of flood tides and high water (Penn *et al.*, 2005). Consequently, much of the angling activity is boat-based. The Pilbara region has the highest boat ownership per capita in Australia (CALM, 2005). The Montebello Islands (located approximately 142 km south-west from the Operational Area) are the closest location for tourism with some charter boat operators taking visitors to these islands (DEC, 2007).

Recreational fishing in the Pilbara region is mainly concentrated around the coastal waters and islands and has grown considerably with the expanding regional centres, seasonal tourism and increasing residential and fly in/fly out work force, particularly in the Pilbara region (Fletcher *et al.* 2017). Some recreational fishing has historically taken place at Rankin Bank (located approximately 107 km south-west from the Operational Area) and the Glomar Shoals KEF (overlaps Operational Area). However, due to the distance from access nodes, such as Dampier (located approximately 123 km south from the Operational Area) and Onslow (approximately 279 km south-west from the Operational Area) recreational fishing effort is expected to be restricted to relatively large vessels and hence is considered to be low.

As most marine nature-based activities take place generally in nearshore waters and away from the Operational Area, it is expected that there is little potential for interacting with tourism and recreational fishing. Tourism and recreation in the context of the wider North-west Marine Region is described in Appendix C.

#### 4.10.4 Commercial shipping

The region supports significant commercial shipping activity, mostly associated with the mining and oil and gas industries. Major shipping routes in the area are associated with entering the ports of Dampier, Mardie and Barrow Island. Shipping activities in the region include:

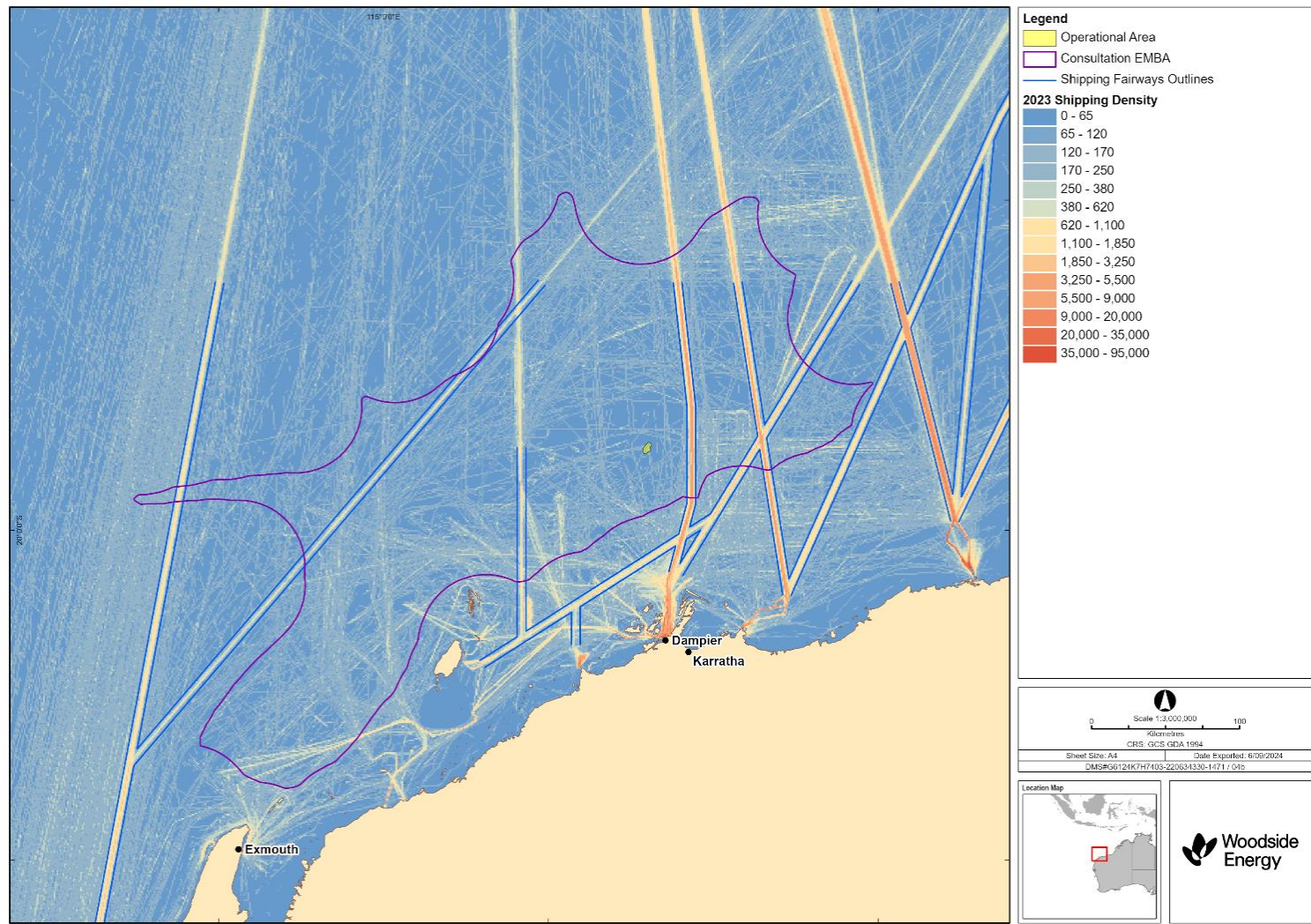
- International bulk freighters/tankers arriving and departing from Dampier including mineral ore, hydrocarbons (LNG, liquefied petroleum gas, condensate) and salt carriers.
- Domestic support vessels servicing offshore facilities and Barrow Island development.
- Offshore support vessels.

Analysis of vessel traffic data acquired through AMSA's Craft Tracking System determined that in 2022, most of the Operational Area had densities between 0-250 vessels per year.

The Australian Maritime Safety Authority (AMSA) has introduced a network of commercial shipping fairways on the NWS to reduce the risk of vessels colliding with offshore infrastructure. The fairways are not mandatory, but AMSA strongly recommends commercial vessels remain within the fairway when transiting the region.

The Australian Maritime Safety Authority (AMSA) has introduced a network of marine fairways across the NWMR to reduce the risk of vessel collisions with offshore infrastructure. It is noted that none of these fairways intersect with the Operational Area; the nearest fairway is ~24 km east of Operational Area (Figure 4-14). Vessel tracking data suggest shipping is concentrated to the east of the Operational Area, which is likely associated with ports.





**Figure 4-14: Vessel density map for the Operational Area and EMBA**

Data derived from AMSA satellite tracking system data (vessels include cargo, LNG tanker, passenger vessels, support vessels, and others/unnamed vessels)

#### 4.10.5 Oil and gas facilities, infrastructure and other industries

Table 4-22 details other facilities, assets and infrastructure located within 50 km of the Operational Area. Appendix C describes current oil and gas development within the EMBA, also shown in Figure 4-15.

**Table 4-22: Other oil and gas facilities within 50 km of the Operational Area**

Facility or asset	Operator	Distance and direction from Operational Area (km)
Angel (Offshore Platform)	Woodside Energy Limited (WEL)	Overlaps
Okha (FPSO)	Woodside Energy limited (WEL)	6 km west
Modec Venture 11 (Offshore Platform)	MODEC Management Services Pty Ltd	21 km north
North Rankin Complex (Offshore Platform)	Woodside Energy Limited (WEL)	46 km south-west

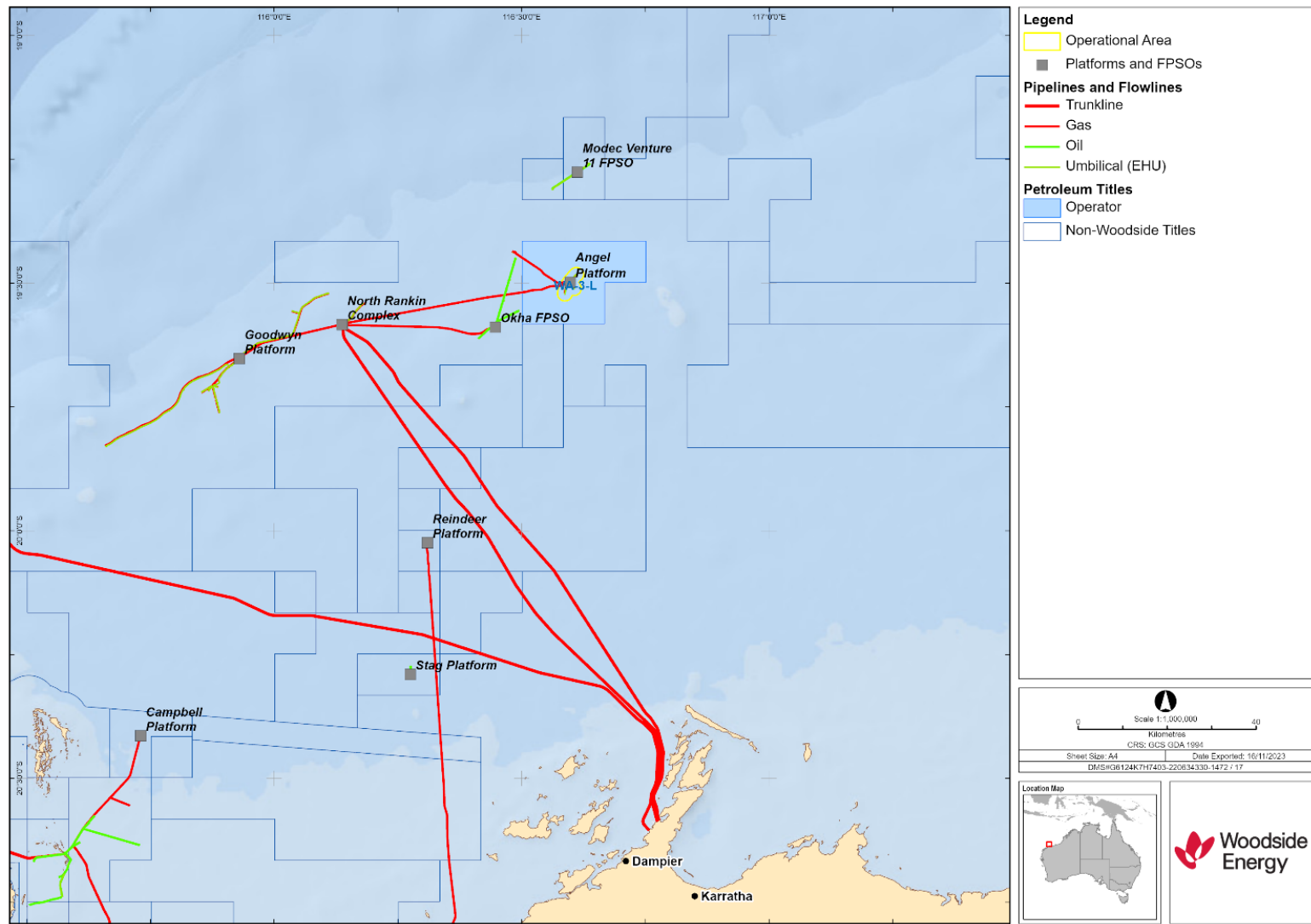
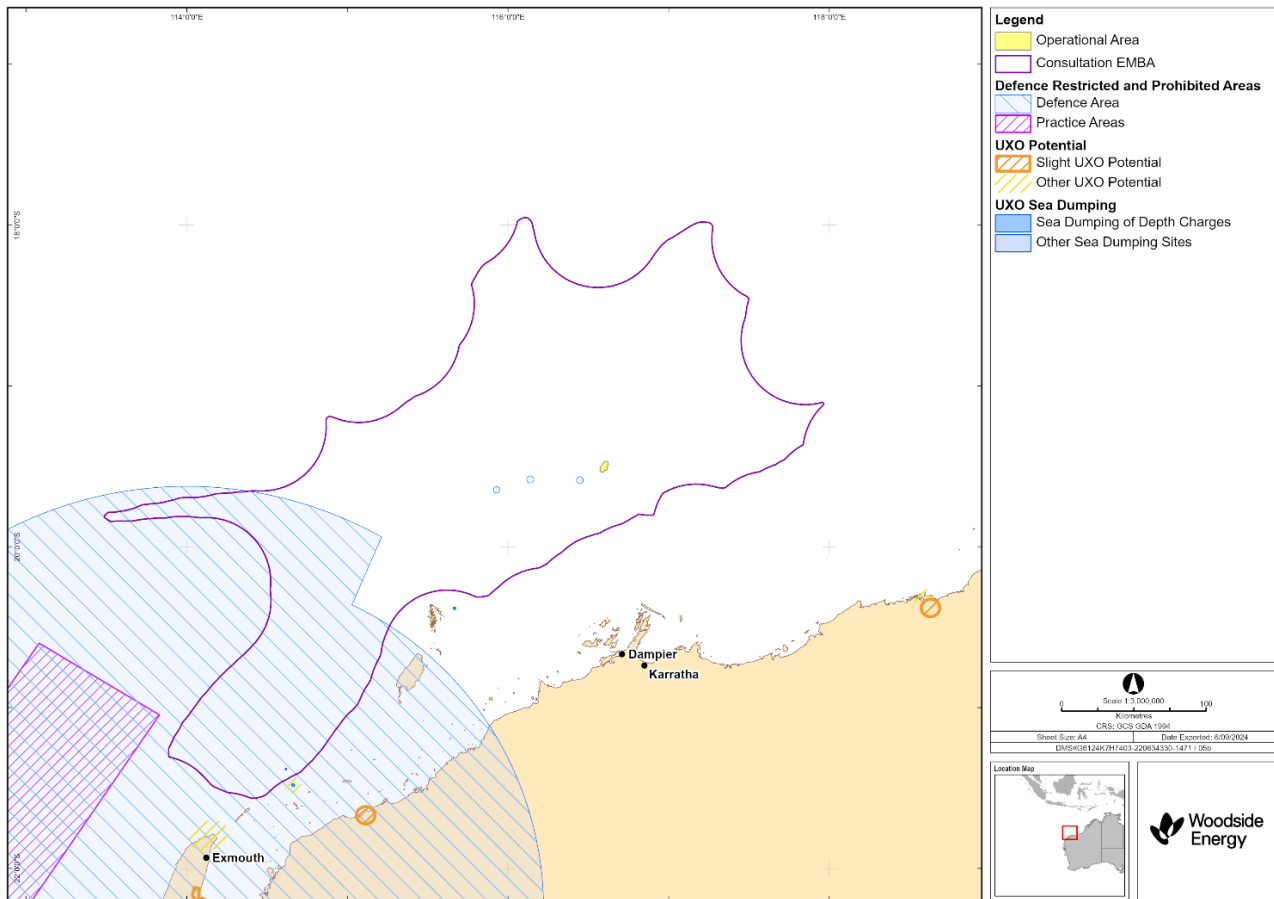


Figure 4-15: Oil and gas Infrastructure within the Operational Area and EMBA



#### 4.10.6 Defence

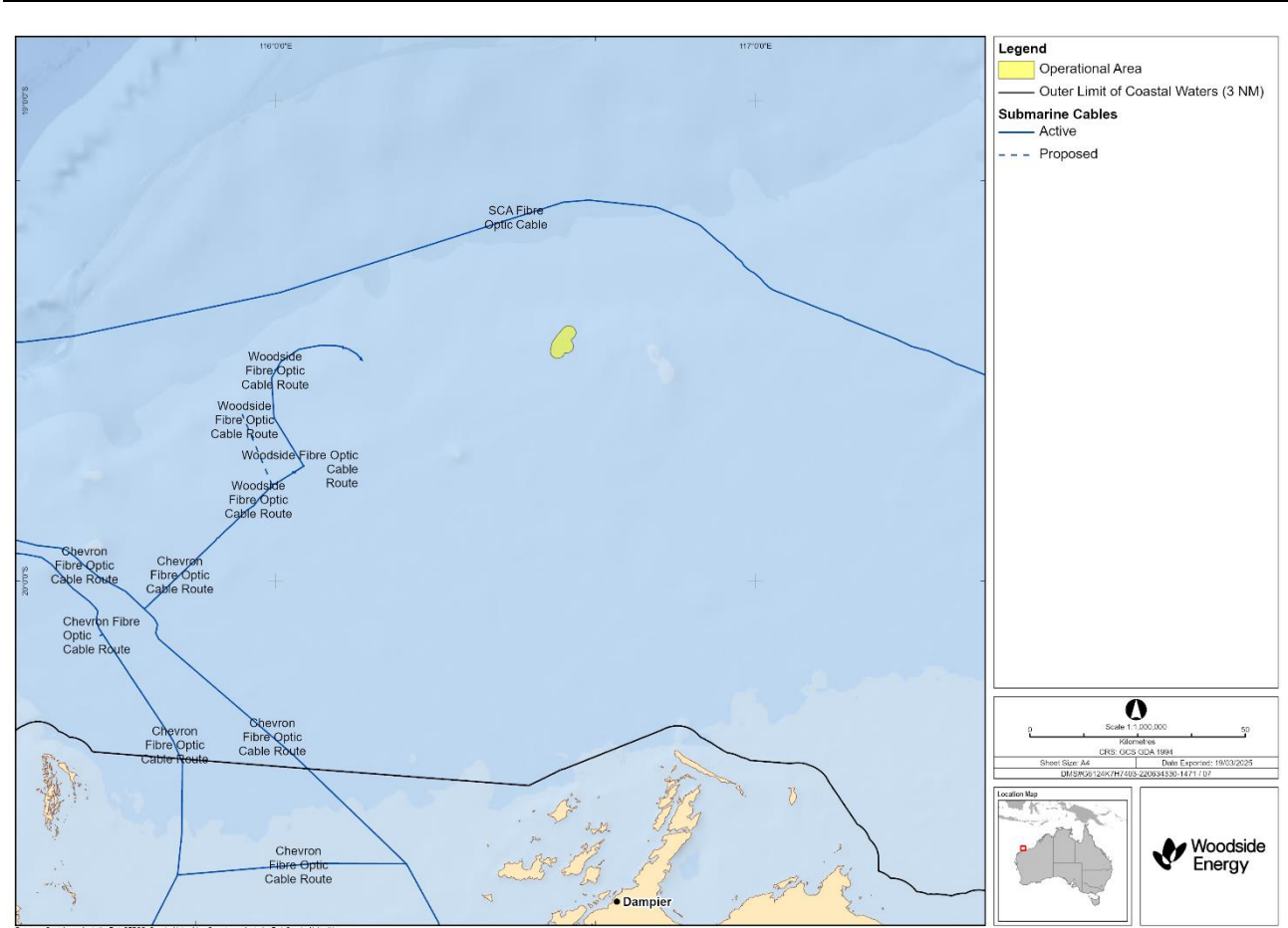
No Defence areas overlap the Operational Area. There are designated defence practice areas in the offshore marine waters off Ningaloo and the North West Cape, within the EMBA. The closest defence practice area is 152 km south-west of the Operational Area. Defence areas overlapping the EMBA are presented in Figure 4-16.



**Figure 4-16: Defence areas within the EMBA**

#### 4.10.7 Other Industries

There were no submarine cables (**Figure 4-17**), offshore renewable energy facilities, ports, salt mines, or onshore processing facilities identified within the Operational Area.



**Figure 4-17: Submarine communication cables adjacent to the operational area**

## 5. STAKEHOLDER CONSULTATION

### 5.1 Summary

Woodside consults relevant persons in the course of preparing an Environment Plan (EP) in accordance with Regulation 25 of the Environment Regulations. Note: (In this section, references to 'Regulations' are to the Environment Regulations, unless otherwise stated).

The consultation process 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 or activities. This enables Woodside to assess the merits of objections or claims about the adverse impact of each activity to which the EP relates that are received from relevant persons and for Woodside to adopt appropriate measures (if any) in response to those objections or claims so that the activity is carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP) and will be of an acceptable level.

Consultation is 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 Section 5.2 and 5.5.1) and *Munkara v Santos NA Barossa Pty Ltd (No 3)* [2024] FCA 9 (*Munkara Case*).

For this EP, Woodside has considered 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 activities in the Operational Area (see Section 4). Consultation beyond the defined EMBA is too remote, would mean persons with interests are not reasonably capable of ascertainment and would mean consultation is not workable (*Tipakalippa* para [88]).

Woodside's consultation methodology is divided into two parts:

- 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) to identify relevant persons
- the second section (Section 5.6 to 5.7) details Woodside's approach to accepting feedback and assessment of the merits of each objection or claim about the adverse impact of each activity to which the EP relates, and engaging in ongoing consultation for this EP.

Woodside's consultation record is in Appendix F and includes a summary of the following:

- assessment and identification of relevant persons (see Figure 5-1)
- consultation information provided to relevant persons, feedback received, Woodside's assessment of the merits of objections or claims and Woodside's response to relevant persons and other stakeholders Woodside chose to consult
- engagement with persons or organisations that Woodside chose to contact who are 'not relevant' persons for the purposes of Regulation 25(1) (see Section 5.3.4)
- opportunities provided to persons or organisations to participate in consultation.

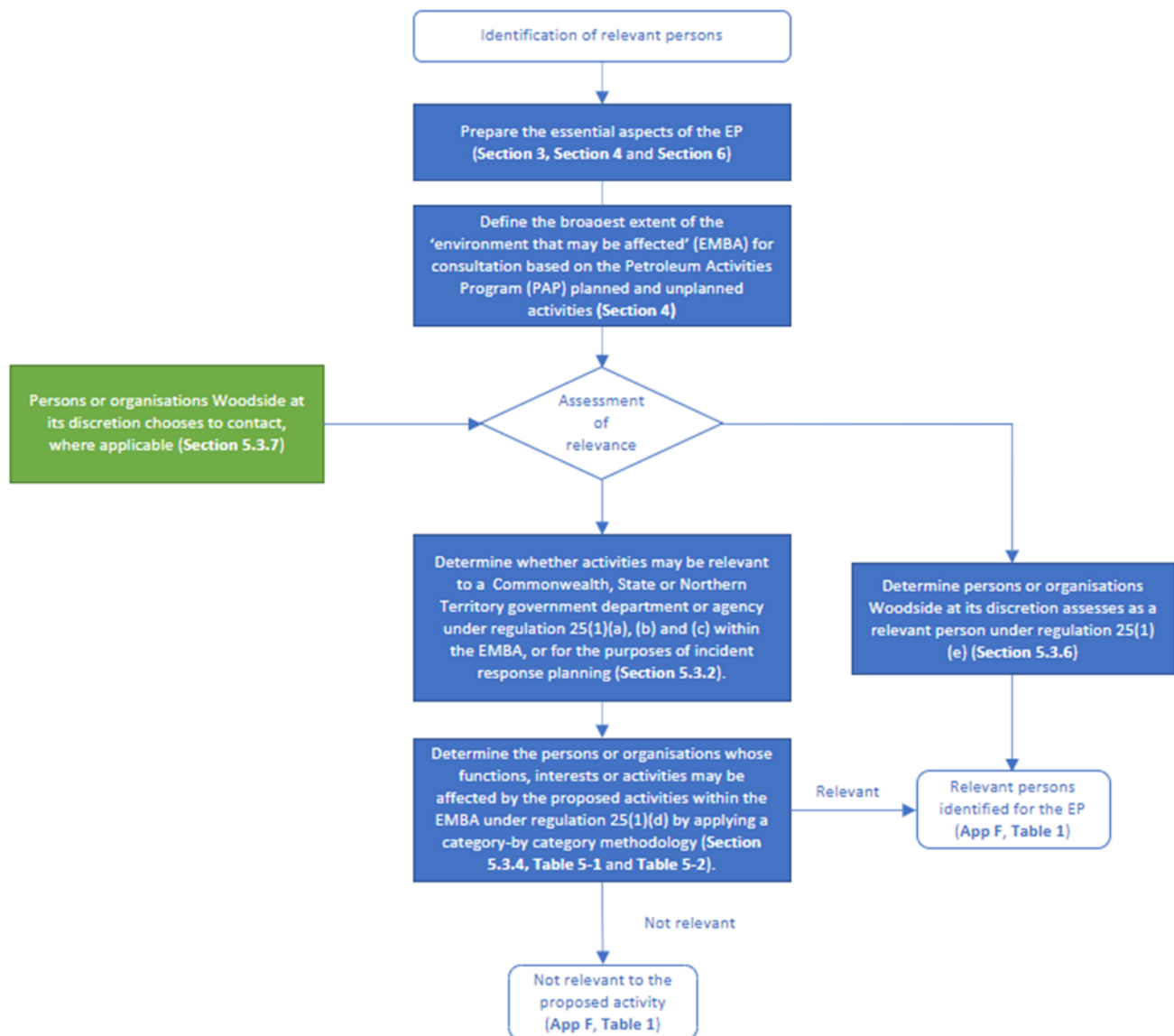


Figure 5-1: Overview of Woodside's methodology to identify relevant persons

## 5.2 Consultation – general context

Woodside has a portfolio of quality oil and gas assets and more than 40 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 better understand the potential risks and impacts associated with 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 Petroleum Activities Program (PAP). 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 GL2086 – *Consultation in the course of preparing an environment plan guideline* (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* and *Munkara Case* have also been further considered in the context of specific methods for consultation with Traditional Custodians' relevant persons (Section 5.5.1).

To undertake consultation, Woodside has developed a methodology for identifying relevant persons in accordance with Regulation 25(1) (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 3.4)
- the geographical extent to which the 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, which requires a Titleholder to:

- consult with each of the following (a relevant person) in the course of preparing an EP:
  - each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the EP may be relevant
  - if the plan relates to activities in the offshore area of a State – the department of the responsible State minister
  - 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
  - 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 (ESD) set out in Section 3A of the EPBC Act – see Section 1.7.2

- is intended to reduce the environmental impacts and risks from the activity to ALARP and an acceptable level (Regulation 4)
- 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 engages 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 7.9).

An overview of Woodside's consultation approach is outlined at Figure 5-2.

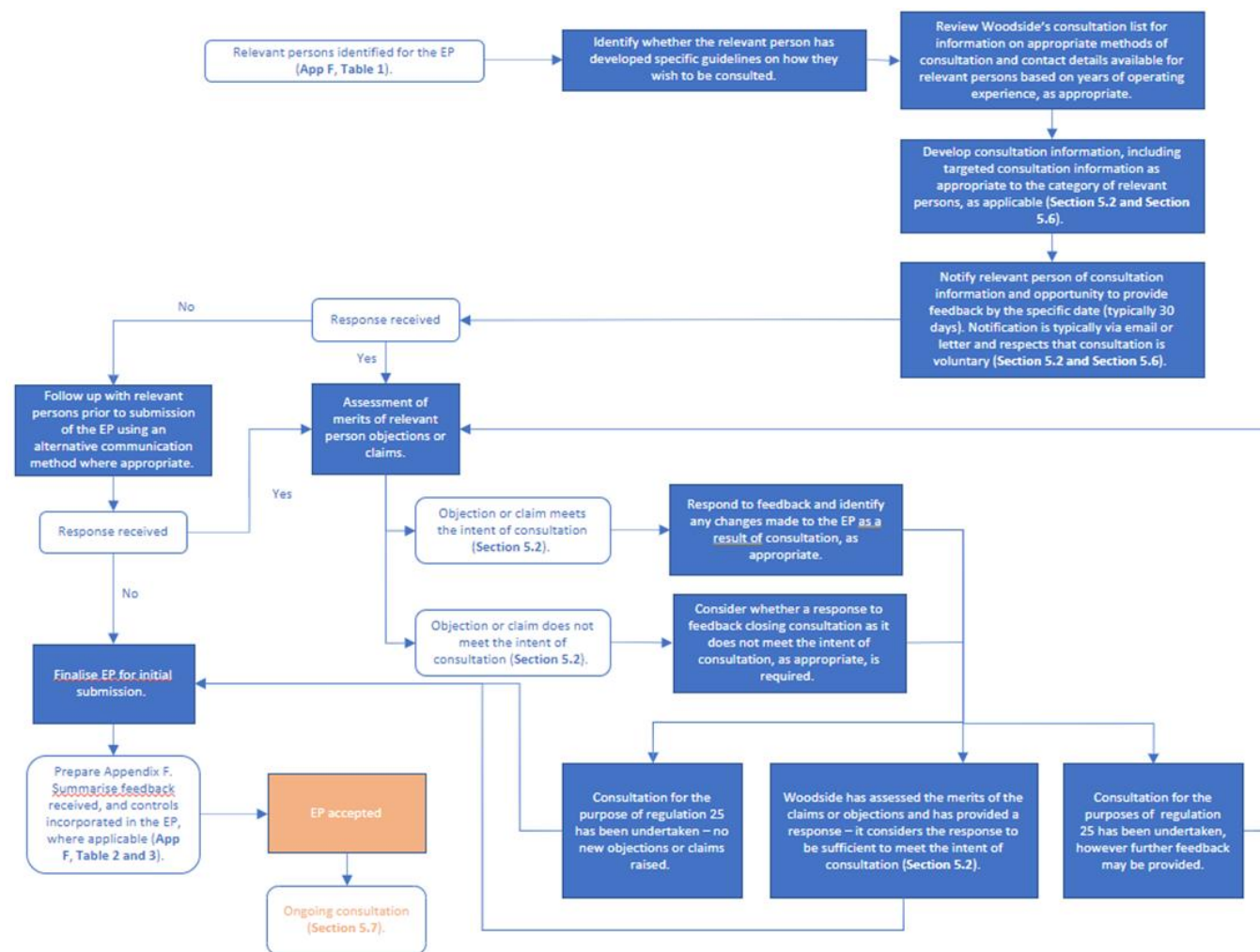


Figure 5-2: Overview of Woodside's consultation approach

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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 \(No 3\) \[2024\] FCA 9](#)

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 – August 2024](#)

[PL9028 Managing gender-restricted information – December 2023](#)

[Consultation on offshore petroleum environment plans – Information for the community](#)

Department of Energy, Mines, Industry Regulation and Safety (DEMIRS):

[Draft Policy and Guideline — Decommissioning of petroleum and geothermal energy property, equipment and infrastructure in Western Australian onshore areas and State coastal waters \(March 2024\)](#)

Department of Climate Change, Energy, the Environment and Water (DCCEEW):

[Sea Countries of the North-West; Literature review on Indigenous connection to and uses of the North West Marine Region](#)

Australian Fisheries Management Authority (AFMA):

[Petroleum industry consultation with the commercial fishing industry](#)

Commonwealth Department of Agriculture, Fisheries and Forestry (DAFF):

[Fisheries and the Environment – Offshore Petroleum and Greenhouse Gas Act 2006](#)

[Offshore Installations Biosecurity Guide](#)

WA DPIRD:

[Guidance statement for oil and gas industry consultation with the Department of Fisheries](#)

WA Department of Transport (DoT):

[Offshore Petroleum Industry Guidance Note](#)

WA Australian Fishing Industry Council (WAFIC):

[Oil and Gas Consultation Framework](#)

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 under Regulations 25(1)(a) and (b) 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 listed in Appendix F, Table 1. In accordance with Regulation 25(1)(b), Woodside consults with the department of the relevant State minister.

### 5.3.2 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 to be carried out in the EMBA under the EP may be relevant. This list of relevant departments 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 2024), 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. 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:

<b>Government departments / agencies – marine</b>	Agencies with legislated responsibilities for use of the marine environment.
<b>Government departments / agencies – environment</b>	Agencies with legislated responsibilities for the protection of the environment.
<b>Government departments / agencies – industry</b>	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, determining whether those responsibilities overlap with potential risks and impacts specific to the PAP 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 proposed activities 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 Operational Area. Feedback received, if any, is assessed in accordance with the intended outcome of consultation.
- The list of government departments and agencies assessed as relevant is set out in Appendix F, Table 1.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation and summarised at Appendix F, 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 PAP in the EMBA or would not be involved in incident response planning.

### 5.3.3 Regulation 25(1)(d)

To identify a relevant person for the purposes of Regulation 25(1)(d), the meaning of ‘functions, interests or activities’ needs to be understood. In Regulation 25(1)(d), 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 the guidance below from NOPSEMA’s GL2086 – *Consultation in the course of preparing an environment plan guideline* (May 2023):

<b>Functions</b>	Refers to a power or duty to do something.
<b>Interests</b>	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.
<b>Activities</b>	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) 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.

### 5.3.4 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 the 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 considering available, relevant literature.

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 to be carried out under the EP. The broad categories are identified in Table 5-1 below and identification methodology applied as set out in Table 5-2.

The list of those persons or organisations assessed as relevant persons or organisations Woodside separately chose to contact is set out in Appendix F, 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 Appendix F, 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 Appendix F, 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 <i>Commonwealth Fisheries Management Act 1991 (Cth)</i> and the <i>Western Australian Fish Resources Management Act 1994 (WA)</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 Western Australian 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 Greenhouse Gas (GHG) title under the OPGGS Act 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 with cultural rights and interests or cultural functions or who perform cultural activities over particular lands and waters.  Where a First Nations person, group or entity self-identifies and asserts cultural rights, functions, interests or activities they will be considered under the definition of Traditional Custodian for the purpose of this EP (as appropriate).
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 (Cth)</i> by Native Title holders 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 Body (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993 (Cth)</i> with prescribed functions, set out in Part 11 of the <i>Native Title Act 1993 (Cth)</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 elected Parliamentary representatives and recognised local community reference/liason groups or organisations	Local government body formed under the <i>Local Government Act 1995 (WA)</i> and elected Parliamentary representatives which are responsible for representing the local community. Recognised local community reference or liaison group or organisation in relation to oil and gas matters.
Other non-government groups, organisations or individuals	Non-government organisation with public website material targeting the proposed activity.  Individual who demonstrates the proposed activity could potentially impact their interests, functions or activities.

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Category	Explanation
Research institutes and local conservation groups or organisations	<p>Research institutes are government or private institutions that conduct marine or terrestrial research.</p> <p>Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.</p>

**Table 5-2: Methodology for identifying relevant persons within the EMBA undertaken under Regulation 25(1)(d) – by category**

Category	Relevant person identification methodology
Commercial fisheries (Commonwealth and State) and peak representative bodies	<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"> <li>Defining the parameters having regard to timing, location and duration of the proposed petroleum activity.</li> <li>Confirming whether the EMBA overlaps with the fisheries management area (i.e., the spatial area the fishery is legally permitted to fish in) (see Section 4.10.1).</li> <li>Woodside acknowledges WAFIC's consultation guidance<sup>12</sup>, that Titleholders develop separate consultation strategies for significant unplanned events (for example an 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 (see Appendix G).</li> <li>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 4.10.1).</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>State commercial fisheries that have been assessed as having a potential for interaction within the Operational Area or EMBA (see Section 4.10.1) are assessed as relevant to the proposed activity. However, to avoid over consulting and as requested in WAFIC's guidance, Woodside only consults individual licence holders based on WAFIC's advice. Woodside also utilises WAFIC's consultation service whereby WAFIC: <ul style="list-style-type: none"> <li>directly consults fishery licence holders that are assessed as having a potential for interaction in the Operational Area</li> <li>consults fisheries that are assessed as having a potential for interaction in the EMBA only in the event of an unplanned emergency scenario.</li> </ul> </li> <li>Commonwealth commercial fisheries that have been assessed as having a potential for interaction within the Operational Area or EMBA (see Section 4.10.1) are assessed as relevant to the proposed activity.</li> <li>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.</li> </ul>

<sup>12</sup> [Consultation Approach for Unplanned Events - WAFIC](#)

Category	Relevant person identification methodology
Recreational marine users and peak representative bodies	<p>Woodside assesses relevance for recreational marine users and peak representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> <li>Using Woodside knowledge and operating experience, applying knowledge of recreational marine users in the area. This assessment is both activity and location based.</li> <li>Defining the parameters having regard to timing, location and duration of the proposed petroleum activity.</li> <li>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.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>
Titleholders and Operators	<p>Woodside assesses relevance for other Titleholders and operators using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Using GPInfo to determine overlap with other Titleholders or Operators permit areas within the EMBA.</li> <li>Using Woodside knowledge and operating experience, applying knowledge of other operators in the area.</li> <li>Woodside produces a map showing the outcome of this assessment.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>Titleholders and Operators whose permit areas are identified as having an overlap within the EMBA are assessed as relevant.</li> </ul>
Peak industry representative bodies	<p>Woodside assesses relevance for peak industry representative bodies using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Review of 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.</li> <li>Review of Woodside's existing consultation list.</li> <li>Website search to identify whether any additional peak industry representative bodies have been created whose responsibilities may overlap with Woodside's proposed activities within the EMBA.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>Peak industry representative bodies whose responsibilities are identified as having an overlap with Woodside's proposed activities within the EMBA are assessed as relevant.</li> </ul>
Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations	<p>Consistent with its understanding of the matters discussed in Section 4.10, to identify Traditional Custodian groups or individuals, Woodside:</p> <ul style="list-style-type: none"> <li>Uses existing systems of recognition to identify Traditional Custodian 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 Traditional Custodian groups or entities).</li> </ul>

Category	Relevant person identification methodology
	<ul style="list-style-type: none"> <li>• Notifies and invites consultation with Traditional Custodians through their nominated representative corporation (for example Prescribed Bodies Corporate (PBCs)); or, in the case of Native Title and where appropriate, the Native Title Representative Body.</li> <li>• Requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders).</li> <li>• Requests advice as to other Traditional Custodian groups or individuals that should be consulted.</li> <li>• Advertises widely so as to invite self-identification and consultation by Traditional Custodian groups and individuals.</li> </ul> <p>Further detail to Woodside's methodology is as follows.</p> <p>Woodside uses the databases of the National Native Title Tribunal:</p> <ul style="list-style-type: none"> <li>• To understand whether there are any Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA</li> <li>• To understand whether there are any relevant Indigenous Land Use Agreements (ILUAs), 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.</li> </ul> <p>Where there is a positive determination of Native Title, contacting the PBC or, where their representative is a Native Title Representative Body, contacting the Native Title Representative Body.</p> <p>Where appropriate, contacting the relevant Native Title Representative Body to request a list of any First Nations peoples asserting Traditional Custodianship over an area of coastline adjacent to the EMBA.</p> <p>Review of 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>In Victoria, using the Victorian Aboriginal Heritage Council data to determine whether there are any Registered Aboriginal Parties (RAP) appointed under the <i>Aboriginal Heritage Act 2006 (Vic)</i>, that overlap or are adjacent to the EMBA.</p> <p>Traditional Custodian groups or individuals identified by a Traditional Custodian, nominated representative corporation or Native Title Representative Body.</p> <p>Request to the PBC to distribute Woodside 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 that an individual/s functions, interests 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 risks and impacts to their values, and enable individuals to self-identify.</p> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>• Traditional Custodian groups, entities or individuals and Nominated Representative Corporations who are identified through the above</li> </ul>

Category	Relevant person identification methodology
	methodology and overlap or are coastally adjacent to the EMBA are assessed as relevant.
Native Title Representative Bodies	<p>Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>A Representative Aboriginal/Torres Strait Islander Body (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993 (Cth)</i> with prescribed functions set out in Part 11 of the <i>Native Title Act 1993 (Cth)</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.</li> <li>Review of National Native Title Tribunal RATSIB areas that overlap or are coastally adjacent to the EMBA.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>Where the area for which a Native Title Representative Body is recognised under the <i>Native Title Act 1993 (Cth)</i>, overlaps with the EMBA or is coastally adjacent to the EMBA, Woodside will assess the Native Title Representative Body as relevant.</li> </ul>
Historical heritage groups or organisations	<p>Woodside assesses relevance for groups or organisations whose responsibilities are focused on historical heritage using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Using the Australasian Underwater Cultural Heritage Database to assess known records Maritime Cultural Heritage sites (shipwrecks, aircraft and relics) within the EMBA (see Section 4.9.7).</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>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.</li> </ul>
Local government and recognised local community reference/liaison groups or organisations	<p>Woodside assesses relevance for local government and recognised local community reference/liaison groups or organisations using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Review of 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 overlap between the local government's defined area of responsibility and the EMBA.</li> <li>Woodside 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.</li> <li>Woodside reviews the community reference/liaison group's terms of reference to determine its area of responsibility and 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).</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>The local government whose defined area of responsibility overlaps the EMBA is assessed as relevant.</li> </ul>



Category	Relevant person identification methodology
	<ul style="list-style-type: none"> <li>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.</li> </ul>
Other non-government groups, organisations or individuals	<p>Woodside assesses relevance for other non-government groups, organisations or individuals using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Review of Woodside's existing consultation list.</li> <li>Website search 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 and/or social media material specific to the proposed activity at the time of development of the EP.</li> <li>Organisation has a publicly available statement (or purpose) that clearly describes their collective functions, interests or activities.</li> <li>Review of current website and/or social media material to identify targeted information which demonstrates functions, interests or activities relevant to the potential risks and impacts associated with planned activities associated with the EMBA.</li> <li>Review of an organisation's/individual's feedback to consider whether their functions, interests or activities within the EMBA may be affected by the activities to be carried out under the EP. Considering interests outside the EMBA would be considered too remote and contrary to the purpose of EP consultation.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>Registered non-government groups or organisations with current targeted public 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.</li> <li>Individual demonstrates their functions, interests or activities may be impacted will be assessed as relevant.</li> </ul>
Research institutes and local conservation groups or organisations	<p>Woodside assesses relevance for research institutes and local conservation groups or organisations using the following steps in its methodology:</p> <ul style="list-style-type: none"> <li>Review of Woodside's existing consultation list.</li> <li>Website search for research institutes that may operate within the EMBA. This assessment is both activity and location based.</li> <li>Website search for local conservation groups or organisations that regularly conduct conservation activities within the EMBA.</li> </ul> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>

### 5.3.5 Regulation 25(1)(e)

In addition to assessing relevance under Regulation 25(1)(d), Woodside has discretion to categorise any other person or organisation as a relevant person under Regulation 25(1)(e).

### 5.3.6 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).

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### 5.3.7 Persons or organisations Woodside chooses to contact

In addition to undertaking consultation with relevant persons under Regulation 25(1), from time to time there are persons or organisations that Woodside chooses to contact 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 used to inform relevance under Woodside's methodology. Woodside follows the same methodology for assessing a person or organisation's relevance as it does during its initial assessment (as described in Figure 5-2 and Section 5.3). The result of Woodside's assessment of relevance during the development of the EP is outlined at Appendix F, Table 1.

### 5.3.8 Assessment of relevant persons for the proposed activity

The result of Woodside's assessment of relevant persons in accordance with Regulation 25(1) is outlined at Appendix F, 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 5.3.4, or self-identified and Woodside assessed as 'not relevant', are summarised at Appendix F, 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, and collaborates on a consultation approach where further engagement is sought by the relevant person. The consultation process aims to be appropriate for the category of relevant persons and 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 Operational Area. Woodside acknowledges 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, dependant on the EP
- 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

- a summary of relevant risks and mitigation and management control measures relevant to the proposed petroleum activity.

It also sets out contact details to provide feedback to Woodside.

The level of information necessary for a person or organisation to understand the impacts of the proposed activity on their functions, interests or activities may vary and 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. Sufficient information may have been provided to a relevant person even where all documents requested by a relevant person have not been provided. Woodside acknowledges NOPSEMA's brochure entitled '*Consultation on offshore petroleum environment plans information for the community*', which advises persons being consulted 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
- 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 1993 (Cth)* for Native Title applications. Woodside typically aligns advertisement feedback timeframes with the timing described below. Feedback received is assessed in accordance with Section 5.3 to determine relevance and evidenced in Appendix F, Table 1 as appropriate.

Woodside utilises a range of tools to provide sufficient information to relevant persons, which may include one or more of the following:

- Consultation Information Sheet available on Woodside's website and shared directly with relevant persons
- 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
- Let's Talk newsletter – digital and hard copy
- maps outlining a person or organisation's defined area of responsibility in relation to the proposed activity, for example a fisheries management area or defence training area
- community meetings, as appropriate
- attendance at on-the-ground community events or planned regional roadshows
- broader awareness campaigns on the how to be involved in the EP consultation process.

Woodside recognises that information may 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 a preference for an alternative form of communication is expressed by a person or organisation. There might be limitations in how Woodside can consult with relevant persons.

Typical forms of communications for categories of relevant persons are set out below.

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 <i>GL 1887 – Consultation with Commonwealth agencies with responsibilities in the marine area</i> – January 2023 by using email for its consultation unless another form of communication is requested.  Other forms of communication, such as phone calls, meetings and/or presentation briefings are used on request.
Government departments / agencies – environment	
Government departments / agencies – industry	
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.  State commercial fisheries and recreational marine users: <ul style="list-style-type: none"><li>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.</li></ul> Peak representative bodies: <ul style="list-style-type: none"><li>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.</li></ul>
Recreational marine users and peak representative bodies	
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

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Category of relevant person	Typically accepted form of communication
	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 ( <i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area</i> – 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	Local government: NOPSEMA's guideline ( <i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area</i> – January 2023) for engagement with local government is used as a reference for Woodside's approach for communicating with historical heritage groups or organisations.  Community reference/liaison groups and chambers of commerce: Email and presentations are 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.
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 Appendix F, Table 2.

Appendix F, Table 3 sets out the information which is provided to persons or organisations that are 'not relevant' for the purposes of Regulation 25 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 the Titleholder notifies NOPSEMA 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 under the Environment Regulations.

#### 5.4.2 Reasonable period for consultation

Woodside seeks to consult in order to support preparation of its EP. 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's methodology allows relevant persons a reasonable period for consultation (Regulation 25(3)). A reasonable period for all relevant persons, including Traditional Custodians, 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 sets out a public consultation period of 30 days
- the Department of Mines, Energy and Petroleum (DEMIRS) *Guidelines for Consultation with Indigenous People by Mineral Explorers* directs a period of 21-30 days of consultation with Traditional Custodians
- 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 to allow identification, contact and response from Traditional Custodians (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). 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...”

Woodside seeks feedback in order to support preparation of its EP. 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 providing a reasonable period for consultation is as follows:

- advertising 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
- providing consultation materials directly to identified relevant persons as well as persons who are not relevant but Woodside chose to contact and providing a target date for feedback. Woodside acknowledges that feedback may be received from relevant persons following the target date
- acknowledging that 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
- following 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
- engaging in two-way dialogue with relevant persons or organisations where feedback is received.

Appendix F, Table 2 and Table 3 sets out a history of ongoing consultation and demonstrates that a reasonable period of consultation has been provided.

Woodside considers that 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 and at all stages of the life of the EP as per Woodside's ongoing consultation approach 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). Consultation is a “real world activity” and must be capable of reasonable discharge. 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.

When the Titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, then Regulation 25 consultation requirements are met. Meeting these obligations requires evaluative judgement 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.

While a Titleholder is required to provide an opportunity to consult, the Titleholder is not required to obtain consent to engage in the activity from a person being consulted, or confirmation from a person being consulted, that consultation is complete. The Federal Court has commented that a “reasonable opportunity” for consultation must be afforded to relevant persons. A reasonable opportunity may not be every opportunity requested and is limited to reasonable opportunities to consult.

Woodside has completed 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. Woodside has also provided a reasonable opportunity for there to be genuine two-way dialogue on a person’s claims or objections.

Woodside has discharged its duty under Regulation 25 and considers that is complete.

Appendix F, 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 they have further information to share or claims that consultation under Regulation 25 has not been completed, Appendix F, Table 2 and Table 3 provide reasons 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, Woodside identifies and consults First Nations peoples, some of whom identify as Traditional Custodians, whose functions, interests or activities may be affected by the activities under an EP.

### 5.5.1 Approach to methodology – Woodside’s interpretation of Tipakalippa Appeal

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 5.5.3 to 5.5.7).

Woodside notes the Full Federal Court discussed several *Native Title Act 1993 (Cth)* 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, 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.”*

*“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” (emphasis added).*

“... there is no definition of what constitutes “consultation for the purpose of Reg11A [now Regulation 25] ... 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” (emphasis added).

The Judgment in the *Tipakalippa Appeal* makes it clear that a Titleholder will have some decisional choice in identifying which 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 functions, interests or activities, and how the requisite consultation is undertaken. Consultation is not fixed to a rigid process and will 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 5.2).

Consistent with the *Tipakalippa Appeal*, Woodside considers NTA-style “full group” meetings are not required for there to be compliance with Regulation 25. Nominated representative corporations (such as PBCs established under the *Native Title Act 1993 (Cth)*) 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. It is not 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 Traditional Custodian organisations and individuals, including within the Commonwealth Native Title and cultural heritage systems, and state and territory cultural heritage and land rights systems. The team understands the complexities of making information accessible to groups and individuals and engaging in accordance with Traditional Custodian groups' established channels of communication and methods of consultation. Woodside's First Nations team exercises its professional judgement and is respectful of long-standing relationships (where in place) when considering consultation with Traditional Custodian groups. The First Nations team's approach is also informed by the established systems of recognition for Traditional Custodian groups and their nominated representative corporations within particular jurisdictions.

For example, the methodology for engaging with Traditional Custodian 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 Traditional Custodian 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 First Nations groups that have the cultural authority to speak for country adjacent to the EMBA and 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. 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 Traditional Custodian communities. Woodside follows these processes for the appropriate broad capture of individuals' awareness of our activities, to self-identify (Section 5.3.4), and to provide feedback to inform the management of environmental impacts and risks.

Using these processes, Woodside communicates information about EPs by:

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- advertising in relevant Indigenous and non-Indigenous 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 Summary Consultation Information Sheets with content developed by Woodside's First Nations team to remove jargon and present information in a simplified format
- directing contact through nominated representative corporations
- using social media (i.e. Facebook/Instagram), texts, phone calls 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))
- carrying out ongoing consultation post Regulation 25 consultation, where Woodside has a Program of Ongoing Engagement with Traditional Custodians. This program 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 feedback from Traditional Custodian groups
- basing members of its First Nations team 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 distributing information and providing notice to the community to support Traditional Custodian attendance and involvement at Woodside's information sessions and community roadshows
- ensuring that 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 who to appropriately consult with (such as Elders)
- holding meetings on-Country at a place and time agreed with 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.

The First Nations team approach to consultation is also consistent with the Federal Court's decision in the *Munkara Case*. The *Munkara Case* notes that the word *"culture"* (and hence the word *"cultural"*) has a communal aspect to it. To establish cultural features, it is necessary that the beliefs and values are held by the relevant people as a people. For values, features or beliefs that are expressed by an individual to be *"cultural"* they cannot simply be an individual's belief - the belief must have a communal aspect too and demonstrate that the *"individual beliefs are broadly representative of the beliefs of other members of the group"*. The phrase *"cultural features"*, when applied to *"people"* as constituent parts of an ecosystem, is not directed to idiosyncratic views or beliefs of an individual. When the First Nations team is told that a particular value is cultural by an individual Traditional Custodian, that information is taken back to the relevant cultural authority to test its broad acceptance. In the case of gender sensitive information, that information would be restricted to the specific gender within the community.

### 5.5.3 Identification of relevant persons

To undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with Regulation 25(1) (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

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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 5.5.4). 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 corporation. 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 5.5.4 below, 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 to 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 Traditional Custodians, rather than requiring members to be notified via a formal authorisation process which seeks, from members, authorisation of agreements and Native Title/compensation claims under the *Native Title Act 1993 (Cth)*.

In this consultation, Woodside requested nominated representative corporations to identify any potential individual relevant persons for consultation. Woodside requests nominated representative corporations to distribute consultation materials to their members. However, Woodside recognises that the process is voluntary and that 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.

#### 5.5.4 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 5.5.3). Woodside's approach to providing individual Traditional Custodians the opportunity to self-identify and consult for an EP is as follows:

- Woodside applies the principles of self-determination when consulting with First Nations people by consulting through the Traditional Custodians 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 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 it 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. To date, most nominated representative corporations 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 EP 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.

### 5.5.5 Sufficient information

Woodside recognises that 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 may depend on the degree to which a relevant person is potentially affected.

Woodside produces Consultation Information Sheets for each EP which is provided to relevant persons and organisations for the purpose of seeking feedback on the activity (Section 5.4.1). In response to feedback from Traditional Custodians on information provisions, Woodside has tailored effective consultation methods for its activities. These methods are specifically designed for First Nations people, so that information is provided in a form that is readily accessible and appropriate. The targeted Summary Consultation Information Sheet is developed and reviewed by Woodside's First Nations team to ensure that content is appropriate to the intended recipients, which 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. Along with members of Woodside's First Nations engagement team, key project personnel and environmental 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.

### 5.5.6 Reasonable period for consultation

Woodside seeks to consult in order to support preparation of its EP. 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).

### 5.5.7 Discharge of Regulation 25

Woodside's consideration and approach to discharging Regulation 25 for relevant persons is discussed in Section 5.4.3. In addition to this, Woodside has considered the application of Regulation 25 specific to First Nations based on the *Tipakalippa Appeal*.

In relation to First Nations 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 EP 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 EP and approval process, for example, statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities. Under Regulation 34(g), 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 Appendix F, Table 1 and Table 2 of the EP and includes a statement of Woodside's response, or proposed response, if any, to each objection and claim.

In accordance with Regulation 26(8), sensitive information (if any) in an EP, and the full text of any response by a relevant person to consultation under Regulation 25, 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 7.9), 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 7.7).

## **6. ENVIRONMENTAL IMPACT AND RISK ASSESSMENT, PERFORMANCE OUTCOMES, STANDARDS AND MEASUREMENTS CRITERIA**

### **6.1 Overview**

This section presents the impact and risk analysis and evaluation, EPOs, EPSs and MC for the Petroleum Activity, using the methodology described in Section 2 of this EP. Impacts and risks associated with the Petroleum Activity are summarised in Table 6-1 and evaluated throughout this chapter.

**Table 6-1: Environmental impact analysis summary of planned and unplanned activities**

Aspect	EP section	Risk rating				Acceptability of impact/risk
		Impact/ consequence	Potential impact/consequence level	Likelihood	Current risk rating	
Planned activities (routine and non-routine)						
Physical Presence: Interaction with Other Marine Users	6.7.1	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	-	-	Broadly Acceptable
Physical Presence: Seabed Disturbance	6.7.2	E	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 from Infrastructure Removal Activities, Project Vessels, Mechanical Equipment and Helicopter Operations	6.7.3	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	-	-	Broadly Acceptable
Routine Light Emissions: External Lighting on Project Vessels	6.7.4	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	-	-	Broadly Acceptable
Routine Atmospheric and Greenhouse Gas Emissions from Fuel Use	6.7.5	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	-	-	Broadly Acceptable
Routine and Non-routine Discharges to the Marine Environment from Project Vessels	6.7.6	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	-	-	Broadly Acceptable
Routine and Non-routine Discharges: Project Fluids and Subsea Discharges	6.7.7	E	Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	-	-	Broadly Acceptable
Unplanned activities (accidents, incidents, emergency situations)						
Unplanned Hydrocarbon Release: Vessel Collision	6.8.2	D	Minor, short-term impact (1–2 years) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	1	M	Broadly Acceptable
Unplanned Hydrocarbon or Chemical Release: Hydrocarbon Release during Bunkering/Refuelling	6.8.3	E	Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	2	M	Broadly Acceptable

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Aspect	EP section	Risk rating				Acceptability of impact/risk
		Impact/ consequence	Potential impact/consequence level	Likelihood	Current risk rating	
Unplanned Discharges: Hydrocarbon and chemical spills from Vessel Subsea Activities	6.8.4	E	Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	2	M	Broadly Acceptable
Unplanned Discharges: Loss of Solid Hazardous and Non-hazardous Wastes/Equipment (including dropped objects)	6.8.5	F	No lasting effect (<1 month). Localised impact not significant to environmental receptor.	2	L	Broadly Acceptable
Physical Presence: Interaction with Marine Fauna	6.8.6	E	Slight, short-term impact (<1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	1	L	Broadly Acceptable
Physical Presence: Accidental Introduction and establishment of Invasive Marine Species	6.8.7	D	Minor, short-term impact (1–2 years) on species, habitat (but not affecting ecosystem function), physical or biological attributes.	0	L	Broadly Acceptable

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## 6.2 Impacts and risks not deemed credible or outside the scope of this EP

During the ENVID several risks and/or impacts were identified as either being outside the scope of this EP, or not relevant to the Petroleum Activity, these are described below:

### 6.2.1 Impacts and risks covered under existing EPs

#### 6.2.1.1 Unplanned Hydrocarbon Release

During the Petroleum Activity there is potential for activities to occur adjacent to or near other live subsea infrastructure within permits as summarised in Table 4-22. Risks associated with this include damage to live infrastructure from dropped objects or vessel collision with other project vessels or facilities. Both of these scenarios could result in a loss of hydrocarbons to the environment. The worst-case credible hydrocarbon release scenarios from these risks have been defined and assessed in the Angel Facility Operations Environment Plan. The Angel Operations EP provides a description and assessment of impacts and risks, as well as management controls and response capabilities (Section 6.8.2 and 6.8.5).

The spill scenarios are, therefore, not addressed further in this EP. Additional controls for prevention of vessel collisions or dropped objects on live infrastructure are outlined in Section 6.8.2 and 6.8.5, respectively.

#### 6.2.1.2 Shallow/Nearshore Activities

The Petroleum Activities Program is located in water depths greater than 75 m and at a distance about 94 km from the nearest landfall (Legendre Island). Consequently, risks associated with shallow/near shore activities such as risks of grounding were assessed as not credible.

## 6.3 Cumulative impacts

Woodside has assessed the cumulative impacts of the Petroleum Activity in relation to other relevant petroleum and greenhouse gas (GHG) activities that could realistically result in overlapping temporal and spatial extents. In particular, planned activities at the Woodside Angel facility which overlaps the Operational Area. While there are currently no planned SIMOPS between the Petroleum Activity and other petroleum activities either by Woodside or other titleholders, a number of activities could potentially coincide if necessary. Potential simultaneous operations (SIMOPS) between the Petroleum Activity and other activities occurring in WA-3-L are described in Section 3.5.1.

If SIMOPS were to occur, up to four vessels may be in the field at the same time based on:

- construction support vessel
- up to three general support vessels, typically a MPSV or LCV.

Where relevant, the cumulative impacts of activities associated with undertaking multiple concurrent or parallel activities associated with this Petroleum Activity have also been assessed in Sections 6.7 and 6.8.

## 6.4 Indirect Impacts Outside the Operational Area

For the proposed redundant Angel Subsea Infrastructure Removal, the potential 'indirect' environmental impacts and risks evaluated are those associated with onshore waste disposal from waste generated in the Operational Area. Due to the nature and scale of these potential indirect environmental impacts and risks, and the existing regulatory frameworks to manage them, these indirect impacts/risks are managed to ALARP and acceptable levels. Relevant EPS, MC and EPOs demonstrating this are outlined in Section 6.8.5.

## 6.5 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.

The EPOs, EPSs and MC specified in this EP are consistent with legislative requirements and Woodside's standards and procedures. They have been developed based on the codes and standards, good industry practice and professional judgement outlined in Section 2.3 as part of the acceptability and ALARP justification process.

As defined in Regulation 5 of the Environment Regulations, an EPO 'for an activity, means a measurable level of performance required for the management of environmental aspects of the activity to ensure that environmental impacts and risks of the activity will be of an acceptable level'.

EPOs are set so that they are consistent with the principles of ESD as defined in section 3A of the EPBC Act and demonstrated through the acceptability process (described in Section 2.3.2), which is applied to the aspects in Section 6, taking into consideration the principles of ESD. The EPOs have been set at a level of environmental performance that is proportionate to the identified environmental impact or risk.

Impact based EPOs, where qualitative terms (e.g. 'prevent', 'limit') are used in EPOs, are supported by detailed impact assessment in Section 6 such that they can be interpreted as meaning 'impact and risk greater than that predicted in this EP'.

A risk-based EPO ties in with Woodside's risk management processes so that risk is maintained within a level that has been evaluated as being appropriate to the nature and scale of the risk. WMS and relevant controls are used to identify and treat potential step-outs (resulting in an increased likelihood) from expected controls performance or integrity envelopes.

EPSs and MC are defined to measure environmental performance against the EPOs. EPSs are statements of performance required of a control so as to manage risk and/or impacts to ALARP and to an acceptable level. EPSs are used as the basis for environmental performance reporting and demonstrate compliance against the EPO.

MC are outlined defining how environmental performance is measured and they set the criteria to determine whether the EPOs and EPSs have been met during the activity.

For planned activities, where the activity is undertaken as described and the relevant EPS are implemented, it confirms that the EPOs are being met. A breach of the EPOs or EPSs constitutes a 'recordable incident' under the Environment Regulations.

## 6.6 Presentation

The environmental impact and risk analysis and evaluation, demonstration of ALARP and acceptability, EPOs, EPSs and MC are presented in tabular form throughout this section, as shown in the example below. 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													
Description of the context for the impact/risk. Regulation 21(1), 21(2) and 21(3)													
Description of the Activity – Regulation 21(1)				Description of the Environment – Regulations 21(2)(3)				Consultation – Regulation 25 and 24(b)					
Impact and risk evaluation summary													
Summary of ENVID outcomes													
Source of impact/risk Regulation 21(1)	Environmental value potentially impacted Regulations 21(2)(3)						Evaluation Regulations 21(5)(6)						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Summary of source of risk/ impact													

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Description of source of impact or risk
Description of the identified risk/impact including sources or threats that may lead to the impact/risk or identified event. Regulation 21(1).
Impact or consequence assessment
<i>Environmental Value(s) Potentially Impacted</i>
Discussion and assessment of the potential impacts to the identified environment value/s in accordance with Regulation 21(5) and 21(6). Description of potential impacts to environmental values aligned to Woodside impacts and risk classifications (Section 2.2.5).

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>13</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>ALARP/hierarchy of control tools used – Section 2.2.4</b>				
Summary of control considered to ensure the impacts and risks are continuously reduced to ALARP. Regulation 21(5)(c).	Technical/logistical feasibility of the control. Cost/sacrifice required to implement the control (qualitative measure).	Qualitative commentary of impact/risk that could be averted/ environmental benefit gained if the cost/ sacrifice is made, and the control is adopted.	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.	If control is adopted, reference to Control No. provided.
<b>ALARP statement:</b> Made on the basis of the environmental impact/risk assessment outcomes, use of the relevant tools appropriate to the decision type (Section 2.2.3.2) and a proportionality assessment in accordance with Regulation 34(b).				

Demonstration of acceptability
<b>Acceptability statement:</b> Made on the basis of applying the process described in Section 2.3 in accordance with Regulation 34(c)

EPOs, EPS and MC			
Environmental performance outcomes	Controls	Performance standards	Measurement criteria
EPO No. S: Specific performance that addresses the legislative and other controls that manage the activity, and against which performance by Woodside in protecting the	C No. Identified control adopted to ensure that the impacts and risks are continuously reduced to ALARP. Regulation 21(5) (c).	PS No. Statement of the performance required of a control measure. Regulation 21(7)(a).	MC No. Measurement criteria for determining whether the outcomes and standards have been met. Regulation 21(7)(c).

### 13 Qualitative measure

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EPOs, EPS and MC			
<b>Environmental performance outcomes</b>	<b>Controls</b>	<b>Performance standards</b>	<b>Measurement criteria</b>
<p>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 value<sup>14</sup></p> <p>T: The outcome will state the timeframe during which the outcome will apply or by which it will be achieved.</p>			

<sup>14</sup> Where impact/consequence descriptors are presented within EPOs the descriptors are aligned with the definitions provided in the Woodside Risk Matrix (refer Section 1).



Impact assessment
<i>Environmental value(s) potentially impacted</i>
<p><b>Interactions with Commercial Fishing Activities</b></p> <p>The Operational Area overlaps three Commonwealth and 13 State managed fisheries (Section 4.10.1). However, only the State-managed Pilbara Demersal Scalefish Fishery (which includes the Pilbara Trap managed Fishery, Pilbara Line Fishery (Condition) and Pilbara Fish Trawl (Interim) Managed Fishery are considered to have limited potential for interaction with project activities (Section 4.10.1).</p> <p>The Operational Area is located within a 60 NM CAES block which has reported up to four Pilbara Demersal Scalefish Fishery vessels active in the block each year between July 2019 and June 2024, according to Fishcube data available from DPIRD. Each year consistent annual fishing effort was reported from these fisheries (Section 4.10.1). Given the overlap of the Operational Area with the fishing block and the annual fishing effort, interactions with the fishery may occur.</p> <p>During project activities, the presence of vessels and a temporary exclusion zone around the MCV in the Operational Area may restrict the use of the area by the fishery, and any other commercial fisheries that have been identified as having potential (but unlikely) to use the Operational Area. Given the exclusion zone is relatively small (500 m) and temporary, the area from which fishing vessels may be displaced at any one time is negligible when compared to the area available to fish, and in which fishing effort was recorded over the past 5 years. Given the short duration of the activity, the temporary presence of the vessels in the Operational Area would potentially result in a localised interference (navigational hazard) and displacement/avoidance by commercial fishing vessels within the immediate vicinity of project vessels. However, there was no direct response from commercial fisheries during the stakeholder consultation period, and as such the potential impact is considered to be negligible and temporary.</p> <p>The ongoing presence of flowline sections and some infrastructure connected to the Angel Platform until removal at the end of field life will be within the 500 m safety exclusion zone around the Angel platform and will therefore not pose any risk to commercial fishing activities.</p> <p>If wellhead infrastructure cannot be fully removed following the completion of this Petroleum Activity, ongoing physical presence will continue to be managed through the Angel Operations EP and is unlikely to result in more than a localised impact. As stated above, historic data shows that actual fishing effort in this area is low. Woodside understands that fishing effort is subject to change and well infrastructure will continue to be marked on navigational charts until they are removed, to provide sufficient information for trawl fishers to avoid the area.</p> <p><b>Displacement of Recreational Fishing</b></p> <p>Recreational fishing is unlikely to occur in the Operational Area due to its depth and distance from shore. However, during stakeholder consultation Recfishwest advised that the proposed activities occurring will affect areas accessed by recreational fishers and therefore requested activity updates to inform the fishing community of exclusion zones. Woodside has responded to Recfishwest advising that they would be notified of activity dates for communication to the recreational fishing community as evidenced in Appendix F. While the presence of vessels and a temporary exclusion zone around the MCV and the Operational Area may restrict the use of the area by recreational fishers recreational fishing in the region is concentrated around the coastal waters and islands of the NWMR, such as the Montebello Islands (about 142 km south-west from the Operational Area). If recreational fishing effort occurred within the Operational Area while activities are being performed, displacement would be temporary, minimal and relate only to the exclusion zone that would be in place around the MCV when undertaking removal activities. Therefore, the potential impact is considered to be localised and would result in no lasting effect.</p> <p>Due to the equipment that is expected to be used by recreational fishers, remaining well and subsea infrastructure is not expected to cause any adverse interactions. Recreational fishers were consulted that where possible well infrastructure will be removed above the mudline once wells are permanently abandoned in accordance with applicable regulatory requirements. No objections or claims were identified during stakeholder consultation.</p> <p><b>Displacement to Commercial Shipping</b></p> <p>The presence of project vessels could potentially cause temporary disruption to commercial shipping, however the nearest marine fairway is approximately 24 km east of the Operational Area (Section 4.10.4). Shipping in the area is mainly related to the resources industry. The potential impacts associated with this Petroleum Activity may include displacement of vessels as they make slight course alterations to avoid project vessels operating within the Operational Area. Considering the highly localised and temporary nature of the impact, no lasting effect on commercial shipping activities is anticipated. AMSA was consulted during the development of this EP and although feedback was received, no claims or objections were made, as evidenced in Appendix F.</p> <p><b>Interference with Existing Oil and Gas Infrastructure</b></p> <p>Interactions with operators of other nearby facilities have the potential to occur, particularly the Woodside-operated Angel facility, located within the Operational Area. Although unlikely, interactions may occur with vessels undertaking IMR activities on the producing Angel subsea infrastructure. The North Rankin Complex (operated by Woodside) is 46 km south-west of the Operational Area, and the Okha (FPSO) is 6 km west of the Operational Area (Section 4.10.5). This would mainly be as a result of project-based vessel movements to and from the Operational Area, which are not covered within this EP. Stakeholder consultation also identified that Santos may have planned activities at the same</p>

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time in the same vicinity as Woodside's proposed activities in this EP and requested notification of planned vessel movements, Woodside has responded to Santos confirming that notification prior to the commencement and ending of activities will be provided to AHO as evidenced in Appendix F. Any impacts are considered negligible with no lasting effects.

#### Cumulative Impacts

There is potential for cumulative impacts to commercial fisheries from concurrent activities as described in Section 3.5.1. If SIMOPS were to occur, up to four vessels and a MODU may be in the field at the same time. For the fisheries considered active in the vicinity of the Operational Area, potential cumulative impacts to vessels that overlap the Operational Area would be localised with no lasting effect.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>15</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Vessels to adhere to the navigation safety requirements including the <i>Navigation Act 2012</i> and any subsequent Marine Orders.	F: Yes. CS: Minimal cost. Standard practice.	The act regulates ship related activities and invokes certain requirements of MARPOL. Vessels (relevant to class) will adhere to requirements.	Control based on legislative requirement – must be adopted.	Yes <b>C 1.1</b>
Establishment of a 500 m temporary exclusion zone around MCV and communicated to marine users.	F: Yes CS: Minimal cost. Standard practice.	Establishment of a 500 m temporary exclusion zone around MCV reduces the likelihood of interaction with other marine users.	Benefits outweigh cost/sacrifice.	Yes <b>C 1.2</b>
<b>Good practice</b>				
AHO notified of activities and movements no less than four weeks prior to scheduled activity commencement.	F: Yes. CS: Minimal cost. Standard practice.	Notification of AHO will enable them to update maritime charts thereby reducing the likelihood of interaction with other marine users.	Benefits outweigh cost/sacrifice.	Yes <b>C 1.3</b>
Notify AMSA Response Centre (ARC) of activities and movements 24 to 48 hours before the scheduled activity commencement date, and at the end of activities.	F: Yes. CS: Minimal cost. Standard practice.	Notification to ARC allows for population of marine notices	Benefits outweigh cost/sacrifice.	Yes <b>C 1.4</b>
Notify relevant government departments, fishing industry representative bodies, fishery licence holders and other oil and gas operators (Santos) prior to commencement and upon completion of activities.	F: Yes CS: Minimal cost. Standard practice.	Communication of the Petroleum Activities Program to other marine users ensures they are informed and aware, thereby	Benefits outweigh cost/sacrifice. Control is also standard practice	Yes <b>C 1.5</b>

#### 15 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>15</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		reducing the likelihood of interference with other marine users.		
Notify ARC of any extended delay in the timing of the Petroleum Activity.	F: Yes. CS: Minimal cost. Standard practice.	Communicating the Petroleum Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users.	Benefits outweigh cost/sacrifice. Control is standard practice.	Yes <b>C 1.6</b>
Establish and maintain a publicly available interactive map which provides stakeholders with updated information on activities being conducted as part of the Petroleum Activity including location of MODU.	F: Yes CS: Minimal cost. Standard practice.	Interactive map provides additional/alternate method for marine users to obtain information on the timing of activities, thereby reducing the likelihood of interference with other marine users.	Benefits outweigh cost/sacrifice.	Yes <b>C 1.7</b>
Wellheads to remain on AHO navigation charts until removal.	F: Yes CS: Minimal cost. Standard practice.	The presence of the wellheads is currently marked on AHO navigation charts. Their presence will remain on the charts until removal activities are completed, giving fishers and other marine users sufficient information to plan activities around the infrastructure until removal.	Benefits outweigh cost/sacrifice. Control is also Standard Practice.	Yes <b>C 1.8</b>
<b>Professional judgement – Eliminate</b>				
Wellhead removal at or as close as practical to the mudline.	F: Yes. CS: Moderate cost.	Removal of infrastructure eliminates any potential interactions with commercial fishers.	Benefits outweigh cost/sacrifice.	Yes <b>C 1.9</b>
Limit activities to avoid peak shipping and commercial fishing activities.	F: No. Shipping occurs year-round. The potential for displacement of shipping from the Operational Area may occur, given the moderate shipping	Not considered – control not feasible.	Not considered – control not feasible.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>15</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	density adjacent to the Operational Area. Simultaneous operations with fishing seasons cannot be eliminated as fishing activities may occur throughout the year, and exact details on future fishing activities are not known. CS: Not considered – control not feasible.			
Eliminate use of vessels.	F: No. The use of vessels is required to conduct the Petroleum Activity. CS: Not considered – control not feasible.	Not considered – control not feasible.	Not considered – control not feasible.	No
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with the physical presence of project vessels on other marine users, such as shipping and commercial fisheries. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact assessment has determined that, given the adopted controls, physical presence of the project vessels and continued presence of wellhead infrastructure prior to removal may result in negligible, localised impacts (<1 month) to other marine users, with no lasting effect. Further opportunities to reduce the impacts and risks have been investigated above. The impact assessment has also determined that, given the adopted controls, if wellhead infrastructure cannot be fully removed following the completion of this Petroleum Activity, ongoing physical presence of will continue to be managed through the Angel Operations EP and is unlikely to result in more than a localised impact. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
EPO 1	C 1.1	PS 1.1.1	MC 1.1.1

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EPOs, EPS and MC			
EPO	Controls	PS	MC
Impacts to relevant stakeholders from the Petroleum Activities Program planned activities will be limited through the provision of appropriate information / notification.	Vessels to adhere to the navigation safety requirements including the <i>Navigation Act 2012</i> and any subsequent Marine Orders.	Vessels compliant with Navigation Act and Marine Order 21 (Safety of navigation and emergency procedures) 2012.	Marine assurance inspection records demonstrate compliance with standard maritime safety procedures.
	<b>C 1.2</b> Establishment of a 500 m temporary exclusion zone around the MCV and communicated to marine users.	<b>PS 1.2.1</b> A 500 m radius temporary exclusion zone established around the MCV undertaking the petroleum activity, to be enforced by vessels undertaking the petroleum activity.	<b>MC 1.2.1</b> Records demonstrate breaches by unauthorised vessels within the temporary exclusion zone are recorded.
	<b>C 1.3</b> AHO notified of activities and movements no less than four weeks prior to scheduled activity commencement and completion.	<b>PS 1.3.1</b> Notification to AHO of activities and movements to allow generation of navigation warnings (MSIN and NTM [including AUSCOAST warnings where relevant]).	<b>MC 1.3.1</b> Records demonstrate that AHO notifications complete.
	<b>C 1.4</b> Notify AMSA Response Centre (ARC) of vessel activities and movements 24 to 48 hours before the scheduled activity commencement date, and at the end of activities.	<b>PS 1.4.1</b> Vessel notification to ARC to prevent activities interfering with other marine users. ARC will require the vessel's details (including name, callsign and Maritime Mobile Service Identity (MMSI)), satellite communications details (including INMARSAT-C and satellite telephone), area of operation, requested clearance from other vessels and need to be advised when operations start and end.	<b>MC 1.4.1</b> Records demonstrate notification provided to ARC within required timeframes (start and end of activities).
	<b>C 1.5</b> Notify relevant government departments, fishing industry representative bodies, fishery licence holders and other oil and gas operators (Santos) prior to commencement and upon completion activities.	<b>PS 1.5.1</b> Notification to AFMA, CFA, DAFF (fisheries), DPIRD, WAFIC, Recfishwest, DEMIRS, individual relevant Commonwealth fishery licence holders (in the Operational Area – refer to Table 7-5) and other O&G operators (Santos) ten days before activity commences, and following completion of activities.	<b>MC 1.5.1</b> Consultation records demonstrate that stakeholders have been notified prior to commencement and following completion of the activity.
	<b>C 1.6</b>	<b>PS 1.6.1</b> AHO and ARC notified of any extended delay in the	<b>MC 1.6.1</b> Consultation records demonstrate that AHO and

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EPOs, EPS and MC			
EPO	Controls	PS	MC
	Notify AHO and ARC of any extended delay in the timing of the Petroleum Activity.	timing of the Petroleum Activity.	ARC were notified of extended delays in the timing of the Petroleum Activity.
	<b>C 1.7</b> Establish and maintain a publicly available interactive map which provides stakeholders with updated information on activities being conducted as part of the Petroleum Activity including location of MODU.	<b>PS 1.7.1</b> Activity interactive map established and maintained throughout activities.	<b>MC 1.7.1</b> Records demonstrate interactive map was provided and available to stakeholders throughout activities.
	<b>C 1.8</b> Wellheads to remain on AHO navigation charts until removal.	<b>PS 1.8.1</b> Notification to AHO after wellhead removal.	<b>MC 1.8.1</b> Consultation records demonstrate that AHO have been notified of wellhead removal.
	<b>C 1.9</b> Wellhead removal at or as close as practical to the mudline.	<b>PS 1.9.1</b> Well infrastructure is removed at or as close as practicable to the mudline.	<b>MC 1.9.1</b> As left survey demonstrates well infrastructure has been removed (if removed under this EP).

## 6.7.2 Physical Presence: Seabed Disturbance

Context													
Infrastructure removal activities – Section 3.9 ROV Operations – Section 3.6.3			Habitats and Biological Communities – Section 4.5 Cultural values and heritage – Section 4.9				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Disturbance to seabed from subsea cleaning, deburial and other preparation for removal of infrastructure	X	X		X			A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 2, 3
Disturbance to seabed from ROV operations (movement and work basket) and equipment laydown	X	X		X				F	-	-			
Disturbance to seabed from placement and recovery of transponders and clump weights on seabed	X			X				F	-	-			
Disturbance to seabed and benthic habitats from infrastructure removal	X	X		X	X			E	-	-			
Continued presence of subsea infrastructure on the seabed prior to removal	X			X	X			F	-	-			
Loss of artificial marine habitat growth on flowlines, EHUs, and wellheads due infrastructure removal				X	X			E	-	-			
Description of source of impact													
<b>Infrastructure Deburial, Subsea Cleaning and Other Preparation Activities</b> Due to natural setting and buildup of sediment, deburial of some or all sections of the Angel flowlines, EHUs, and other subsea infrastructure may be required during the preparation of subsea infrastructure for removal. Burial status of various infrastructure is described in Table 3-9 where burial ranges from 50% up to 80% for flowlines and EHUs. A MFE will be utilised for controlled deburial of flowlines, EHUs and other infrastructure where required (Section 3.9.1). Sediment displacement for flowline deburial of AP2, AP3 and AP4 (2.2 km, 1.6 km and 2.9 km, respectively) is estimated to be ~550 m³ to 1100 m³. Relocated sediment will be distributed around the flowlines. Seabed disturbance associated with the excavation and removal of sediment may occur within tens of meters either side of the flowlines, and confined to the footprint of, or within a few metres of, all other infrastructure and is estimated in Table 6-2.													

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ROV high-pressure water jetting, brushing, sulfamic acid soaks and Calciwash may be used for the removal of marine growth and deburial of infrastructure that does not require MFE. The benthic disturbance footprint is expected to be localised and occur predominantly where high-pressure water jetting and/or brushing by ROV occur.

Sediment may need to be relocated so that the diamond wire saw can cut at or below the mudline. Sediment relocation will be localised and within the immediate vicinity of the wellhead.

**Table 6-2: Seabed disturbance estimates for subsea infrastructure recovery**

Recovery Activity	Approximate Disturbance Footprint
Flowlines	6,700 m <sup>2</sup>
EHU's	7,200 m <sup>2</sup>
Rigid Spools	1,260 m <sup>2</sup>
Subsea structures	710 m <sup>2</sup>
Secondary Stability Structures	150 m <sup>2</sup>
Total Disturbance Footprint	16,020 m <sup>2</sup>

### **ROV**

The use of a ROV during the Petroleum Activity may result in temporary seabed disturbance and suspension of sediment, causing increased turbidity as a result of working close to, or occasionally on, the seabed. ROV use close to or on the seabed is limited to that required for effective and safe subsea activities. The footprint of a typical ROV is ~2.5 m × 1.7 m. The disturbance as a result of ROV operation will be significantly less than that occurring from infrastructure removal.

### **Equipment lay-down and wet storage**

Equipment such as ROV frames and baskets may be placed on the seafloor during infrastructure removal activities. Frames/baskets typically have a perforated base with a footprint of about 15 m<sup>2</sup>. This equipment is removed from field via recovery to the support vessels at the completion of activities. Wellheads may be set down on the seabed in the immediate vicinity of removal for a period to enable safe rigging prior to recovery or relocation.

Infrastructure may be temporarily wet stored on the seabed (within the timeframe of the activity campaign), resulting in an additional seabed disturbance (accounted for in Table 6-2). The disturbance footprint from wet-parked equipment will depend on the size of the equipment; refer to Table 3-9 for details on equipment sizes.

### **Underwater transponders**

An array of long base line (LBL) transponders may be installed on the seabed as required to infrastructure removal activities. Transponders may be moored to the seabed either by a clump weight or mounted on a seabed frame. The standard clump weights used, made of cement or steel, will likely weigh about 80 kilograms (kg). A typical seabed frame is 1.5 m × 1.5 m × 1.5 m in dimension and weighs about 40 kg. On completion of the positioning operation, the array transponders moored by clump weight will be recovered by means of an acoustic release and the clump weights removed from the seabed. The transponders mounted on seabed frames will be removed by ROV.

### **Infrastructure removal**

The primary method for flowline recovery will utilise a hydraulic shear cutting tool (drop saw or diamond wire saw may be used as contingency tools). Discharge of treated water from the flowlines, and potential generation of swarf and spall during removal activities are assessed in Section 6.7.7.

Flowline dimensions are summarised in Final cut and plug locations for Angel flowlines and umbilicals will be determined through risk assessments with the selected subsea recovery contractor. The assessment will consider dropped object analysis results, flare heat dispersion modelling and distance from live infrastructure associated with the Angel platform.

Table 3-8. Flowline removal will occur within the deburial footprint and will not result in additional seabed disturbance footprints.

EHUs will be recovered to a vessel either onto reels or cut into sections on the back deck of the vessel. Recovery will be undertaken using a heave compensated crane and associated equipment. The UTAs, IUTB, control jumpers will likely be recovered to the same vessel removing the EHU. ROVs will be used to support the activities, including cutting and/or disconnecting infrastructure from other equipment and placing infrastructure (e.g., jumpers) into subsea baskets to allow recovery. ROVs will also be used to perform water jetting around the base of some infrastructure (e.g., UTAs) to avoid any suction resistance or to remove marine growth, relocate sediment. Discharge of fluids remaining in EHUs during removal is assessed in Section 6.7.7. Cutting of wellheads may require localised sediment relocation.

### **Loss of artificial habitat**

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The removal of subsea infrastructure will result in the loss of artificial habitat and associated organisms that may have formed on structures since installation.

#### **Continued presence of subsea infrastructure**

The Angel platform will be continuing to produce from the Lambert Deep flowline during the decommissioning of AP2, AP3 and AP4 infrastructure. As a result, sections of flowline and EHU will be cut, plugged and left in situ due to the operational restrictions surrounding the platform. Remaining sections of flowlines and EHUs will be removed in a future campaign. Remaining flowlines and EHUs are expected to extend no more than approximately 202 m from the platform (within the Angel Platform 500 m safety exclusion zone).

### **Impact assessment**

#### **Environmental value(s) potentially impacted**

Seabed disturbance from the Petroleum Activity can be categorised into two potential impacts, being:

- direct physical disturbance of benthic habitat
- indirect disturbance to benthic habitats from sedimentation.

#### **Water and sediment quality**

Sediment plumes will be generated from a number of processes in the preparation and removal of infrastructure and will result in temporary elevation of suspended sediments where plumes are present. The seabed within the Operational Area is characterised by soft sediments, with sparse epifauna. The Glomar Shoals KEF, overlapping with the Operational Area is also composed of soft sediment seabed and not areas of higher, phototropic biota (AIMS, 2014), therefore sediment plumes are unlikely to disrupt the biodiversity and productivity of the KEF Discrete areas of hard substrate hosting sessile filter feeding communities may also be associated within the Ancient Coastline at the 125 Depth Contour KEF.

Water and sediment quality of the broader Angel field is addressed in the Angel Operations EP. A review of environmental baseline surveys completed at Angel in 2002, SKM in 2006 and Lambert Deep in 2014, found concentrations of toxicants or pollutants were below guideline levels. It was noted that no guideline values are available for barium but levels were slightly elevated (Jacobs 2014, Bowman Bishaw Gorman 2002, SKM 2006). Sediment plumes from infrastructure decommissioning are not expected to result in the release of toxicants or pollutants into the water column.

Given the short nature of each activity, and the localised footprint, any impacts to water and sediment quality are likely to be limited and transient in nature.

#### **Benthic Habitats**

Direct physical disturbance to benthic environment (including fauna), indirect disturbance to benthic habitats and fauna by sedimentation and increase in turbidity to water column and the removal of artificial habitat are considered potential impacts to benthic habitats. The Operational Area is expected to consist primarily of fine carbonate sediments, which is typical of the broader NWMR, but may have areas of hard substrate (Appendix C). Communities in the area are expected to largely consist of low-density sessile benthic biota, mobile epifauna and infauna. Physical impacts from the Petroleum Activity are expected to be predominantly confined to benthic infauna and epifauna associated with the soft sediment seabed, particularly filter feeders, inhabiting on and within the immediate vicinity of infrastructure. Temporary disturbance to benthic habitats may occur during the preparation and removal processes along flowlines, EHU, wellheads and other subsea infrastructure. These impacts are expected to be localised and predominantly restricted to the footprint of the infrastructure and surrounding area.

ROV high pressure water jetting and scrubbing will result in the removal of epifauna habiting the infrastructure and localised, short-term generation of sediment plumes. The spatial extent of benthic disturbance associated with the deburial and removal of infrastructure is expected to be higher where MFE is utilised along flowlines, EHUs and other subsea infrastructure where disturbances may extend to tens of meters from the infrastructure footprint. A turbidity survey undertaken for Chevron's Wheatstone project during pipeline trenching in water depths of 130 m to 150 m concluded that a turbid plume may be evident up to 70 m from the trenching operations, depending on environmental conditions. However, within 2 hours of ceasing trenching operations, the turbidity level was observed to return to, or very close to background levels (Chevron, 2014). Considering the widespread representation of the benthic and infauna communities within the Operational Area and the broader NWMR, significant impacts to these communities are not expected.

The artificial habitats created by the infrastructure will also be permanently removed along with any associated biota that have colonised on or in the immediate surroundings of the structures. As detailed in Section 4.5, the flowlines and EHUs provide deepwater epibenthic habitat for filter-feeders including deepwater corals, crinoids (featherstars), Gorgonocephalidae (basket stars), hydroids, true anemones and sponges. The growth of epifauna sequentially provides habitat for various species of fish, including commercially important fish species, of which none are considered to be of conservation significance. However, long-term monitoring of similar structures has shown trends of a reduction in the abundances and diversity of fish and epibenthic species, likely as a result of the continued natural burial of structures and the resultant reduction in available surface area for epibenthic habitats to establish (Bond and Taylor, 2019). The removal of subsea infrastructure will directly impact and remove the associated epifauna invertebrates. While the removal of infrastructure would result in the immediate loss of epibenthic habitat, some of the

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associated fish and more mobile species would likely migrate to other habitats, including nearby artificial habitats created by other oil and gas infrastructure within the area (Section 4.10.5).

ROV activities near the seafloor may result in minor and short-term impacts to benthic biota as a result of an elevation in turbidity, potentially resulting in the obstruction of respiratory and feeding parts (turbidity) of filter feeding organisms. Impacts as a result of ROV activities are expected to be localised with no lasting effect. The temporary placement of frames/baskets on the seabed will result in minor turbid plumes and short-term impacts to benthic biota as a result of elevated turbidity and temporary covering.

Flowlines and EHU sections left in situ will continue to provide hard substrate for marine habitats to form, however, will be limited due to future removal. The physical presence of any remaining well infrastructure left in situ has the potential to:

- Alter hydrodynamic conditions around the infrastructure, potentially resulting in scouring and accretion
- Introduce hard substrate resulting in the creation of new habitat.

The presence of any remaining well infrastructure on the seafloor can interact with the surrounding hydrodynamic conditions, potentially resulting in disturbance to the seabed (scouring and accretion). However, studies on the effects of anthropogenic structures on the seabed, such as shipwrecks and artificial reefs indicate impacts are restricted to within 10 m of the structures (Smiley, 2006; Lewis and Pagano, 2015). The remaining well infrastructure left in situ will be much smaller than the structures that have been studied and therefore the potential area of disturbance is expected to be much less than 10 m. Furthermore, cuts above the mudline will be made as close to the mudline as practicable and the closer the cut the smaller the potential seabed disturbance would be.

Based on the above impact assessment, impact to benthic habitats within the Operational Area are expected to be localised (within tens of metres of the infrastructure) and short-term. The Petroleum Activity is highly unlikely to impact other sensitive areas in the surrounding region, such as hard coral communities at Glomar Shoal feature considering its distance from the Operational Area (7.25 km from the 50 m depth contour), as described below.

#### **KEFs**

The Operational Area overlaps the Glomar Shoal KEF. The ecological values of the KEF are described in Appendix C. These include the potential of enhanced productivity associated with sessile communities due to increased availability of nutrients and enhanced vertical mixing of water layers. As the Operational Area only overlaps a small portion of the KEF, the ecological functions of the KEF are not predicted to be impacted by the Petroleum Activity.

The Glomar Shoals KEF is a submerged feature at depths of 33 m to 77 m. The benthic habitats of the KEF are characterised by sand/silt substrate and low epibenthic cover (approximately 53% total cover), with soft corals and sponges the most abundant fauna (AIMS, 2014a). While 0.01% of the Operational Area overlaps the Glomar Shoals KEF (approximately 0.11 km<sup>2</sup> of the Glomar Shoals KEF lies within the Operational Area), the hard coral communities associated with the Glomar Shoals feature itself is 7.25 km (from the 50 m depth contour) from the nearest point of the Operational Area. Given that AP2, AP3 and AP4 are at depths between 75 m and 85 m (where benthic cover is less than 2%), and their distance to hard coral communities associated with the Glomar Shoals feature. Activities are expected to remain localised surrounding the subsea infrastructure, potentially impacting the small overlapping area of the Glomar Shoals KEF but not impact the Glomar Shoals feature itself. The NWS Province experiences naturally high episodic sediment resuspension due to events such as tidal movements and cyclones, and the biota in the region are adapted to such conditions. Thus, impacts to Glomar Shoals KEF due to seabed disturbance are not expected to occur.

#### **Cultural Features and Heritage Values**

Underwater Cultural Heritage has been identified as a cultural value by multiple relevant Traditional Custodian groups (See Section 4.9.4). As described in Section 4, the Operational Area is located 2 km from the Ancient Coastline at 125 m depth contour KEF and overlaps the Glomar Shoal KEF. Therefore, seabed disturbance within the Operational Area may directly disturb a very small, localised area of the KEF and there is the potential that unidentified archaeological material may exist. Unidentified archaeological material may potentially be disturbed from removal of infrastructure and placement of supporting equipment on the seabed. As such, controls have been adopted to assist in the identification and management in cases where underwater cultural heritage may be identified. Consultation with Traditional Custodians has not identified any cultural features or heritage values that will be affected by the project activities. While no cultural features have been identified in the Operational Area, a desktop archaeological study will be undertaken prior to the activity commencing to understand any potential cultural features.

#### **Cumulative Impacts**

Cumulative impacts in relation to other relevant petroleum activities (as described in Section 3.5.1) are not predicted to occur as it is expected that any activities associated with the Petroleum Activity will be spatially and temporally separated from activities associated with other decommissioning activities occurring in the relevant petroleum licences. The predicted impacts of these other activities will be similar to those described above, with localised seabed impacts in the vicinity of the subsea infrastructure.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>16</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
An ROV as left survey is undertaken at the end of activity, to confirm all temporary equipment has been removed.	F: Yes. CS: Minimal cost. ROV as-left survey is standard practice	In accordance with OPGGS Act Section 572 all equipment is removed when no longer in use.	Control based on legislative requirements – must be adopted.	Yes <b>C 2.1</b>
In the event that the well infrastructure cannot be removed, remaining infrastructure will comply with the <i>Environmental Protection (Sea Dumping) Act 1981</i> (to the extent that Act is applicable).	F: Yes. CS: Minimal cost, legislative requirement	Compliance with the <i>Environmental Protection (Sea Dumping) Act 1981</i> will mean material left on the seabed is managed appropriately.	Benefits outweigh cost/sacrifice. Control is a legislative requirement.	Yes <b>C 2.2</b>
<b>Good practice</b>				
Environmental monitoring of the seabed prior to and following the Petroleum Activity to assess any impacts to seabed.	F: Yes. CS: Significant. Monitoring of the seabed would have significant additional costs to obtain and analyse data with the spatial resolution to accurately assess changes to the seabed habitat.	Environmental monitoring would not result in any additional information about the seabed above what is provided by the Woodside Well Location and Site Appraisal Data Sheet and mooring design analysis. Therefore, no additional reductions in likelihood or consequence would occur.	Control grossly disproportionate. Monitoring will not reduce the consequence or likelihood of any impacts to the seabed, and the cost associated with the level of monitoring required to accurately assess any impacts greatly outweighs the benefits gained.  Although adoption of this control could be used to verify EPOs, alternative controls identified also allow demonstration that the environmental outcome has been met based on the nature of the activity (i.e. predictable impacts) and relatively low sensitivity of the area.	No

#### 16 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>16</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
Unexpected finds of potential Underwater Cultural Heritage sites/ features, including Traditional Custodian UCH are managed in accordance with an Unexpected Finds Procedure set out in Section 7.2.4.	F: Yes. CS: Minimal costs associated with implementation of process.	Allows management of Unexpected Finds in accordance with legislative requirements, (including Underwater Cultural Heritage Guidance for Offshore Developments and the Guidelines to assessing and managing impacts to Underwater Cultural Heritage in Australian waters (DCCEEW, 2024) under the <i>Underwater Cultural Heritage Act 2018</i> , expert advice and community expectations.	Benefits outweigh cost/sacrifice.	Yes <b>C 2.3</b>
Report any potential underwater cultural heritage finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, <i>Underwater Cultural Heritage Act 2018</i> and the <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> .	F: Yes. CS: Minimal costs associated with reporting process.	Meets legislative requirements and community expectations.	Benefits outweigh cost/sacrifice.	Yes <b>C 2.4</b>
Relevant vessel crew and ROV operators will be advised in an induction of the potential to encounter UCH and requirement to follow the Unexpected Finds Procedure (Section 7.2.4).	F: Yes. CS: Minimal cost.	Ensures workforce are suitably aware of legal and process requirements for managing cultural features and heritage values.	Benefits outweigh cost/sacrifice.	Yes <b>C 2.5</b>
Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for laydown and/or installation of equipment that will cause new seabed disturbance in depths of <130m to avoid or where not possible, minimise physical impacts to cultural heritage areas or prospective areas.	F: Yes. CS: Minimal costs associated with review of data and avoidance or minimisation options.	Review of data by suitably qualified maritime archaeologist will inform potential exclusion or avoidance areas for seabed disturbance. Implementing this process will protect and minimise any physical impacts to underwater cultural heritage. Additionally, this process is not inconsistent with the Guidelines on the application of the	Benefits outweigh cost/ sacrifice.	Yes <b>C 2.6</b>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>16</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		Underwater Cultural Heritage Act 2018: Assessing and Managing Impacts to Underwater Cultural Heritage in Australian Waters (DCCEEW, 2024a).		
<b>Professional judgement – Eliminate</b>				
Wellhead removal at or as close as practical to the mudline.	F: Yes. CS: Moderate cost.	Removal of infrastructure minimises potential long-term impacts to the seabed.	Benefits outweigh cost/sacrifice.	Yes <b>C 1.9</b>
Do not remove infrastructure.	F: Yes. CS: lower cost than removal (i.e. no cost associated with leaving infrastructure <i>in situ</i> ).	Leaving infrastructure <i>in situ</i> would eliminate the impacts to the seabed and removal of artificial habitat associated with removal activities. The infrastructure retained would provide habitat for commercial fish species in the short to medium term before it either becomes completely buried or degrades to a state where the habitat value is lost.	There are some impacts associated with long-term degradation of the infrastructure should it be left in place. Given regulator and other stakeholder concerns over the presence of the infrastructure being left <i>in situ</i> , the benefit of removing the infrastructure outweighs the potential impacts.	No
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 the main tool used to guide and manipulate equipment during infrastructure removal activities. ROV usage is already limited only to that required to	Not assessed, control not feasible.	Not assessed, control not feasible.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>16</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	conduct the work effectively and safely. Due to visibility and operational issues, ROV work on or close to the seabed is avoided unless necessary. CS: Not assessed, control not feasible.			
ROV survey before laydown of equipment on the seabed.	F: Yes. CS: Time/ cost associated with operating ROV survey and review of data.	ROV conducting a survey prior to placing equipment on the seabed could identify any potential cultural heritage or prospective areas not identified during the archaeological review.	Recommendations from the desktop cultural heritage survey will be reviewed to determine the value of further controls (e.g. Additional surveys or avoidance).	No
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with benthic habitat disturbance from infrastructure removal, preparation activities, ROV operations and infrastructure left in situ. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact assessment has determined that, given the adopted controls, seabed disturbance may result in slight, short-term impacts (<1 year) on species, habitat (but not effecting ecosystem function), physical or biological attributes. Further opportunities to reduce the impact have been investigated above. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 2</b> Seabed disturbance to be limited to planned activities and impacts described as part of the Petroleum Activities Program and will not occur outside the Operational Area	<b>C 1.9</b> Refer Section 6.7.1.	<b>PS 1.9.1</b> Refer Section 6.7.1.	<b>MC 1.9.1</b> Refer Section 6.7.1.
	<b>C 2.1</b> An ROV as left survey is undertaken at the end of activity, to confirm all temporary equipment has been removed.	<b>PS 2.1.1</b> Temporary equipment is removed.	<b>MC 2.1.1</b> As left survey confirms temporary equipment is removed.
	<b>C 2.2</b> In the event that the well infrastructure cannot be removed, remaining infrastructure will comply with the <i>Environmental Protection (Sea Dumping) Act 1981</i> (to the extent that Act is applicable).	<b>PS 2.2.1</b> Woodside continues to engage with DCCEEW regarding the application of the <i>Environmental Protection (Sea Dumping) Act 1981</i> and to comply with requirements under the Act (to the extent that Act is applicable).	<b>MC 2.2.1</b> Records demonstrate DCCEEW continues to be engaged on the application of the <i>Environmental Protection (Sea Dumping) Act 1981</i> relevant to the petroleum activity and demonstrate Woodside's compliance with the Act (to the extent that Act is applicable).
<b>EPO 3</b> No adverse impact to unexpected finds of Underwater Cultural Heritage <sup>17</sup> without a permit <sup>18</sup> .	<b>C 2.3</b> Unexpected finds of potential Underwater Cultural Heritage sites/features, including Traditional Custodian UCH are managed in accordance with an Unexpected Finds Procedure set out in Section 7.2.4.	<b>PS 2.3.1</b> In the event that an underwater cultural heritage site or feature is identified implement the Unexpected Finds Procedure set out in Section 7.2.4.	<b>MC 2.3.1</b> No non-compliance with the Unexpected Finds Procedure.
	<b>C 2.4</b> Report any potential underwater cultural heritage finds to relevant stakeholders and authorities in accordance with the Unexpected Finds Procedure, <i>Underwater Cultural Heritage Act 2018</i> and the <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> .	<b>PS 2.4.1</b> Report any finds of potential UCH in accordance with the Unexpected Finds Procedure (Section 7.2.4) including to the Australasian Underwater Cultural Heritage Database.	<b>MC 2.4.1</b> Records of potential UCH finds reported to relevant authorities and stakeholders.
	<b>C 2.5</b> Relevant vessel crew and ROV operators will be advised in an induction of the potential to encounter UCH and requirement to follow the Unexpected	<b>PS 2.5.1</b> Relevant vessel crew (including ROV operators) are made aware of the requirements of the Unexpected Finds	<b>MC 2.5.1</b> Records demonstrate vessel crew are made aware of potential to encounter UCH.

<sup>17</sup> Underwater Cultural Heritage is defined as any trace of human existence that has a cultural, historical or archaeological character and is located under water, in accordance with the UCH Act.

<sup>18</sup> Permit for Entry into a Protected Zone or to Impact Underwater Cultural Heritage would be acquired under the UCH Act.

EPOs, EPS and MC			
EPO	Controls	PS	MC
	Finds Procedure (Section 7.2.4).	Procedure through an induction.	
	<b>C 2.6</b> Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for survey activities and/or installation of equipment that will cause seabed disturbance (in areas not previously disturbed) at depths of <130 m to avoid or where not possible, minimise physical impacts to cultural heritage areas or prospective areas.	<b>PS 2.6.1</b> Existing survey data reviewed by a suitably qualified maritime archaeologist to inform areas for seabed disturbance activities.	<b>MC 2.6.1</b> Records demonstrate review of existing archaeological data completed prior to commencement of seabed disturbance activities.

### 6.7.3 Routine Acoustic Emissions: Generation of Noise from Infrastructure Removal Activities, Project Vessels, Mechanical Equipment and Helicopter Operations

Context													
Project Vessels – Section 3.6 Removal activities - Section 3.9			Habitats and Biological Communities – Section 4.5				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Generation of acoustic signals from project vessels during infrastructure removal activities					X		A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 4, 5
Generation of acoustic signals from cutting equipment					X		A	F					
Generation of atmospheric noise from helicopter transfers within Operational Area.					X		A	F	-	-			
Noise generated from as-found or as-left acoustic surveying					X		A	F	-	-			
Noise generated from LBL and USBL transponders					X		A	F	-	-			
Description of source of impact													
<p>The project vessels will generate noise both in the air and underwater, due to the operation of thrusters', engines, propeller cavitation, onboard machinery, etc. These noises will contribute to and have the potential to 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 1µPa (rms SPL) under windy conditions (McCauley, 2005).</p> <p>The sound levels and frequencies generated by vessels varies with the size of the vessel, speed, engine type and the activity being undertaken. Large vessels typically produce higher sound levels at lower frequencies than small vessels, although significant variation may be found among vessels within the same group. Sound levels tend to be greatest when engaging the throttle or thrusters, such as use of DP or when vessels are operating under load, compared with slow moving or idling vessels.</p> <p>The MCV and support vessels are expected to remain within the Operational Area for approximately three months in total (refer to Section 3.5).</p> <p><b>Project Vessels and Operation of Dynamic Positioning Systems</b></p> <p>Project vessels may maintain DP for varying durations during the Petroleum Activity, depending on the activity being undertaken. The main source of noise from a DP vessel relates to using DP thrusters while the vessel is maintaining position. McCauley (1998) measured underwater broadband noise equivalent to about 182 dB re 1 µPa at 1 m (SPL rms) from a support vessel holding station in the Timor Sea and Quijano and McPherson (2021) indicates source levels for the Skandi Hercules, a vessel similar to the one that will be used for the cut and recovery method (the</p>													

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Skandi Singapore), to be 181 re 1  $\mu$ Pa at 1 m (SPL rms). It is expected that similar noise levels will be generated by project vessels used for this Petroleum Activity.

### Positioning Equipment

For DP operations, two (2) seabed transponder arrays will be required for station keeping. Each array will consist of 4-5 medium frequency transponders spaced approximately 150 m from location. All transponders will be active for all operations and emit sound at a set frequency. Transponders typically emit pulses of medium frequency sound, generally within the range 21 to 31 kHz. The estimated SPL would be 180 to 206 dB re 1  $\mu$ Pa at 1 m (Jiménez-Arranz *et al.*, 2017). Transmissions are not continuous but comprise short (3–40 millisecond) 'chirps'.

### Subsea IMR Activities

Acoustic surveying may be required during as-found and as-left surveys to identify seabed features as well as any remaining infrastructure that requires removal. Acoustic surveys such as MBES and SSS generate a higher frequency acoustic signal, which attenuates more rapidly underwater compared to lower frequencies. MBES and SSS are very high-frequency and high-resolution systems, producing short micro-pulses of sound at frequencies in the tens or hundreds of kilohertz. The high-frequency pulses of sound produced by MBES are focused within multiple highly directional and narrow beams, which form a fan shape directed at the seabed (Salgado Kent *et al.*, 2016; Jiménez-Arranz *et al.*, 2017). The frequency is typically 150-300 kHz with source levels between 173 and 188 dB re 1  $\mu$ Pa2.s (SEL).

SSS also produces sound in a focussed swath directed at the seabed. The pulses of sound produced by these instruments are of such high frequency that they rapidly attenuate outside of the beam (75-900 kHz) (Zykov, 2013). Despite relatively high source levels (200 dB re 1  $\mu$ Pa2.s (SEL)), the high operating frequencies of most MBES and SSS places the dominant sound frequencies above the principal auditory range of most marine fauna species, although high-frequency cetaceans that may occur in the Operational Area (e.g. dolphins) have the capability to hear some of the sound energy at the lower end of the operating frequency ranges (US National Marine Fisheries Service [NMFS] 2018).

### Cutting of flowlines, EHUs and other subsea infrastructure

Additional noise from the cutting of flowlines, EHUs and other infrastructure is likely to be generated. The cut and recovery method will require the highest number of cuts and longest duration. The flowlines will be cut using ROV operated shears (or drop saw or diamond wire saw as contingent methods). Wellheads will be cut using AWJ or mechanical cutting tools below the mud line, or if not practicable, diamond cutting method.

The literature, both published and grey, available to quantify the underwater sound fields from cutting tools (e.g. diamond wire saws, or other cutting technologies), is very limited.

Pangerc *et al.* (2016) described the underwater sound measurement data during an underwater diamond wire cutting of a 32" conductor (10m above seabed in ~80m depth) and found that at lower frequencies, the operation was generally indistinguishable above the background noise, however, the sound that could be associated with the diamond wire cutting was primarily detectable above the background noise at the higher acoustic frequencies (above around 5 kHz). The background noise levels were substantially higher at lower frequencies, while it is likely that the spectra of the noise from the cutter peaks at higher frequencies, which has been approximated between 2.5 and 20 kHz. In another study, the US Navy measured underwater sound levels when the diamond saw was cutting caissons for replacing piles at an old fuel pier at Naval Base Point Loma and reported an average SPL for a single cutter at 136.1-141.4 dB re 1  $\mu$ Pa at 10 m, as reported in Fairweather Science (2018).

### Helicopter Transfers

Helicopter activities may occur in the Operational Area, including the landing and take-off of helicopters on the vessel helidecks. Sound emitted from helicopter operations is typically below 500 Hz (Richardson *et al.*, 1995). The peak received level diminishes with increasing helicopter altitude, but the duration of audibility often increases with increasing altitude. Richardson *et al.* (1995) reports that helicopter sound is audible in air for four minutes before it passed over underwater hydrophones, but detectable underwater for only 38 seconds at 3 m depth and 11 seconds at 18 m depth. Noise levels reported for a Bell 212 helicopter during fly-over was reported at 162 dB re 1  $\mu$ Pa and for Sikorsky-61 is 108 dB re 1  $\mu$ Pa at 305 m (Simmonds *et al.*, 2004).

## Impact assessment

### Environmental value(s) potentially impacted

#### Receptors

The Operational Area is located in waters between 75 m and 85 m deep. The fauna associated with this area will be predominantly pelagic species of fish, with seasonal potential presence of migratory species such as turtles, whale sharks and cetaceans. Noise interference is a key threat to a number of migratory and threatened cetaceans and marine turtles identified as occurring within the Operational Area.

The Operational Area overlaps BIAs for whale sharks (feeding) and wedge-tailed shearwaters (breeding). Whale sharks will be present between July and November and wedge-tailed shearwaters between August and April. Due to the lack of nesting habitat for wedge-tailed shearwaters in proximity to the Operational Area, only a low density is

expected even during peak nesting periods. Foraging adult seabirds may occur within the Operational Area. During the breeding period, foraging adult wedge-tailed shearwaters were observed travelling up to around 1,000 km from the breeding colony (Cannell *et al.*, 2019). Although the breeding and foraging BIA overlapping the Operational Area is defined as the area within around 70 km to 80 km from the Montebello Islands, wedge-tailed shearwaters on the NWS have been observed foraging beyond the breeding and foraging BIA. Based on the large area where foraging is known to occur, the Operational Area does not represent a significant portion of the known foraging area for the wedge-tailed shearwaters.

Humpback whale and pygmy blue whale migration BIAs are located 33km south and 50km north, respectively of the Operational Area, and therefore these species may occasionally transit the Operational Area. Other cetaceans such as sperm whales, and marine turtle species may also be present within the Operational Area seasonally; however, no BIAs or other important areas for these species overlap the Operational Area.

### Potential Impacts of Noise

Elevated underwater noise can affect marine fauna, including cetaceans, fish, turtles, sharks and rays, in three main ways (Richardson *et al.*, 1995; Simmonds *et al.*, 2004):

- by causing direct physical effects on hearing or other organs. Hearing loss may be temporary (temporary threshold shift (TTS) referred to as auditory fatigue), or permanent (permanent threshold shift (PTS) (auditory injury)
- 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 (e.g. BIAs). The occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation.

### Sound Propagation Calculations

Increasing the distance from the noise source usually results in the level of noise reducing, due primarily to the spreading of the sound energy with distance. The way that the noise spreads (geometrical divergence) will depend upon several factors such as water column depth, pressure, temperature gradients, and salinity, as well as surface and bottom conditions.

### Cetacean Thresholds

The thresholds for impulsive and non-impulsive sources of noise that could result in a response for cetaceans are outlined in Table 6-3. These thresholds have been adopted by the United States National Oceanic and Atmospheric Administration (NOAA), including updated thresholds for auditory injury, which includes but is not limited to PTS, and TTS adopted in October 2024 (National Marine Fisheries Service [NMFS], 2024). Thresholds for potential hearing impairment, in terms of PTS or TTS are presented as dual metric criteria, the peak pressure (PK) from a single impulse or the sound exposure level (SEL) accumulated from multiple impulses over a period of 24 hours (SEL24h). The SEL24h thresholds are frequency weighted according to the auditory weighting categories of different types of cetaceans, including low frequency cetaceans (large baleen whales such as humpback and pygmy blue whales) and high-frequency cetaceans (sperm whale, all beaked whales and most dolphins) (Southall *et al.* 2019). The PK thresholds for a single impulse are not frequency weighted.

**Table 6-3: PTS and TTS onset thresholds**

Hearing group	Auditory Injury (including PTS) onset thresholds (received level)		TTS onset thresholds (received level)		Behavioural response	
	Impulsive	Non-impulsive	Impulsive	Non-impulsive	Impulsive	Non-impulsive
<b>Low-frequency cetaceans</b>	$L_{pk}$ , flat: 222 dB $L_E$ , LF, 24h: 183 dB	$L_E$ , LF, 24h: 197 dB	$L_{pk}$ , flat: 216 dB $L_E$ , LF, 24h: 168 dB	$L_E$ , LF, 24h: 177 dB	$L_p$ 160 dB	$L_p$ 120 dB
<b>High-frequency cetaceans</b>	$L_{pk}$ , flat: 230 dB $L_E$ , HF, 24h: 193 dB	$L_E$ , HF, 24h: 201 dB	$L_{pk}$ , flat: 224 dB $L_E$ , HF, 24h: 178 dB	$L_E$ , HF, 24h: 181 dB	$L_p$ 160 dB	$L_p$ 120 dB

Source: PTS & TTS - NMFS (2024); Behavioural response - NOAA (2019). All decibels referenced to 1 micro Pascal (re: 1µPa). All thresholds based off root mean square (rms) levels.

### Marine Turtles

The Recovery Plan for Marine Turtles (Commonwealth of Australia, 2017) notes there is limited information available on the impact of noise on marine turtles and that the impact of noise on turtle stocks may vary depending on whether

exposure is short (acute) or long-term (chronic). Turtles have been shown to respond to low frequency sound, with indications that they have the highest hearing sensitivity in the frequency range 100–700 Hz (Bartol and Musick, 2003). Accomando *et al.* (2024) presented revised thresholds for AINJ (PTS<sup>19</sup>) and TTS onset in marine turtles from continuous (non-impulsive) noise, considering frequency weighted SEL (Table 6-4). No numerical thresholds have been developed for onset of behavioural responses in marine turtles from continuous sources (e.g. vessel noise).

**Table 6-4: AINJ and TTS onset thresholds for non-impulsive noise on turtles**

AINJ onset thresholds (received level)	TTS onset thresholds (received level)
Weighted SEL <sub>24h</sub> ( $L_{E,24h}$ ; dB re 1 $\mu\text{Pa}^2\cdot\text{s}$ )	
198	178

Source: Accomando *et al.* (2024).

#### Fish

In 2006, the Working Group on the Effects of Sound on Fish and Turtles was formed to continue developing noise exposure criteria for fish and turtles, work begun by a NOAA panel two years earlier. The Working Group developed guidelines with specific thresholds for different levels of effects for marine faunal groups (Popper *et al.* 2014).

Table 6-5 lists the relevant effects guidelines from Popper *et al.* (2014) for shipping and continuous noise. Some evidence suggests that fish sensitive to acoustic pressure show a recoverable loss in hearing sensitivity, or injury when exposed to high levels of noise (Scholik and Yan 2002, Amoser and Ladich 2003, Smith *et al.* 2006); this is reflected in the SPL thresholds for fish with a swim bladder involved in hearing.

**Table 6-5: Guidelines for vessel noise exposure for fish and turtles, adapted from Popper *et al.* (2014).**

Type of animal	Mortality and potential mortal injury	Impairment			Behaviour
		Recoverable injury	TTS	Masking	
Fish: No swim bladder (particle motion detection)	(N) Low (I) Low (F) Low	(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 (particle motion detection)	(N) Low (I) Low (F) Low	(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 (primarily pressure detection)	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N – tens of metres from source), intermediate (I – hundreds of metres from source), and far (F – thousands of metres from source).

#### Noise Modelling

In the event that the cut and recover method is used to recover the flowline, project vessels may be active in the Operational Area for up to six months (compared to two months if the reverse reel lay or reverse S-lay methods are used). This recovery option would therefore have the longest duration of noise generated and increased likelihood of noise impacts on sensitive marine fauna that may occur within the impact area.

<sup>19</sup> Auditory injury (AINJ) was previously referred to as permanent threshold shift (PTS). The new terminology acknowledges that auditory injury may occur without PTS.

Quijano and McPherson (2021) modelled and characterised a vessel using DP and diamond saw cutting sound fields for another project located on the North West Shelf at 156.2 m depth with similar geological profiles to those found in the Operational Area. The vessel assessed (Skandi Hercules: 12,900 kW installed thruster power) also had similar characteristics to the vessel that would likely be used for the cut and recovery method and had similar operational requirements.

Based on the similarities in the environment and vessel modelled in Quijano and McPherson (2021) and those proposed in this EP, the results in Quijano and McPherson (2021) have been used to assess the potential noise impacts from the Petroleum Activity for the cut and recover method.

As the modelling study by Quijano and McPherson (2021) preceded the recent marine mammal acoustic threshold updates outlined in NMFS (2024), the modelling was based on Southall *et al.* (2019) PTS and TTS thresholds and frequency-weighting functions. NMFS (2024) adopted higher SEL PTS and TTS thresholds for both impulsive and non-impulsive noises for high frequency cetaceans and higher peak SPL thresholds for impulsive noise for low frequency cetaceans. However, SEL PTS and TTS thresholds for low frequency cetaceans were 2 dB lower than previously adopted non-impulsive noise thresholds such as those from Southall *et al.* (2019) (NMFS 2024). Quijano and McPherson's (2021) modelled distances to threshold limits for HF cetaceans are therefore expected to be conservative compared to the updated recommended thresholds in NMFS (2024), while those for LF cetaceans are expected to be slight underestimates but sufficient for risk assessment purposes.

#### Cut and Recover Vessel and Subsea Cutting Noise Impacts

Source levels for noise generated by the project vessels on DP during the cut and recover method is expected to be in the range of 181-184 dB re 1  $\mu$ Pa at 1 m. The majority of the acoustic energy from the vessel is emitted within the 250 Hz decade band while the energy corresponding to the cutting operation peaks at the 10 kHz band, with a broadband ESL 10 dB lower than that of the vessel.

Table 6-6 summarises the largest radial distances to thresholds for criteria corresponding to behavioural response, impairment (TTS) and injury (PTS) in low- and high-frequency cetaceans, turtles, and fish. The largest distance is 1.75 km, corresponding to the threshold for behavioural response to continuous noise in marine mammals.

The Quijano and McPherson (2021) modelling showed the sound field to be dominated by the vessel on DP. At close range (<0.05 km from the modelled site) the addition of the diamond wire cutter does not change the distance to SPL thresholds, compared to the scenario with the vessel alone. At longer ranges the impact of the wire cutter remains minimal, for instance it increases the Rmax range to the 120 dB re 1  $\mu$ Pa threshold from 1.71 km to 1.75 km.

**Table 6-6: Summary of the largest distances to acoustic thresholds for various fauna groups**

Source	Criteria	Group	Threshold	R <sub>max</sub> (km)
Southall <i>et al.</i> (2019) <sup>20</sup>	PTS	LF-cetaceans	199 dB re 1 $\mu$ Pa <sup>2</sup> ·s (Weighted SEL <sub>24h</sub> )	0.05
	TTS		179 dB re 1 $\mu$ Pa <sup>2</sup> ·s (Weighted SEL <sub>24h</sub> )	0.51
Finneran <i>et al.</i> (2017) <sup>21</sup>	PTS	Turtles	220 dB re 1 $\mu$ Pa <sup>2</sup> ·s (Weighted SEL <sub>24h</sub> )	<0.02
	TTS		200 dB re 1 $\mu$ Pa <sup>2</sup> ·s (Weighted SEL <sub>24h</sub> )	0.05
NOAA (2019)	Behaviour	LF and HF-cetaceans	120 dB re 1 $\mu$ Pa (SPL)	1.75
Popper <i>et al.</i> (2014)	TTS	Fish	158 dB re 1 $\mu$ Pa (SPL)	0.02

Source: Based on modelled distances in Quijano and McPherson (2019).

Regarding distances to PTS and TTS, note that SEL<sub>24h</sub> is a cumulative metric that reflects the dosimetric effect of noise levels within 24 h based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. However, this is an unlikely worst-case scenario. More realistically, marine mammals, fish, and sea turtles would not remain in the same location for 24 h, but rather a shorter period, depending upon their behaviour and the source's proximity and movements. Therefore, a reported radius for SEL<sub>24h</sub> criteria does not mean that marine fauna travelling within this radius of the source will be impaired, but rather that an animal could be exposed to the sound level associated with impairment (either PTS or TTS) if it remained in that location for 24 h.

<sup>20</sup> PTS and TTS thresholds for LF cetaceans from Southall *et al.* (2019) are 2 dB higher than updated thresholds from NMFS (2024), therefore distances are expected to be slight underestimates compared to current thresholds.

<sup>21</sup> AINJ (PTS) and TTS thresholds for sea turtles from Finneran *et al.* (2017) are 22 dB higher than updated thresholds from Accomando *et al.* (2024), therefore distances are expected to be slight underestimates compared to current thresholds.



Considering the overlap or proximity of the BIAs to the Operational Area, it is likely there may be increased numbers of individuals of whale sharks during migratory periods. Currently, there are no thresholds relevant to whale sharks. It is expected that the potential effects of noise on whale sharks will be the same as for other pelagic fish species without fish bladders, resulting in minor and temporary behavioural change such as avoidance. Impacts to whale sharks from project vessels are expected to be negligible or of no lasting effect.

Cetaceans may be seasonally present in the Operational Area but expected to be limited to individuals infrequently transiting through the area. Because the Operational Area is approximately 50 km from the pygmy blue whale migration BIA and 35 km from the humpback whale migration BIA, no impacts from project vessel noise or cutting operations are predicted to occur on individuals using these areas. In summary, potential impacts to pygmy blue whales, humpback whales and other cetaceans from predicted noise levels are expected to be limited to behavioural impacts within a localised area around vessels with no lasting effect.

Other fauna associated with the Operational Area will be predominantly pelagic species of fish, with mobile species such as dolphins and rays transiting through the Operational Area; these species may be similarly affected by noise from project vessels.

#### **Positioning Equipment Noise**

Transponders used for positioning have the potential to cause some temporary behavioural disturbance to marine fauna; however, noise levels will be well below injury thresholds. Based on empirical spreading loss estimates measured by Warner and McCrodan (2011), received levels from ultra-short baseline transponders are expected to exceed the cetacean behavioural response threshold for impulsive sources out to about 42 m. Given the short-duration chirps and the mid frequencies used by positioning equipment, the acoustic noise from transponders is unlikely to have any substantial effect on the behavioural patterns of marine fauna. Therefore, potential impacts from transponder noise are likely to be restricted to temporary and localised avoidance behaviour of individuals transiting through the Operational Area and therefore are considered localised with no lasting effect.

#### **Subsea IMR Activities**

The very high-frequency micro-pulses of sound produced by MBES and SSS rapidly attenuate outside of the beam (MacGillivray *et al.*, 2013; Zykov, 2013). The high operating frequencies of these instruments also places the majority of sound frequencies above the auditory range of most marine fauna species. Dolphins and other high-frequency cetaceans, which have peak hearing sensitivity up to 110 kHz, with potential for some limited hearing ability up to approximately 160 kHz (NMFS 2024), may be able to detect a small amount of the sound energy from some MBES and SSS instruments in the lower operating frequency ranges (MacGillivray *et al.*, 2013; Zykov, 2013). Modelling of the propagation of the high frequency sound from MBES and SSS has been undertaken by Zykov (2013) and MacGillivray *et al.* (2013). The modelling results indicate that the sound emissions outside of the main beams are below the threshold levels for potential injury, PTS or TTS. Sound levels that may result in behavioural effects are likely limited to within tens of metres, but potentially up to a few hundreds of metres from the sound source for high-frequency cetaceans such as dolphins (Zykov, 2013; MacGillivray *et al.*, 2013). Subsea IMR activities using this technology or similar are therefore expected to result in temporary behavioural effects to marine mammals within tens or hundreds of metres from the survey activities. Such localised effects are smaller than those expected from the vessels and are not expected to be biologically significant.

Behavioural response impacts on fish and turtles may also occur including:

1. Fish: Potential masking and behavioural disturbance at near and intermediate range; likelihood of PTS or TTS is considered not to be credible given fish would move away from the source and noise sources are all higher frequency (75 - 900 kHz) and therefore outside the range of fish hearing (2-4 kHz). Site attached fish (e.g. some species of demersal fish) are not expected to be exposed to underwater noise above impact thresholds given water depths in the area where these fish may be more prevalent.
2. Marine turtles: Likelihood of potential masking and behavioural disturbance or PTS or TTS is considered not to be credible given the source frequency of proposed equipment (75 - 900 kHz) is well outside the known hearing frequency range of turtles (0.1 - 0.7 kHz).

#### **Flowline, EHU and associated infrastructure deburial**

Mass flow excavation is a form of controlled underwater sediment relocation where sediment is disburied by jetting and may be required for deburial of flowlines, EHUs and associated infrastructure. Sediment disbursement is a contributor to the generation of underwater noise where the amplitude and frequency is dependent on the method utilised. Alterations to the underwater soundscape can have adverse impacts on marine organisms susceptible to changes in underwater noise levels and/or particular frequencies or amplitudes.

Xodus (2017) determined that a mass flow excavator produced broadband sound with a source level of up to 162 SPL dB re 1 µPa @ 1 m. Sounds produced during MFE activities are therefore expected to result in localised impacts on marine fauna limited to behavioural effects with no lasting effects or detectable impacts at the population level.

#### **Helicopter Noise Impacts**

Helicopter engines and rotor blades are recognised as a source of noise emissions, which may result in behavioural disturbance to marine fauna. 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  $\pm >13^\circ$  from vertical being almost entirely reflected (Richardson *et al.*, 1995). Given this, and the typical characteristics of helicopter flights within the Operational Area (duration, frequency, altitude and air speed), the opportunity for underwater noise levels that may result in behavioural disturbance are considered to be not credible. Note that helicopter noise during approach, landing and take-off is more likely to propagate through the sea surface due to the reduced air speed and lower altitude. However, helicopter noise during approach, landing and take-off will not substantially add to underwater noise generated by the facility hosting the helipad (e.g. thruster noise from project vessels etc).

Given the standard flight profile of a helicopter transfer, maintenance of a more than 500 m horizontal separation from cetaceans (as per the EPBC Regulations), and the predominantly seasonal presence of whales within the Operational Area, interactions between helicopters and cetaceans resulting in behavioural impacts are considered to be highly unlikely. In the highly unlikely event that cetaceans are disturbed by helicopters, responses are expected to consist of short-term behavioural responses, such as increased swimming speed or diving; the consequence of such disturbance is considered to have no lasting effect and not be significant.

While unlikely, turtles may be present in low numbers within the Operational Area, particularly during interesting periods, and may be exposed to helicopter noise when on the sea surface (e.g. when basking or breathing). Typical startle responses occur at relatively short ranges (tens of metres) (Hazel *et al.*, 2007) and, as such, startle responses during typical helicopter flight profiles are considered to be remote. In the event of a behavioural response to the presence of a helicopter, turtles are expected to exhibit diving behaviour, with no lasting effect.

The Operational Area may be occasionally visited by migratory and oceanic birds but does not contain any emergent land that could be used as roosting or nesting habitat. The closest emergent land is located approximately 94 km from the Operational Area (Legendre Island). One BIA, a breeding and foraging area for wedge-tailed shearwaters, overlaps the Operational Area (August to April). However, there are no nesting sites such as islands within or in proximity to the Operational Area. Given the expected low density of seabirds within the Operational Area due to a lack of roosting or nesting habitat, the relative infrequency of helicopter flights and lack of lasting effect of potential behavioural responses to helicopter noise, impacts would be unlikely, localised and temporary, resulting in no lasting effect.

### **Cultural values and heritage**

Through consultation and review of available literature (Section 4.9), Woodside understands that marine fauna that may be affected by noise emissions, such as marine mammals and turtles, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Traditional Custodian communities if they deplete hunting areas and threaten local food security (Delisle *et al.* 2018:251).

Whale species are the subject of Traditional Custodians' increase ceremonies/rituals which are performed to enhance or maintain populations. As these 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). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes result 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, potential impacts to marine fauna from the petroleum activity are predicted to be at an individual level and not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically 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. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

### **Cumulative impacts**

Additional vessels associated with SIMOPS within the Operational Area (refer to Section 3.5.1) will contribute noise into the marine environment; however, this is not expected to exceed levels already assessed above. The potential for received levels to exceed weighted SEL thresholds defined for PTS or TTS for individual marine mammals is considered very low due to their mobility and ability to avoid the sound sources. Potential impacts to individuals are confined to behavioural responses localised around vessels. A larger number of vessels may increase the area in

which elevated noise levels could lead to a behavioural response. However, given the minor behavioural responses expected and the localised area of potential impact, the presence of multiple vessels within the Operational Area does not increase the consequence rating of this impact.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>22</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
<p>EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures<sup>23</sup>:</p> <ul style="list-style-type: none"> <li>Project vessels will not travel faster than six knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale.</li> <li>Project 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).</li> <li>If the cetacean or turtle shows signs of being disturbed, project vessels will immediately withdraw from the caution zone at a constant speed of less than six knots.</li> <li>Project vessels will not travel faster than eight knots within 250 m of a whale shark and not allow the vessel to approach closer than 30 m of a whale shark.</li> </ul>	<p>F: Yes. CS: Minimal cost.</p>	<p>Implementation of these controls will not significantly reduce negligible impacts to marine fauna from underwater noise given outcomes of impact assessment.</p>	<p>Disproportionate. The cost/sacrifice outweighs the benefit gained. However, control has been adopted to minimise vessel collisions with marine fauna in Section 6.8.6.</p>	<p>Yes <b>C 3.1</b></p>
<b>Good practice</b>				
<p>The use of dedicated Marine Fauna Observers (MFOs) on project vessels for the duration</p>	<p>F: Yes. However, activity support vessel bridge crews already maintain a constant watch during</p>	<p>Given that support vessel bridge crews already maintain a constant watch during</p>	<p>Disproportionate – cost/sacrifice</p>	<p>No</p>

<sup>22</sup> Qualitative measure

<sup>23</sup> 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) <sup>22</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
of the Petroleum Activity to watch for whales and provide direction on and monitor compliance with Part 8 of the EPBC Act Regulations.	operations in compliance with the Woodside Marine – Charterers Instructions, on the requirements of vessel and whale interactions. In the event of a cetacean (or other sensitive fauna) in close proximity to project vessels, it is unlikely that DP (the most significant source of underwater noise expected during the Petroleum Activity) will be deactivated given it is a safety critical requirement for project vessels to hold station. As such, an MFO implementing management/ shut down zones is considered to be ineffective. CS: Additional cost of MFOs.	operations, additional MFOs would not further reduce the likelihood or consequence of impact.	outweighs benefit to be gained.	
Undertake site-specific acoustic modelling.	F: Yes, it is feasible to undertake site-specific modelling; however, the generation of noise from these sources is already well understood and this noise cannot be eliminated due to operating requirements. CS: Additional cost of modelling.	Given that noise cannot be eliminated due to operating requirements, modelling would not further reduce the likelihood or consequence of impact, noting that no activities of significant noise generation (i.e. explosives) are proposed.	Not considered – control not feasible.	No
<b>Professional judgement – Eliminate</b>				
Elimination of noise from the project vessels , positioning transponders or helicopters.	F: No. The generation of noise from these sources cannot be eliminated due to operating requirements. Note: Operating vessels on DP may be a safety critical requirement. CS: Inability to conduct the Petroleum Activity. Loss of project.	Not considered – control not feasible.	Not considered – control not feasible.	No
<b>Professional judgement – Substitute</b>				
Avoid peak migration periods for migratory cetaceans.	F: Yes. Migration periods for cetaceans that may occur in the Operational	Avoiding migration periods would reduce the likelihood of impacts to cetaceans. However, given that the	Disproportionate – cost/sacrifice outweighs benefit to be gained.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>22</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	Area (pygmy blue whales) are well known. CS: Potentially significant. Woodside has not finalised the schedule for the Petroleum Activity, and some activities may be undertaken on an opportunistic basis and in succession to one another while a vessel is available. Precluding operations during cetacean migration periods may impose a considerable cost and operational burden, while resulting in little environmental benefit.	predicted impacts from noise sources associated with the Petroleum Activity are considered to be localised with no lasting effect, the overall benefit is minimal.		
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<p><b>ALARP statement:</b></p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with project vessels, acoustic survey activities, flowline, EHU and associated infrastructure cutting and helicopter operations noise emissions to be ALARP in their current risk state. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.</p>				

Demonstration of acceptability
<p><b>Acceptability statement:</b></p> <p>The impact assessment has determined that, given the adopted controls, routine acoustic emissions may result in negligible, localised impacts (&lt;1 month) on species, habitat (but not affecting ecosystem function), physical or biological attributes. Further opportunities to reduce the impact have been investigated above. The impacts are consistent with good oil-field practice/industry best practice.</p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.</p>

EPOs, EPS and MC			
EPO	Controls	PS	MC
<p><b>EPO 4</b> No injury of, or mortality to, EPBC Act 1999 and WA Biodiversity Conservation Act 2016 listed marine fauna as a result of noise generated by the Petroleum Activities Program.</p> <p><b>EPO 5</b> Ensure biologically important behaviour can continue for marine turtles from during nesting/breeding (inc. interesting periods for turtles) in biologically important areas.</p>	<p><b>CS 3.1</b> EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures<sup>24</sup>:</p> <ul style="list-style-type: none"> <li>Project vessels will not travel greater than six knots within 300 m of a cetacean or turtle (caution zone) and not deliberately approach closer than 100 m from a whale.</li> <li>Project vessels will not deliberately approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding).</li> <li>If the cetacean or turtle shows signs of being disturbed, project vessels will immediately withdraw from the caution zone at a constant speed of less than six knots.</li> <li>Project vessels will not travel greater than eight knots within 250 m of a whale shark and not allow the vessel to deliberately approach closer than 30 m of a whale shark.</li> </ul>	<p><b>PS 3.1.1</b> Compliance with EPBC Regulations 2000 – Part 8 Division 8.1 (Regulation 8.05 and 8.06) Interacting with cetaceans to minimise the potential for vessel strike and application of these regulations to whale sharks and marine turtles.</p>	<p><b>MC 3.1.1</b> Records demonstrate no breaches with EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans and application of these regulations to whale sharks and marine turtles.</p>
		<p><b>PS 3.1.2</b> All vessel strike incidents with cetaceans, whale sharks and marine turtles reported in the National Ship Strike Database (as outlined in the Conservation Management Plan for the Blue Whale –A Recovery Plan under the EPBC Act 1999, CoA, 2015).</p>	<p><b>MC 3.1.2</b> Records demonstrate reporting cetacean, whale shark and marine turtle ship strike incidents to the National Ship Strike Database.</p>

<sup>24</sup> 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.

#### 6.7.4 Routine Light Emissions: External Lighting on Project Vessels

Context													
Project Vessels – Section 3.6			Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Socio-Economic Environment – Section 4.10				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
External light emissions onboard project vessels				X	X	X	A	F	-	-	GP PJ	Broadly Acceptable	EPO 6, 7
Description of source of impact													
<p>Routine light emissions include artificial light sources that may alter the ambient light conditions in an environment. The project vessels will routinely use external lighting to navigate and conduct safe operations at night throughout the Petroleum Activity. External artificial light emissions from the project vessels are typically managed to maintain safe working conditions for crew members. Vessel lighting is also required to communicate the vessel's direction and presence to other marine users (i.e. navigation/warning lights). Lighting is required for safe operation of project vessels and cannot reasonably be eliminated.</p> <p>The vessels that may be required for the Petroleum Activity are outlined in Section 3.6. External lighting is located on decks, with most external lighting directed towards working areas such as the main decks. These areas are typically &lt;20 m above sea level. Indicative timing for activities are provided in Section 3.5 and may occur throughout the year. Lighting in any one area will be limited by the vessels moving along the flowline route to remove subsea infrastructure.</p> <p>Lighting from vessels may appear as a direct light source from an unshielded lamp with direct line of sight to the observer or through sky glow. Direct lighting falling upon a surface is referred to as light spill. Sky glow 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 sky glow may be visible from the source depends on the characteristics of vessel lighting (including height above sea level) and environmental conditions (e.g. cloud cover).</p> <p><b>Cumulative Light Sources</b></p> <p>There is the potential for cumulative light sources to occur from flaring, IMMR activities and vessel lighting from other petroleum activities in proximity to the Operational Area. If SIMOPS were to occur (as described in Section 3.5.1), up to four vessels may be in the field at the same time during the Petroleum Activity. The Angel Platform is also located within the Operational Area. Other infrastructure in the vicinity (see Table 4-22) includes the Woodside-owned Okha FPSO (6 km from the Operational Area) and North Rankin Complex (46 km from the Operational Area), as well as MODEC-owned Venture 11 FPSO (21 km from the Operational Area) which may result in slightly elevated ambient light levels.</p>													

Impact assessment
<b>Environmental value(s) potentially impacted</b>
<p>Receptors that have important habitat within a 20 km buffer of the Operational Area were considered for the impact assessment based on recommendations of the National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (NLPG). The 20 km threshold provides a precautionary limit based on observed effects of sky glow on marine turtle hatchlings, demonstrated to occur at 15–18 km, and fledgling seabirds grounded in response to artificial light 15 km away (Commonwealth of Australia, 2023).</p> <p>Light emissions can affect fauna in two main ways:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Orientation: Species such as 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.</li> </ul> <p>The marine fauna within the Operational Area are predominantly pelagic fish and zooplankton, with a low abundance of transient species such as marine turtles, whale sharks, whales and migratory seabirds. As described in Section 4.6, the Operational Area overlaps with BIAs for whale shark foraging and wedge-tailed shearwater breeding. There is no known critical habitat within 20 km of the Operational Area for EPBC listed species, nor does the Operational Area occur within 20 km of 'habitat critical for the survival of the species' for marine turtles or within 20 km of the nesting locations as identified in Table 6 of the marine turtle Recovery Plan (Commonwealth of Australia, 2017).</p> <p><b>Marine turtles</b></p> <p><b>Hatchlings</b></p> <p>Turtle hatchlings emerge from the nest and orient towards the sea. After entering the water, hatchlings use a combination of cues (wave direction and currents) to orient and travel into offshore waters. Impacts to the sea-finding behaviour of hatchlings are more common for light sources behind a beach, as lighting offshore will orient emerging hatchlings towards the sea. Artificial light at close distances can also impact hatchling dispersal once they are in the water. Light spill may 'entrap' hatchling swimming behaviour, reducing the success of their seaward dispersion and potentially increasing their exposure to predators via silhouetting (Salmon <i>et al.</i>, 1992).</p> <p>The Operational Area does not contain any known Habitat Critical for the Survival of the Species for any species of marine turtle, with the nearest location at Legendre Islands, about 94 km south-east of the Operational Area (for flatback turtles) and at Montebello Islands, located approximately 140 km south-west of the Operational Area (for green and hawksbill turtles).</p> <p>Since the Operational Area is located ~94 km from turtle nesting beaches at Legendre Island, the risk of significant numbers of dispersing hatchlings becoming attracted to direct light or sky glow from project vessels is not considered credible. At this distance the density of dispersing hatchlings is expected to be low and very few individuals will be at risk of attraction. For any isolated individuals potentially attracted to light spill from project vessels, following sunrise, any effect of these light sources on hatchlings will be eliminated allowing dispersal behaviour to resume.</p> <p>Any impacts to hatchling turtles from artificial light will be limited to possible localised behavioural impacts to isolated individual hatchlings offshore, with no lasting effect to the species.</p> <p><b>Adults</b></p> <p>Artificial lighting may affect the location that turtles emerge to the beach, the success of nest construction, whether nesting is abandoned, and even the seaward return of adults (Salmon <i>et al.</i>, 1995a, 1995b; Salmon &amp; Witherington, 1995). However, such lighting is typically from residential and industrial development overlapping the coastline, rather than offshore from nesting beaches. As the Operational Area does not overlap any marine turtle BIAs or Habitats Critical, it is unlikely to affect nesting adults. Given the water depth of the Operational Area (75 m to 85 m), turtles are unlikely to be foraging. It is acknowledged that marine turtles may be present transiting the Operational Area in low densities, however light cues aren't used to guide this behaviour.</p> <p><b>Seabirds</b></p> <p>Artificial lighting can attract and disorient seabird species resulting in species behavioural changes (e.g. circling light sources or disrupted foraging), injury or mortality near the light source as a result of collision (Longcore and Rich, 2004; Gaston <i>et al.</i>, 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, 2023). The Operational Area may be occasionally visited by seabirds and migratory shorebirds; however, there is no emergent land that could be used for roosting or nesting habitat in the Operational Area or within 20 km. The nearest emergent land that could be used for roosting or nesting habitat is Legendre Island (about 94 km from the Operational Area).</p> <p>One BIA for wedge-tailed shearwater breeding overlaps the Operational Area, with the breeding period occurring from August to April (Section 4.6.4). 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</p>



may be attracted to sources of light emissions to feed on fish drawn to the light; however, the species feeds predominantly during the day (Catry *et al.*, 2009; Whittow 1997). Artificial light can also impact behaviour and adult nest attendance, or confuse shearwater species, resulting in injury or mortality as a result of birds colliding with structures (Cianchetti-Benedetti *et al.*, 2018; Rodriguez *et al.*, 2017).

During the breeding period at the Muiron Islands off Exmouth Gulf (from around August to April, peak November), adult wedge-tailed shearwaters were observed taking a combination of short (1–4 days) or long (6–30 days) foraging trips from the Muiron Islands, travelling over large areas across the north west of Australia towards Indonesia (Cannell *et al.*, 2019). During the breeding period, foraging adult wedge-tailed shearwaters were observed travelling up to around 1,000 km from the breeding colony (Cannell *et al.*, 2019). Although the breeding and foraging BIA overlapping the Operational Area is defined as the area within around 70–80 km from the Montebello Islands, wedge-tailed shearwaters on the NWS have been observed foraging beyond the breeding and foraging BIA. Based on the large area where foraging is known to occur, the Operational Area does not represent a significant portion of the known foraging area for the wedge-tailed shearwaters. Therefore, impacts to wedge-tailed shearwaters are likely to be limited to short-term behavioural disturbance to isolated transient individuals. Artificial lighting from the Petroleum Activity is not expected to significantly impact foraging or displace seabird species from important foraging habitat.

Furthermore, as the Operational Area is more than 94 km from the nearest emergent land (Legendre Island), artificial light from the Petroleum Activities Program is not predicted to disrupt critical breeding behaviours within important nesting habitat. Impacts to wedge-tailed shearwaters are therefore considered to be limited to negligible behavioural disturbance to isolated transient individuals, not significant to the population's presence in important breeding and foraging habitat.

Migratory shorebirds may be present in or fly through the region between July and December, and again between March and April as they complete migrations between Australia and offshore locations (Commonwealth of Australia, 2015). The risk associated with collision from seabirds or migratory shorebirds attracted to artificial lighting is considered to be low, impacts are expected to be limited to localised behavioural disturbance to isolated individuals, with no displacement from important habitat.

### **Fish**

Lighting from ROV or project vessel activities during the Petroleum Activity may result in the localised aggregation of fish. These aggregations of fish due to light 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 unlikely that an artificial light source would lead to a significant increase in whale shark abundance in the vicinity of vessels. Similarly, any localised impacts to marine fish is not expected to impact any commercial fishers in the area.

### **Cultural values and heritage**

Through consultation and review of available literature (Section 4.9), Woodside understands that marine fauna that may be affected by light emissions, such as turtles and plankton, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and 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).

As described in the assessment of impacts to marine fauna (above) potential impacts 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. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

### **Cumulative Impacts**

There is potential for cumulative light impacts to occur where nearby infrastructure and associated activities results in slightly elevated ambient light levels. The cumulative impact is likely to be no lasting effect, due to the low light intensities of the vessel navigational lighting, facility lighting, short and intermittent nature of the impact, and is not anticipated to adversely affect any sensitive receptors.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>25</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
No additional controls identified.				
<b>Good practice</b>				
Minimise vessel lighting to that required for navigational and safety requirements, with the exception of emergency events	F: Yes. Lighting is typically appropriate for navigation and safety. CS: Minimal cost sacrifice – usual mode of operation.	Limiting light during the Petroleum Activity will reduce the potential for light attraction and vessel interaction with seabirds.	While the control does not result in reduction of impacts, it is good practice and not at significant cost.	Yes <b>C 4.1</b>
Implement the Offshore Seabird Management Plan, including: <ul style="list-style-type: none"> <li>Standardisation and maintenance of record keeping and reporting of seabird interactions.</li> <li>Procedures on seabird intervention, care and management</li> <li>Regulatory reporting requirements for seabirds (unintentional death of or injury to seabirds that constitute MNES)</li> <li>A scalable adaptive management process should negative light impacts to nocturnal seabirds be detected.</li> </ul>	F: Yes; however, a minimum level of lighting is required on vessels for safety. CS: Costs associated with implementation.	Implementation of the Offshore Seabird Management Plan, particularly the adaptive management framework, will ensure population level impacts to nocturnal seabirds will not occur.	Benefit outweighs cost, given the low costs in implementation and potential benefits in providing certainty that population level impacts to nocturnal seabirds will not occur.	Yes <b>C 4.2</b>
<b>Professional judgement – Eliminate</b>				
No use of external lighting during Petroleum Activity.	F: No. Light management will be consistent with that required to provide a safe working environment onboard project vessels. CS: Not considered – control not feasible.	Not considered – control not feasible	Not considered – control not feasible.	No
Restrict the Petroleum Activity to daylight hours, eliminating the	F: Yes. Restricting the Petroleum Activity to daylight hours is technically feasible,	Negligible reduction in consequence, given the	Grossly disproportionate. Implementation of the control requires	No

## 25 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>25</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
need for external work lights.	although not considered to be reasonably practicable. CS: Significant cost sacrifice. Limiting the Petroleum Activity to daylight hours would significantly increase the cost and duration of the Petroleum Activity, therefore resulting in extended impacts (such as interference with other marine users, noise, vessel discharges, or potential for unplanned risks.	duration and nature of the activity.	considerable cost sacrifice for minimal environmental benefit.	
Substitute external lighting with light sources designed to minimise impacts to seabirds (as per NLPG 2020 management actions): <ul style="list-style-type: none"> <li>• use flashing or intermittent lights instead of fixed beam</li> <li>• use motion sensors to turn lights on only when needed</li> <li>• use luminaires with spectral content appropriate for the species present</li> <li>• avoid high-intensity light of any colour.</li> </ul>	F: Yes. Replacement of external lighting with lighting appropriate for turtles is technically feasible, although is not considered to be practicable. CS: Significant cost sacrifice. The retrofitting of all external lighting on vessels would result in considerable cost and time expenditure. Considerable logistical effort to source sufficient inventory of the range of light types	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
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with routine light emissions from project vessels with impacts to species to be of short term with no lasting effects. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

### Demonstration of acceptability

#### Acceptability statement:

The impact assessment has determined that, given the adopted controls, routine light emissions from external lighting on project vessels may result in negligible, localised impacts (<1 month) on species, habitat (but not affecting ecosystem function), physical or biological attributes. Further opportunities to reduce the impacts have been investigated above. Regard has been given to relevant conservation advice and wildlife conservation plans during the assessment of potential impacts and the NLPG were taken into consideration during the impact evaluation.

No concerns or objections regarding light emissions from project vessels have been raised by relevant persons. However, marine species such as turtles and plankton have been identified, during consultation for this EP as well as for other Woodside activities, as a cultural value for Traditional Custodians. Given impacts will be temporary and minor behavioural disturbance to individuals and no impacts on a population level will occur, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

### EPOs, EPS and MC

EPO	Controls	PS	MC
<p><b>EPO 6</b> No impacts to marine fauna greater than that caused by minimum required light emissions for safe work / navigation.</p> <p><b>EPO 7</b> No displacement of marine turtles from habitat critical during nesting and interesting periods and marine turtles' biologically important behaviour can continue in biologically important areas.</p>	<p><b>C 4.1</b> Minimise vessel lighting to that required for navigational, safety and operational requirements, with the exception of emergency events.</p>	<p><b>EPS 4.1.1</b> Lighting will be limited to that required for safe work/navigation. This will include (where applicable) measures such as:</p> <ul style="list-style-type: none"> <li>Closing blinds on accommodation windows.</li> <li>Turning lights off in work areas not in use.</li> <li>Turning crane lights off (not associated with safety requirements).</li> <li>Ensuring external deck lighting is directed inwards to reduce light glow and light spill on the water;</li> <li>Vessel crews trained in light reduction measures when operating within 20km of islands.</li> </ul>	<p><b>MC 4.1.1</b> Inspection verifies no excessive light being used beyond that required for safe work/navigation. Training records for vessel crews in light reduction measures where applicable.</p>
	<p><b>C 4.2</b> Implement the Offshore Seabird Management Plan, including:</p> <ul style="list-style-type: none"> <li>Standardisation and maintenance of record keeping and reporting of seabird interactions.</li> <li>Procedures on seabird intervention, care and management.</li> </ul> <p>Regulatory reporting</p>	<p><b>PS 4.2.1</b> Implementation of the Seabird Management Plan to minimise potential for light attraction.</p>	<p><b>MC 4.2.1</b> Records demonstrate Seabird Management Plan implemented.</p>

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EPOs, EPS and MC			
EPO	Controls	PS	MC
	<p>requirements for seabirds (unintentional death of or injury to seabirds that constitute MNES).</p> <ul style="list-style-type: none"> <li>A scalable adaptive management process should negative light impacts to nocturnal seabirds be detected.</li> </ul>		

## 6.7.5 Routine Atmospheric and Greenhouse Gas Emissions associated with Fuel Use

Context													
Project Vessels – Section 3.6			Socio-Economic Environment – Section 4.10				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Exhaust emissions from internal combustion engines and incinerators on project vessels and helicopters			X				A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 8
Trace volume gas released subsea (<0.1m³)			X				A	F					
Description of source of impact													
<b>Internal combustion engines and incinerators</b> Atmospheric and GHG emissions will be generated by project vessels and helicopters from internal combustion engines (including all equipment and generators, which may be diesel powered and/or LNG powered) and incineration activities (including onboard incinerators) during the Petroleum Activity. Emissions associated with these operations will include SO <sub>2</sub> , NO <sub>x</sub> , ozone depleting substances, CO <sub>2</sub> , particulates and volatile organic compounds (VOCs).													
<b>Small volume gas releases subsea</b> During removal of flowlines, trace amounts of residual gas post flushing will be released to the environment. The total volume of gas at atmospheric pressure is estimated to be 19.2 m <sup>3</sup> (7.2 m <sup>3</sup> from AP2 and 12 m <sup>3</sup> from AP4). Release of the gas will be subject to the location of trapped pockets along flowlines. The resultant effect would be a release of a small volume of greenhouse gases to the atmosphere during flowline removal.													
Impact assessment													
<b>Environmental value(s) potentially impacted</b>													
Fuel and/or LNG combustion and incineration have the potential to result in localised, temporary reduction in ambient air quality, generation of dark smoke and contribution to greenhouse gas emissions. Given the short duration and exposed location of project vessels (which will lead to the rapid dispersion of the low volumes of atmospheric emissions), the potential impacts are expected to be localised and of no lasting effect.  Atmospheric emissions can cause direct impacts to fauna, if they are present in the immediate vicinity of significant releases. Birds, for example, have been shown to suffer respiratory distress and illness when subjected to extended duration exposure to air pollutants (Sanderfoot and Holloway, 2017). One BIA for wedge-tailed shearwater breeding overlaps the Operational Area, with the breeding period occurring from August to April (Section 4.6.4). However, given that there are no significant releases of atmospheric emissions, no extended exposure due to rapid dispersion, and low fauna numbers at the point of discharge, injury or mortality to fauna as a result of atmospheric discharges is not expected.  Release of small pockets of hydrocarbon gases trapped in flowlines during removal may result in a temporary gas plume and a localised contribution to greenhouse gas emissions. There is potential for human health effects for workers in the immediate vicinity of atmospheric emissions. However, the closest sensitive residential receptor is the town of Dampier, approximately 124 km south of the Operational Area. As such, any risks associated with off-site human health effects are negligible beyond the immediate zone of release and dispersion.													

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>26</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Marine Order 97 (Marine Pollution Prevention – Air Pollution), which details requirements for: <ul style="list-style-type: none"> <li>International Air Pollution Prevention (IAPP) Certificate, required by vessel class</li> <li>use of low sulphur fuel when available</li> <li>Ship Energy Efficiency Management Plan, where required by vessel class</li> <li>onboard incinerator to comply with Marine Order 97.</li> </ul>	F: Yes CS: Minimal cost	Legislative requirements to be followed may slightly reduce the likelihood of air pollution.	Control based on legislative requirements – must be adopted	Yes <b>C 5.1</b>
Reporting of GHG emissions as required by regulatory requirements.	F: Yes. CS: Minimal cost. Standard practice for Woodside activities.	Tracking and reporting of emissions gives visibility to performance and enables improvement opportunities to be identified. Reporting increases transparency and accountability which can also drive performance improvements.	Control based on legislative requirements – must be adopted.	Yes <b>C 5.2</b>
<b>Good practice</b>				
Vessel operations planned such that fuel consumption and therefore subsequent emissions are minimised. Examples may include such aspects as vessel speeds, cleaning of biofouling, preventative maintenance on equipment such as thrusters, or turning off equipment when not in use.	F: Yes CS: Schedule delays	Managing vessel operations including vessel speeds, use of project vessels, cleaning of biofouling, preventative maintenance and turning off equipment when not in use can reduce fuel usage and subsequent GHG / air emissions.	Potential benefit outweighs cost/sacrifice.	Yes <b>C 5.3</b>
Contracting strategy and evaluation for hire of support vessels includes consideration of	F: Yes. CS: Fuel cost over the contract is considered in	Minimise cost and emissions through eco-efficiency approach recognising cost of	Benefits outweigh cost/sacrifice.	Yes <b>C 5.4</b>

## 26 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>26</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
vessel emissions parameters and low carbon / alternative fuels.	evaluation of responses, allowing for competitive consideration of low carbon alternatives (batteries).	fuel and carbon emissions over the contract term.		
Angel subsea flowlines flushed in accordance with Section 3.4.15.8 of the Angel Operations EP prior to removal to reduce volume/concentration of hydrocarbons released to the environment during decommissioning.	F: Yes. CS: Minimal cost. Standard practice.	Flushing the flowlines prior to removal reduces the volumes/ concentration of hydrocarbons that may be released to the marine environment.  The subsea infrastructure tying the three Angel wells back to the Angel facility will be flushed and filled with treated seawater under the Angel Operations EP in Q2 2025. Decommissioning of the Angel subsea infrastructure in this EP is contingent on successful flushing of the three Angel rigid flowlines having been completed, in accordance with Section 3.4.15.8 of the Angel Operations EP	Benefits outweigh cost/sacrifice	Yes <b>C 5.5</b>
<b>Professional judgement – Eliminate</b>				
Do not combust fuel.	F: No. There are no suitable vessels that do not use internal combustion engines. CS: Not considered, control not feasible.	Not considered, control not feasible.	Not considered, control not feasible.	No
<b>Professional judgement – Substitute</b>				
Fuel types selected to reduce expected GHG emissions.	F: Yes CS: Monetary cost of fuel, logistics associated with fuel type supply (especially with regard to international vessels) and fuel inventory	Alternative fuel types such as Marine Gas Oil and Marine Diesel Oil (MGO & MDO) can reduce GHG emissions during use when compared to heavy or	Potential benefit outweighs cost/sacrifice.	Yes <b>C 5.6</b>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>26</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	management for international vessels which may be required to change fuel type.	intermediate fuel oils (HFO or IFO).		
<b>Professional judgement – Engineered Solution</b>				
Manage vessel speed to reduce fuel combustion.	F: Yes. CS: Standard practice.	Reducing fuel combustion reduces atmospheric emissions.	Benefits outweigh cost/sacrifice.	Yes <b>C 5.7</b>
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with routine atmospheric and GHG emissions. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact/risk assessment has determined that, given the adopted controls, routine atmospheric and GHG emissions from fuel combustion may result in negligible, localised impacts (<1 month) to habitat (but not affecting ecosystem function), physical or biological attributes. The adopted controls are considered consistent with legislation, codes and standards, and professional judgment and meet the requirements of Australian Marine Orders. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 8</b> Emissions to atmosphere associated with fuel combustion and incineration limited to those necessary to complete the Petroleum Activities Program.	<b>C 5.1</b> Marine Order 97 (Marine Pollution Prevention – Air Pollution) which details requirements for: <ul style="list-style-type: none"> <li>International Air Pollution Prevention (IAPP) Certificate, required by vessel class</li> <li>use of low sulphur fuel when available</li> <li>Ship Energy Efficiency Management Plan, where required by vessel class</li> <li>onboard incinerator to comply with Marine Order 97.</li> </ul>	<b>PS 5.1.1</b> Project vessels compliant with Marine Order 97 (marine pollution prevention – air pollution) to restrict emissions to those necessary to perform the activity. Vessel marine assurance process conducted prior to contracting vessels, to ensure suitability and compliance with vessel combustion certification/ Marine Order requirements.	<b>MC 5.1.1</b> Marine Assurance inspection records demonstrate compliance with Marine Order 97.

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EPOs, EPS and MC			
EPO	Controls	PS	MC
	<b>C 5.2</b> Reporting of GHG emissions as required by regulatory requirements.	<b>PS 5.2.1</b> GHG emission regulatory reporting undertaken as required.	<b>MC 5.2.1</b> Records demonstrate required regulatory GHG emission reported.
	<b>C 5.3</b> Vessel operations will be planned such that fuel consumption is minimised where practicable. Examples may include such aspects as vessel speeds, cleaning of biofouling, preventative maintenance on equipment such as thrusters, or turning off equipment when not in use.	<b>PS 5.3.1</b> Vessel operations planned, where practicable, to minimise fuel consumption and associated GHG/air emissions.	<b>MC 5.3.1</b> Plan/records show fuel use/emissions have been considered in vessel operations.
		<b>PS 5.3.2</b> Relevant vessel crew aware of requirement to consider GHG/air emissions in vessel operations.	<b>MC 5.3.2</b> Awareness training records include information on consideration of fuel use/GHG emissions for vessel operations.
	<b>C 5.4</b> Contracting strategy and evaluation for hire of support vessels includes consideration of vessel emissions parameters and low carbon / alternative fuels.	<b>PS 5.4.1</b> Evaluation of tenders of support vessels considers emissions parameters and low carbon / alternative fuels.	<b>MC 5.4.1</b> Records demonstrate that emissions were considered in tender evaluations.
	<b>C 5.5</b> Angel subsea infrastructure flushed in accordance with Section 3.4.15.8 of the Angel Operations EP prior to flowline removal to reduce volume/concentration of hydrocarbons released to the environment during decommissioning.	<b>PS 5.5.1</b> Flushing of Angel subsea infrastructure is completed prior to commencement of the Petroleum Activity.	<b>MC 5.5.1</b> Records demonstrate that flushing of Angel subsea infrastructure has been completed in accordance with MC 5.2.1 of Angel Operations EP.
	<b>C 5.6</b> Fuel types selected to reduce expected GHG emissions.	<b>PS 5.6.1</b> Project vessels will not use heavy fuel oil (HFO) or intermediate fuel oil (IFO)	<b>MC 5.6.1</b> Records show project vessels use alternative fuels to HFO / IFO
	<b>C 5.7</b> Manage vessel speed to reduce fuel consumption.	<b>PS 5.7.1</b> Vessel speed will be managed to reduce fuel consumption where practicable.	<b>MC 5.7.1</b> Records demonstrate speed of support vessels managed.

## 6.7.6 Routine and Non-routine Discharges to the Marine Environment from Project Vessels

Context													
Project Vessels – Section 3.6			Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
		X			X		A	F	-	-	LCS GP PJ	Broadly Acceptable	EPO 9
		X			X		A	F	-	-			
	X			X		A	F	-	-				
Description of source of impact													
<p>The project vessels routinely generate/discharge:</p> <ul style="list-style-type: none"><li>• Small volumes of treated sewage, putrescible wastes and grey water to the marine environment (impact assessment based on approximate discharge of 15 m<sup>3</sup> per vessel per day), using an average volume of 75 L/person/day and a maximum of 200 persons on board. However, it is noted that vessels such as support vessels will have considerably less persons on board.</li><li>• Routine/periodic discharge of relatively small volumes of bilge water. Bilge tanks receive fluids from many parts of the project vessels. Bilge water can contain water, oil, detergents, solvents, chemicals, particles and other liquids, solids or chemicals.</li><li>• Variable water discharge from vessel decks directly overboard or via deck drainage systems. Sources could include rainfall events and/or deck activities such as cleaning/wash-down of equipment/decks.</li><li>• Cooling water from machinery engines or mud cooling units and brine water produced during the desalination process of reverse osmosis to produce potable water onboard project vessels.</li></ul> <p>Environmental risks relating to the unplanned disposal/discharges from the project vessels are addressed in Section 6.8.4 and 6.8.5.</p>													
Impact assessment													
Environmental value(s) potentially impacted													
Routine discharges generated from the Petroleum Activity have the potential to cause temporary and localised reduction in water quality. The principal environmental impact associated with ocean disposal of sewage and other organic wastes (i.e. 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. Other contaminants of concern occurring in these discharges may include ammonia, *E. coli*, faecal coliform, volatile and semi-volatile organic compounds, phenol, hydrogen sulphide, metals, surfactants and phthalates.

Woodside conducted monitoring of sewage discharges at its Torosa-4 Appraisal Drilling campaign which demonstrated that a 10 m<sup>3</sup> sewage discharge reduced to about 1% of its original concentration within 50 m of the discharge location. In addition to this, monitoring at distances 50 m, 100 m and 200 m downstream of the platform and at five different water depths confirmed that discharges were rapidly diluted; no elevations in water quality monitoring parameters (e.g. total nitrogen, total phosphorous and selected metals) were recorded above background levels at any station (Woodside, 2011). Mixing and dispersion would be further facilitated in deep offshore waters, consistent with the location of the Operational Area, through regional wind and large-scale current patterns resulting in the rapid mixing of surface and near surface waters where sewage discharges may occur. Studies investigating the effects of nutrient enrichment from offshore sewage discharges indicate that the influence of nutrients in open marine areas is much less significant than that experienced in enclosed areas (McIntyre and Johnston, 1975).

Furthermore, open marine waters do not typically support areas of increased ecological sensitivity, due to the lack of nutrients in the upper water column and lack of light penetration at depth. Therefore, presence of other receptors such as fish, reptiles, birds and cetaceans in significant numbers, and in proximity to the Operational Area, is unlikely. Research also suggests that zooplankton composition and distribution are not affected in areas associated with sewage dumping grounds (McIntyre and Johnston, 1975). Plankton communities are expected to rapidly recover from any such short-term, localised impact, as they are known to have naturally high levels of mortality and a rapid replacement rate.

Additional discharges outlined, which may include other non-organic contaminants (e.g. bilge water, deck drainage and cooling water), will be rapidly diluted through the same mechanisms as above. They are expected to be intermittent and in very small quantities and concentrations as to not pose any significant risk to any relevant receptors.

Activities associated with the Petroleum Activity will occur between 2026 and 2027, however actual project activities are expected to take approximately three months in total, therefore project vessels will not be continuously in the Operational Area during this time. Vessels will also be moving (i.e. not in a single location for an extended period of time). Rather, these routine discharges are expected to be intermittent in nature for the duration of the Petroleum Activity. Therefore, cumulative impacts to water quality within the Operational Area is expected to be localised with no lasting effect.

It is possible that marine fauna transiting the localised area may come into contact with these discharges (e.g. marine turtles, whales, whale sharks, as they traverse the Operational Area, Section 4.6). However, given the localised extent of cumulative impacts from multiple vessel discharges within the Operational Area, significant impacts to marine fauna are not expected.

There is one KEF that overlaps with the Operational Area: Glomar Shoals (Section 4.7). Glomar Shoals is a submerged feature at depths of 33 to 77 metres (Falkner *et al.*, 2009). Given the water depths and open ocean environment, impacts to the values of this KEF is not expected. As such, no significant impacts from the planned discharges that are listed above 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.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>27</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Marine Order 95 – pollution prevention – garbage (as appropriate to vessel class), which requires putrescible waste and food scraps to pass through a macerator, so it is capable of passing through a screen with no opening wider than 25 mm.	F: Yes. CS: Minimal cost. Standard practice.	No reduction in likelihood or consequence would result.	Controls based on legislative requirements – must be adopted.	<b>Yes C 6.1</b>

## 27 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>27</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<p>Marine Order 96 – pollution prevention – sewage (as appropriate to vessel class), specifically:</p> <ul style="list-style-type: none"> <li>a sewage treatment plant approved by an issuing body that complies with Regulation 9 of Annex IV (of MARPOL) and other guidelines as required; or</li> <li>a sewage comminuting and disinfecting system approved by an issuing body, that complies with Regulation 9 of Annex IV; or</li> <li>a holding tank approved by an issuing body, that complies with Regulation 9 of Annex IV.</li> </ul>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>No reduction in likelihood or consequence would result.</p>	<p>Controls based on legislative requirements – must be adopted.</p>	<p>Yes <b>C 6.2</b></p>
<p>Marine Order 91 – oil (as relevant to vessel class) requirements, which include mandatory measures for the processing of oily water prior to discharge:</p> <ul style="list-style-type: none"> <li>Oil Record Book Valid International Oil Pollution Prevention (IOPP) Certificate.</li> <li>Vessel specific SOPEP.</li> </ul>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>No reduction in likelihood or consequence would result.</p>	<p>Controls based on legislative requirements – must be adopted.</p>	<p>Yes <b>C 6.3</b></p>
<b>Good practice</b>				
<p>Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints.</p>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>Environmental assessment of chemicals in discharges will reduce the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability. Planned</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes <b>C 6.4</b></p>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>27</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		discharges are required for the safe execution of activities and therefore no reduction in likelihood can occur.		
<b>Professional judgement – Eliminate</b>				
Storage, transport, disposal and onshore treatment of sewage, greywater, putrescible and bilge wastes.	F: Not feasible. Would present additional safety and hygiene hazards resulting from the storage, loading and transport of the waste material.  Distance of activity offshore also makes implementing this control not feasible.  CS: Not considered – control not feasible.	Not considered – control not feasible.	Not considered – control not feasible.	No
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with planned (routine and non-routine) discharges from the project vessels. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact/risk assessment has determined that, given the adopted controls of planned (routine and non-routine) discharges from the project vessels may result in negligible, localised impacts (<1 month) to habitat (but not affecting ecosystem function), physical or biological attributes. Further opportunities to reduce the impacts and risks have been investigated above. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 9</b> Vessel discharges shall meet requirements defined by Marine Orders and the Woodside chemical	<b>C 6.1</b> Marine Order 95 – marine pollution prevention—garbage (as appropriate to vessel class) which	<b>PS 6.1.1</b> Vessels compliant with Marine Order 95 –	<b>MC 6.1.1</b> Records demonstrate vessels are compliant with Marine Order 95 – Pollution prevention (as

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EPOs, EPS and MC			
EPO	Controls	PS	MC
assessment and approval process.	requires putrescible waste and food scraps to pass through a macerator, so it is capable of passing through a screen with no opening wider than 25 mm.	Pollution prevention – Garbage.	appropriate to vessel class).
	<b>C 6.2</b> Marine Order 96 - pollution prevention – sewage (as appropriate to vessel class) which include the following requirements: <ul style="list-style-type: none"> <li>a sewage treatment plant approved by an issuing body that complies with Regulation 9 of Annex IV (of MARPOL) and other guidelines as required; or</li> <li>a sewage comminuting and disinfecting system approved by an issuing body, that complies with Regulation 9 of Annex IV; or</li> <li>a holding tank approved by an issuing body, that complies with Regulation 9 of Annex IV.</li> </ul>	<b>PS 6.2.1</b> Vessels compliant with Marine Order 96 – Pollution prevention – Sewage (as appropriate to vessel class).	<b>MC 8.2.1</b> Records demonstrate vessels are compliant with Marine Order 96 – Pollution prevention – Sewage (as appropriate to vessel class).
	<b>C 6.3</b> Marine Order 91 – oil (as relevant to vessel class) requirements, which includes mandatory measures for the processing of oily water prior to discharge: <ul style="list-style-type: none"> <li>Oil Record Book Valid International Oil Pollution Prevention (IOPP) Certificate</li> <li>Vessel specific SOPEP.</li> </ul>	<b>PS 6.3.1</b> Discharge of machinery space bilge/oily water will meet oil content standard of <15 ppm without dilution.	<b>MC 6.3.1</b> Records demonstrate discharge specification met for vessels.
	<b>C 6.4</b> Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints.	<b>PS 6.4.1</b> Chemicals intended or likely to be discharged into the marine environment will be approved through the Woodside chemical assessment process (Section 7.2.1).	<b>MC 6.4.1</b> Records demonstrate chemical selection, assessment and approval process for required chemicals is followed.

## 6.7.7 Routine and Non-routine Discharges: Project Fluids and Subsea Discharges

Context													
Infrastructure removal activities – Section 3.9			Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5					Stakeholder consultation – Section 5					
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Discharge of operational fluids from the EHUs and associated infrastructure during removal activities		X		X	X		A	F	-	-	LC S GP PJ	Broadly Acceptable	EPO 10
Discharge of preservation fluids and contaminants from the flowlines and associated infrastructure during removal activities		X		X	X		A	E	-	-			
Discharge of plastic and metal swarf and concrete spall during flowline, EHU and other subsea infrastructure recovery		X					A	F	-	-			
Discharge of cleaning chemicals during marine growth removal activities.		X		X	X		A	F	-	-			
Description of source of impact													
<b>Operational fluids contained in the EHU</b> During removal activities operational fluids contained in the EHU will be discharged to the marine environment. The three EHUs contain a total of approximately 1.3 m³ MEG and 3.9 m³ MacDermid HW443 water based hydraulic fluid. Testing of contaminants is not relevant for the EHU given it does not receive hydrocarbons during production. As the EHU as-left condition is at ambient seabed pressure, during disconnection prior to recovery there will an initial release of fluids until equilibrium pressure is reached. Once equilibrium is achieved, the remaining fluids will be gradually released. The full inventory of the fluids will be discharged to the water column from the ends of the EHU while each section is being recovered and either spooled onto reels or cut into sections on the back deck of the offshore support vessel.													
<b>Preservation fluids and flowline contaminants</b> During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released to the environment. Fluid includes approximately 585 m³ of treated seawater contained in the Angel flowlines (with ends capped) post flushing will be discharged to the marine environment. The seawater will be treated with Roemex RX-5254 at 450 ppm, with a target residual oil-in-water content of less than 30 ppm and minor volumes of chemicals such as MEG, biocide and water-based hydraulic fluid. Pockets of trapped hydrocarbons (both liquid condensate and trace gas) are expected to remain within the flowlines post-flushing and will be released to the marine environment during removal activities. Equivalent surface volumes are anticipated to be as follows: <ul style="list-style-type: none"><li>Liquid condensate:</li></ul>													



- AP2 – 1 m<sup>3</sup> total, liquid condensate is confined to two pockets across a ~600m length of flowline, the remaining 1.5km of the flowline will be flushed to a target of less than 30ppm.
- AP3 - <0.1 m<sup>3</sup>
- AP4 - 1.6 m<sup>3</sup>, liquid condensate is confined to two pockets across a ~ 400m length of flowline, the remaining 2.3 km of the flowline will be flushed to a target of less than 30ppm.
- Gas (expanded volume at surface):
  - AP2 – 7.2 m<sup>3</sup>, gas is confined to two pockets across a ~600m length of flowline, the remaining 1.5km of the flowline will be flushed to a target of less than 30ppm.
  - AP3 - <0.1 m<sup>3</sup>
  - AP4 - 12 m<sup>3</sup> total, gas is confined to two pockets across a ~ 400m length of flowline, the remaining 2.3 km of the flowline will be flushed to a target of less than 30ppm.

As outlined in Section 3.7.2, there is potential for mercury to be present in liquid hydrocarbon pockets with a predicted maximum volume of 36 mg for AP2 and 60 mg for AP4.

Discharge of the fluids within the flowlines will occur gradually during recovery operations, with small amounts of liquid and gas expected to be released at each cut location (every 11-12 metres). As the flowline as-left condition is at ambient seabed pressure, during disconnection prior to recovery there will be an initial release of treated seawater until equilibrium pressure is reached. Once equilibrium is achieved, the remaining fluids will be gradually released. The full inventory of the preservation fluids will be discharged to the water column from the flowlines while sections are being recovered. Trace gas trapped within the rigid flowlines will be released subsea, as this gas travels through the water column it is expected to expand. Approximately 19.2 m<sup>3</sup> total of hydrocarbon gas is expected at surface conditions, which will be released from pockets over the full length of the flowlines progressively when they are cut on the seabed. Recovery methods will result in the release of the fluids to the marine environment.

Traces of scale containing mercury and NORM may be released during recovery if present in the flowlines. Sections of the flowline spools (at the well end) will be recovered during the flushing campaign for testing for contaminants including hydrocarbons, NORM and mercury, which will inform handling and disposal methods. During infrastructure removal, Woodside will also sample mercury within equipment exposed to production fluids to inform the classification and subsequent management of recovered materials.

#### **Plastic and metal swarf/ concrete spall**

Swarf (also known as chips, turnings, filings, or shavings) are pieces of metal and plastic generated by cutting activities during the removal of flowlines, EHUs and other subsea infrastructure.

Primary materials for each piece of subsea infrastructure are described in Table 3-9. Flowlines consist of 14.3 mm grade 415 carbon steel with a 3 mm 316L CRA inner liner that is encased in a 6 mm thick 3 layer polypropylene (3LPP) coating and 40 mm thick concrete weight coating. Field joint coatings consist of 40 mm polyurethane (PU) foam infill and 2.5 mm heat shrink sleeve, occurring every 12 m along each flowline. Whilst the flowline will not be cut at the field joints, some of the field joints sleeves have detached and may be released to the sea during recovery as they are not secured. Should all of the detached sleeves (45) be released the volume of HSS is 0.1 m<sup>3</sup> and 1 m<sup>3</sup> of polyurethane foam.

During the cut and recover method, a cutting tool (either large shearers or a chop saw or diamond wire saw) will be used to cut the flowline into 12 m sections on the seabed. The sections will then be recovered to a vessel. Chop saw or diamond wire saw will be used where shears are not practicable or for wellhead removal. The hydraulic shear cutting tool will not generate swarf but may result in spalling of the concrete weight coating due to flowline deformation during cutting. Woodside has a high confidence in this method which has been used in recent subsea removal campaigns.

A chop saw or diamond wire saw will generate steel, concrete and polyethylene plastic swarf, but will not result in spalling of concrete as the flowline won't be deformed by these saws. Swarf is expected to be approximately 5 mm or less and hence the volume would be correspondingly small. Contingency cutting methods, if used, would not realistically be used to make all the cuts in the pipeline and are therefore discharge volumes cannot reasonably be predicted.

As such, estimates of discharges from a single cut using the contingency methods are provided below:

- approximately 240 g concrete swarf
- approximately 50 g of plastic swarf
- approximately 190 g of steel swarf

Traces of scale containing mercury and NORM may be released in swarf during recovery of the flowlines. Further information on mercury and NORM in subsea infrastructure is provided in 3.7.2

Fragments of concrete debris exceeding 30 cm x 30 cm will be recovered.

Flowline cutting will occur (unless otherwise impractical) between field joints to minimise the fragmenting and release of joint coatings. Release of larger fragments of flowline coatings during recovery are not expected, however the risk of unplanned discharges from release of flowline coating during recovery is assessed in Section 6.8.5.

### **Marine growth removal**

If required, marine growth may be cleaned from the Angel subsea infrastructure on the seabed to facilitate removal by high-pressure water jetting using and ROV. Sulphamic acid may also be used to dissolve calcium deposits.

Marine growth removal may also occur by high pressure water jetting onboard the vessel once the infrastructure has been recovered, resulting in cleaning fluids and marine growth being discharged to sea. Cleaning chemicals (such as citric acid) may also be used during the storage of the recovered flowline and other infrastructure on board the vessel to manage odour from decaying marine growth that may not have been able to be completely removed during the physical cleaning process (Section 3.9). Some residual spray from the chemical application may enter the vessel drainage system and be discharged to sea.

## **Impact assessment**

### **Environmental value(s) potentially impacted**

There is potential for localised water column effects as a result of planned routine and non-routine project fluids and subsea discharges during decommissioning. However, planned discharges of hydrocarbons and chemicals are minor and are minimised as far as practicable via flushing of the lines prior to the commencement of decommissioning activities.

Pelagic and benthic habitats in the Operational Area are considered to be of low sensitivity (no known significant benthic habitat or infauna habitat). Although the Glomar Shoals KEF overlaps with the Operational Area, the values and sensitivities of this KEF primarily occur outside of the Operational Area, with the benthic communities associated with the Glomar Shoals feature 7.25 km (from the 50 m depth contour) from the nearest point of the Operational Area.

There is potential for protected species to occur within the Operational Area, in particular there is overlap with:

- wedge-tailed shearwaters breeding area and foraging BIA
- whale shark foraging BIA

On the basis that the activities are of short duration, the majority of the discharges are localised and in deep water. Given the transient nature of species within the Operational Area, no impacts are expected to these species.

### **EHU and Flowline Discharges**

Discharges of treated water and chemicals from the EHU and flowlines will occur gradually during recovery operations over a period of several months.

Water-based hydraulic fluid and MEG in the EHUs has low potential for toxicity and bioaccumulation, and similar hydraulic fluids are widely used in open subsea hydraulic systems and routinely released to sea at many offshore hydrocarbon production facilities. Given the nature of the hydraulic fluids, along with the relatively small volumes/rates of discharge and rapid dilution in the marine environment, impacts to water quality from their discharge will be localised to the immediate vicinity of the release location with negligible impacts.

### **Preservation fluids and flowline contaminants**

The seawater used for flushing will be treated with Roemex RX-5254, a mixture of biocide and oxygen scavenger and corrosion inhibitor that may have toxic effects on marine biota. The selection of chemicals is subject to Woodside's chemical selection procedure, as described in Section 7.2.1, and these products are biodegradable, do not biomagnify or bioaccumulate. The water column within the Operational Area is well mixed and will promote the rapid degradation and dilution of residual chemicals upon release to the environment. The components containing treated water will be recovered in sections, hence the inventory of treated water will be released to the sea gradually, in contrast to typical pipeline dewatering where the entire volume is discharged at a single location.

Pockets of trapped hydrocarbons (both liquid condensate and gas) are expected to remain within the flowlines post-flushing and will be released to the marine environment during removal activities as described above. Gas hydrocarbons will become dispersed as bubbles in the water column, which will rise to the surface. Methane is the principal component of the gas and is relatively insoluble in water. As such, methane is expected to rise until it reaches the sea surface, where it will be readily dispersed in the atmosphere. The concentration of methane will not be sufficient to form an explosive atmosphere or results in asphyxiation. Water-soluble components of the gas, such as carbon dioxide and sulphur dioxide will dissolve in the seawater as the gas bubbles rise in the water column. The soluble gasses occur naturally and are present in relatively low amounts. No measurable impacts to water quality are expected to occur as result of the gas release.

Liquid hydrocarbons are only predicted to be present in AP2 and AP4 and will be in small volumes (<2.6 m<sup>3</sup>). Residual hydrocarbons will be released gradually as hydrocarbon pockets are exposed during cut and removal of flowline sections. There is potential for mercury to be present in the residual liquid hydrocarbons in very small quantities, as described in Section 3.7.2.2. The insoluble condensate release will be buoyant and rise in the water column. The condensate will be released with gas which will act to disperse the condensate within the water column as it rises to the sea surface. The resulting condensate droplets will rise slowly in the water column and may be transported away from the release location by currents. Upon reaching the sea surface, the condensate will almost entirely evaporate, with a relatively small portion remaining entrained in the water column. Condensate droplets are not expected to reach the surface in sufficient quantities to result in surface slicks above thicknesses that result in biological impacts, although a sheen may be visible. Any condensate reaching the surface will spread and weather rapidly. Soluble

hydrocarbons will be distributed in the water column through natural water movement and the buoyancy of the condensate droplets are expected to drop below concentrations recognised causing biological impacts within tens to hundreds of metres of the release location. There is potential for short-term, localised decrease in water quality from the release of small volumes of residual fluid at cut locations. Potential short-term impacts are considered to pose no risk of serious or irreversible damage to the environment or marine biota. Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge. Receptors that may be impacted by a liquid condensate release are in-water receptors within the vicinity of the release location. These receptors include plankton, pelagic fishes and potentially cetaceans. Impacts may include acute toxic effects to planktonic organisms near the release location from soluble hydrocarbons and temporary displacement of pelagic fishes. Given the relatively small volume of hydrocarbons released and the resulting localised impact, it is unlikely that displacement of pelagic fishes will occur.

The treated seawater and small volumes of residual hydrocarbons may result in localised, short-term acute toxic effects to planktonic biota, such as phytoplankton and zooplankton. This may result in localised mortality of a small portion of planktonic communities but will not result in impacts to ecosystem function. Recovery to natural levels will occur rapidly (within hours) through natural mixing of the discharge plume with the receiving water. Larger nektonic fauna are expected to avoid harmful discharge plumes and are not expected to exhibit toxic effects. There is potential for localised impacts to benthic habitats from discharge plumes during recovery operations. However, given the gradual release and rapid mixing and dilution of discharges, effects are not expected to occur beyond the footprint of removal activities. Benthic habitats in the removal activity footprint will be disturbed by the removal activities as described in Section 6.7.2 and hence will already be degraded. No long-term impacts to local water and sediment quality or impacts to benthic habitats and communities are expected.

#### **Plastic and metal swarf/ concrete spall**

The flowlines, EHU's and spools are planned to be cut using hydraulic shears – which don't generate swarf – but may be cut with a diamond wire saw or chop saw as a contingency. Steel swarf generated by these cutting methods (approximately 5 mm in width) is considered to have no or negligible toxicity risk to the receiving environment. The small amounts of steel that enter the marine environment as swarf is expected to corrode into insoluble metal oxides. These particles will sink to the seabed, be incorporated into the sediment, and remain in situ. A small amount of plastic swarf from EHUs and coating on flowlines may be released to the environment if the flowline bundle is cut using a saw that generates swarf. The size of swarf particles is typically small (< 5 mm), hence any plastics released may be regarded as microplastics. Laboratory studies have demonstrated that microplastics can be lethal, but only when animals are exposed to microplastics at concentrations that are orders of magnitude higher than environmentally realistic levels (Lenz *et al*, 2016). Given only negligible amounts of the microplastics will be released during subsea infrastructure removal and recovery activities, the filter-feeding animals living directly adjacent to the infrastructure are unlikely to encounter and ingest enough microplastics to cause lethality.

Concrete is considered to pose no or negligible risk to the receiving environment. The slow degradation of the concrete spall released during removal of the flowlines will occur as the chloride, sulphate, carbon dioxide and oxygen in the marine environment interact the concrete material. This typically forms a layer of aragonite ( $\text{CaCO}_3$ ) and brucite ( $\text{Mg}(\text{OH})_2$ ) on the concrete surface (Jakobsen *et al.*, 2016). These degradation products are not toxic.

Traces of scale within the flowlines and spools may also be released as swarf. Studies indicate that there may be traces of mercury (as mercuric sulphide) in the scale based on the presence of mercury vapour within tested hydrocarbons (Section 3.7.2). NORMs are also likely to be present in trace quantities. Given the very small quantities of scale measured and consequent small amount of scale swarf, negligible impacts to sediment will occur.

Removal of the wellheads using an abrasive water jet cut of mechanical cutting tool may result in traces of grit or swarf being incidentally discharged to the seabed at the wellhead location. These materials are non-toxic. Given the trace quantities, their inherent low toxicity, and the seabed disturbance inherent in wellhead removal, impacts to sediment quality will be localised and minor.

#### **Marine growth removal**

All chemicals that may be discharged to the marine environment were or will be selected and approved as per the Chemical Selection and Assessment Environment Guideline (Section 7.2.1). Therefore, any chemicals selected and potentially released are expected to be of low toxicity and biodegradable.

Given the quantities and type of non-routine planned discharges, the gradual discharge of fluids, low toxicity and high dispersion in the open, offshore environment, coupled with the low sensitivity of the receiving environment, any impacts on the marine environment are expected to be localised with slight, short-term effects.

#### **Cumulative impacts**

Given that only localised, short term and negligible impacts are predicated to water quality and marine biota, cumulative impacts affecting marine biota from the discharge of project fluids and subsea discharge including MEG and hydrocarbons are considered unlikely.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
No additional controls identified.				
<b>Good practice</b>				
Angel subsea flowlines flushed in accordance with Section 3.4.15.8 of the Angel Operations EP prior to removal to reduce volume/concentration of hydrocarbons released to the environment during decommissioning.	F: Yes. CS: Minimal cost. Standard practice.	Flushing the flowlines prior to removal reduces the volumes/concentration of hydrocarbons that may be released to the marine environment.  The subsea infrastructure tying the three Angel wells back to the Angel facility will be flushed and filled with treated seawater under the Angel Operations EP in Q2 2025.  Decommissioning of the Angel subsea infrastructure in this EP is contingent on successful flushing of the three Angel rigid flowlines having been completed, in accordance with Section 3.4.15.8 of the Angel Operations EP	Benefits outweigh cost/sacrifice	Yes <b>C 5.5</b>
Fluids and additives planned to be used and intended or likely to be discharged to the marine environment will have an environmental assessment completed before use.	F: Yes. CS: Minimal cost. Standard practice.	Environmental assessment of chemicals will reduce the consequence of impacts resulting from discharges to the marine environment, by ensuring chemicals have been assessed for environmental acceptability. Planned discharges are required for the safe execution of activities and therefore no reduction in likelihood can occur.	Benefits outweigh cost/sacrifice.	Yes <b>C 7.1</b>
Chemical reviews will be performed on all previously approved chemicals to confirm potential chemical	F: Yes. CS: Minimal cost. Standard practice.	Regular reviews will ensure chemicals selected for the activity remain ALARP.	Benefits outweigh cost/sacrifice.	Yes <b>C 7.2</b>

## 28 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
impacts are reduced to ALARP.				
Debris created during the subsea infrastructure removal to be recovered where practicable.	F: Yes. CS: Minimal cost. Standard practice. An ROV will be available during Angel subsea infrastructure removal, which could identify and recover relatively large (300 mm x 300 mm) debris created during removal. The as-left ROV survey may also provide an opportunity to identify and recover relatively large debris.	Recovery of relatively small debris (e.g., cobble-sized concrete) is not feasible due to the small size, however larger debris may feasibly be recovered by ROV. This may reduce man-made material left on the seabed, potentially reducing the environmental impact.	Benefits outweigh cost/sacrifice.	Yes <b>C 7.3</b>
Activity to be conducted in a way that prevents fluids from being discharged to the marine environment.	F: No, it is not technically possible to recover fluids prior to removal activities, nor is it technically possible to recover infrastructure without releasing fluids. CS: Not applicable	Preventing fluids from being discharged to the marine environment will avoid the impact.	Control is not technically feasible and therefore costs outweigh benefits.	No
Reduce recovery rate of flowlines and EHUs to further reduce the release of operational fluids	F: Yes. CS: Moderate. Additional vessel time in field required as recovery rate is reduced.	Reducing the amount and concentration of fluids discharged to the marine environment over time will reduce the impact as it will allow the fluids to dilute and disperse.  The EHUs and flowlines will be recovered over a period of 3 months, thereby reducing the volume of discharges occurring in the Operational Area at one time. Furthermore, staggering of discharges during recovery operations by reducing the recovery rate of the flowlines or EHUs is not required as the EHUs and flowlines are at ambient seabed pressure. It is thus expected that during recovery, the fluid will release slowly over time. Further, the sensitivity of the receiving environment	Grossly disproportionate. Implementation of the control requires cost sacrifice for minimal environmental benefit.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		is considered low and therefore, any reduction in impact achieved from this control is expected to be negligible.		
Collection of plastic swarf discharges by booms from a general support vessel	F: No. It is not technically feasible to recover swarf discharges with booms given the size of the particles and the rapidly dispersing nature of the ocean currents, particularly in the instance of the cut and recover method where swarf discharges will occur subsea. CS: Not applicable	Recovering swarf following cutting will avoid the discharge, however given the small quantity and rapid rate of dispersion any reduction in impact achieved from this control is expected to be negligible.	Control is not technically feasible and therefore costs outweigh benefits.	No
No chemicals to be used for the cleaning of marine growth	F: Yes. CS: Minimal cost.	Preventing fluids from being discharged to the marine environment will avoid the impact.	Odour from decaying marine growth present on the flowline temporarily stored on the vessels for extended duration may present a safety risk for personnel. Costs outweigh benefits.	No
<b>Professional judgement – Eliminate</b>				
Use only shears for cutting flowlines and spools to eliminate generation of swarf.	F: No. Precluding cutting methods may delay removal activities if there are problems with the shear cut methodology (e.g., equipment failure).	Shears are the planned cutting method, however other cutting methods (such as diamond wire saws and chop saws) must remain available in the event that shears do not perform as intended in the field and are also required for cut at plug location.	The environmental impacts from discharging swarf to the environment are minor and localised. The cost of implementing the control is grossly disproportionate to the environmental benefit.	No
Reduction of mercury from within the Angel infrastructure prior to removal.	F: Yes. CS: Moderate.	Cleaning of scale prior to removal would require large volumes of cleaning chemicals, which pose an environmental hazard and require safe disposal. Cleaning would require additional engineering for an onshore facility to receive cleaning fluids which would result in onshore environmental impacts (e.g.,	Based on the volumes of swarf predicted, only very small corresponding volumes of scale would be generated in the event the primary cutting method is not used. The cost of implementing the control is grossly disproportionate to the environmental benefit.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		nearshore discharges). Mercury may also be impregnated into steel and would not be feasible to reduce.		
Recover flowlines using reverse S-lay methodology	F: No. There is no proven track record for concrete coated pipelines being retrieved by the reverse s-lay method. Reverse s-lay would require a large pipelay vessel to mobilise to the operational area. Suitable pipelay vessels are comparatively very expensive and would delay timing of the infrastructure removal. S-lay recovering methodology not preferred option based on outcomes from technical assessments Section 3.7.2.	Reverse s-lay of the flowlines and spools would not require cuts to be made subsea.	Control is not technically feasible and therefore costs outweigh benefits.	No
Increase the lengths of recovered flowline sections to reduce the number of cuts required.	F: Yes. CS: Significant. Increased non-productive time during the removal campaign due to weather conditions, resulting in an increase in the duration of the campaign.	Woodside proposed to cut the flowline into approximately 10-20 m sections during recovery. These section lengths align with the length of sections welded together to create the flowline. The section length permits reliable safe handling and storage of the pipeline during recovery. Woodside's recent operational experience in recovering the Griffin gas export pipeline demonstrates approximately 12 m section lengths provide a good balance between the number of cuts and vessel storage limitations. Increasing the length of sections would require longer laydown deck space on the vessel to safely store recovered sections of pipeline, which would constrain	The cutting methods may generate concrete rubble (shears) or small amounts of concrete, steel, and plastic swarf (chop saw). These discharges pose little environmental risk. Hence reducing the number of cuts provides a small environmental benefit. The costs (increased safety risks, increased non-productive time, additional laydown space requirements) of increasing recovered section pipeline lengths are grossly disproportionate to the environmental benefit of reducing the number of cuts.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		vessel selection. Increasing the section length would also increase the complexity of lifting and impose more stringent sea state operating limits.		
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No cutting of the flowline at field joints unless engineering assessment demonstrates that no plastic debris will be released.	F: Yes. CS: Minimal cost.	<p>The planned method for cutting the flowline is to use mechanical shears to cut away from the field joints (i.e., on the sections of flowline with concrete weight coating). This method prevents plastic covering the field joints being dislodged and lost to the sea. There will be some spalling of the concrete weight coating, with a small amount of concrete rubble left on the seabed at each cut location. Woodside has successfully used this method for removing the Griffin gas export flowline off Western Australia.</p> <p>Cutting through the concrete weight coating takes longer, and will dull shear blades faster, than cutting at the field joints.</p> <p>While Woodside plans avoid cutting at field joints, there may be circumstances in which such cuts are required. Prior to undertaking such cuts, Woodside will undertake an engineering assessment of the risk of releasing plastic debris to the environment. The engineering assessment will be developed if it is</p>	Benefits outweigh cost/sacrifice.	Yes <b>C 7.4</b>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>28</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		<p>required, but is expected to include:</p> <ul style="list-style-type: none"> <li>examination of the field joints on recovered sections of the flowline to assess the condition of the join coatings</li> <li>test cutting (using the proposed method) of a field join on the deck to assess the potential for plastic debris to be released to the sea.</li> <li>evaluation of the risk of the loss of marine debris based on the points above, and only proceed with field join cuts if the method can reasonably be shown to not release plastic debris.</li> </ul>		
<p><b>ALARP statement:</b></p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with routine and non-routine discharges (project fluids and subsea discharges). As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.</p>				

Demonstration of acceptability
<p><b>Acceptability statement:</b></p> <p>The impact/risk assessment has determined that, given the adopted controls, routine and non-routine discharges (project fluids and swarf) may result in slight, short-term impact (&lt;1 year) on species, habitat (but not affecting ecosystem function), physical or biological attributes.</p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.</p>

EPOs, EPS and MC			
EPO	Controls	PS	MC
EPO 10	C 5.5 Refer Section 6.7.5	PS 5.5.1 Refer Section 6.7.5	MC 5.5.1 Refer Section 6.7.5

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EPOs, EPS and MC			
EPO	Controls	PS	MC
Impacts from routine and non-routine discharges from project fluids and subsea discharges will be limited to planned activities and impacts described as part of the Petroleum Activities Program.	<b>C 7.1</b> Fluids and additives planned to be used and intended or likely to be discharged to the marine environment will have an environmental assessment completed before use.	<b>PS 7.1.1</b> All chemicals intended or likely to be discharged to the marine environment selected in accordance with the chemical assessment process (refer to Section 7.2.1).	<b>MC 7.1.1</b> Records demonstrate chemical selection, assessment and approval process is followed.
	<b>C 7.2</b> Chemical reviews will be performed on all previously approved chemicals to confirm potential chemical impacts are reduced to ALARP.	<b>PS 7.2.1</b> Acceptability of previously approved chemicals are re-evaluated to ensure ALARP, and alternatives are considered.	<b>MC 7.2.1</b> Records demonstrate chemical review performed.
	<b>C 7.3</b> Debris created during subsea infrastructure removal to be recovered where practicable.	<b>PS 7.3.1</b> Debris greater than 300 mm x 300 mm created during subsea infrastructure removal will be recovered where practicable.	<b>MC 7.3.1</b> Records demonstrate that any debris created during subsea infrastructure removal observed by ROVs greater than 300 mm x 300 mm is recovered where practicable.
	<b>C 7.4</b> No cutting of the flowline at field joints unless engineering assessment demonstrates that no plastic debris will be released.	<b>PS 7.4.1</b> An engineering assessment must be undertaken prior to cutting the flowline at a field joint. The engineering assessment must provide reasonable assurance that plastic debris will not be released to the marine environment. The assessment must be completed before any flowline cuts at field joints may be made to remove the flowline.	<b>MC 7.4.1</b> Engineering assessment documentation demonstrates that Woodside is reasonably satisfied that field joint cuts (if required) will not release plastic debris to the marine environment.  <b>MC 7.4.2</b> Records (e.g., ROV observations) demonstrate that field joint cuts did not release plastic debris to the marine environment.

## 6.8 Unplanned activities (accidents, incidents, emergency situations)

### 6.8.1 Quantitative spill risk assessment methodology

As part of the risk identification process, Woodside identified the range of credible hydrocarbon spill scenarios that may occur during the Petroleum Activity.

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 surface 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 oil-in-water 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 particle (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

Table 6-7 summarises the characteristics of the hydrocarbons used as the basis for the modelling studies and subsequently used to inform the assessment of credible hydrocarbon spills. Additional detail on the characteristics of these hydrocarbons is also provided in the sections below.

**Table 6-7 Characteristics of the hydrocarbon types used for modelling and ecotoxicological studies**

Hydrocarbon Type	Density (g/m <sup>3</sup> ) at 25 °C	Viscosity (cP) at 25 °C	Component	Volatile (%)	Semi-volatile (%)	Low volatility (%)	Residual (%)	Aromatics (%)
			Boiling Point (°C)	<180	180–265	265–380	>380	Of whole oil <380
Marine diesel	0.829 @ 25 °C	4.0 @ 25 °C	% of total	6.0	34.6	54.4	5.0	3.0
			% aromatics	1.8	1.0	0.2	-	-

**6.8.1.1.1 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) (RPS, 2022). Approximately 5% of the oil is shown to be persistent. The aromatic content of the oil is approximately 3%.

The characteristics of the marine diesel are given in Table 6-8.

**6.8.1.2 Environment that may be affected and hydrocarbon contact thresholds**

The outputs of the quantitative hydrocarbon spill modelling are used to assess the environmental consequence by delineating which areas of the marine environment could be exposed to hydrocarbon levels exceeding selected hydrocarbon threshold concentrations if a credible hydrocarbon spill scenario occurred. The summary of the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA. The EMBA covers a larger area than the area that is likely to be affected during any single spill event, as the model was run for various weather and metocean conditions, and the EMBA represents the total extent of all the locations where hydrocarbon thresholds could be exceeded from all modelling runs.

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 hydrocarbon fate. Together, these EMBA have defined the spatial extent for the existing environment described in Section 4.1.

The spill modelling outputs are presented as areas that meet threshold concentrations for surface, entrained and dissolved hydrocarbons for the modelled scenarios. Surface spill concentrations are expressed as grams per square metre (g/m<sup>2</sup>), with entrained and dissolved aromatic hydrocarbon concentrations expressed as parts per billion (ppb). A conservative approach to selecting thresholds was taken by adopting the guideline impact thresholds (NOPSEMA 2019) for surface, entrained, dissolved and accumulated hydrocarbons to define the EMBA for a marine diesel spill. An additional threshold has been included to define the boundary within which socio-cultural impacts may occur, based on visible surface oil (1 g/m<sup>2</sup>) impacting on the visual amenity of the marine environment. Each of these hydrocarbon thresholds are presented in Table 6-8 and described in the subsections below.

**Table 6-8: Summary of thresholds applied to the quantitative hydrocarbon spill risk modelling results**

Hydrocarbon type	EMBA				Socio-cultural EMBA
	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Surface hydrocarbon (g/m <sup>2</sup> )	Accumulated/shoreline hydrocarbon (g/m <sup>2</sup> )	Surface hydrocarbon (g/m <sup>2</sup> )
Marine diesel	10	50	100	100	1

### 6.8.1.3 Operational and scientific monitoring

A planning area for operational and scientific monitoring is also described in Annex C of the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) (Appendix G). This planning area has been set with reference to the low exposure entrained value of 10 ppb detailed in the NOPSEMA (2019) bulletin Oil Spill Modelling.

An operational and scientific monitoring program may be activated following a release event with the potential to contact sensitive environmental receptors. This would consider receptors at risk (ecological and socio-economic) and in particular, any identified pre-emptive baseline areas for the worst-case credible spill scenario or other identified unplanned hydrocarbon releases associated with the operational activities.

## 6.8.2 Unplanned Hydrocarbon Release: Vessel Collision

Context													
Project Vessels – Section 3.6		Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Socio-Economic Environment – Section 4.10					Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Loss of hydrocarbons (MDO) to marine environment due to a vessel collision (e.g. support vessels or other marine users)		X		X	X	X	A	D	1	M	LCS GP PJ	Broadly Acceptable	EPO 11
Description of source of impact													
<p><b>Background</b></p> <p>The temporary presence of project vessels in the Operational Area during the petroleum activity will result in a potential navigational hazard for other marine users (such as commercial shipping) within the immediate area (as discussed in Section 6.7.1). This navigational hazard could result in a third-party vessel colliding with a project vessel, resulting in a release of hydrocarbons.</p> <p>A typical project vessel is likely to have multiple isolated marine diesel tanks distributed throughout the hull of the vessel. The marine diesel storage capacity of typical offshore or general support vessel can be in the order of 1000 m<sup>3</sup> (total) that is distributed through multiple isolated tanks. Individual marine diesel tanks are typically less than 500 m<sup>3</sup> in volume; however, for the purposes of a conservative indication of the risks associated with a vessel collision for the petroleum activity, Woodside has assumed a largest marine diesel tank volume of 500 m<sup>3</sup> for a project vessel.</p> <p>In the unlikely event of a vessel collision involving a project vessel during the PAP, the vessel will have the capability to pump marine diesel from a ruptured tank to a tank with spare volume in order to reduce the potential volume of fuel released to the environment.</p> <p><b>Industry Experience</b></p> <p>Registered vessels or foreign flag vessels in Australian waters are required to report events to the Australian Transport Safety Bureau (ATSB), AMSA or Australian Search and Rescue (AusSAR).</p> <p>From a review of the ATSB marine safety and investigation reports, one vessel collision occurred in 2011/12 that resulted in a spill of 25–30 L of oil into the marine environment as a result of a collision between a tug and support vessel off Barrow Island. Two other vessel collisions occurred in 2010, one in the port of Dampier, where a support vessel collided with a barge being towed. Minor damage was reported and no significant injury to personnel or pollution occurred. The second 2010 vessel collision involved a vessel under pilot control in port connecting with a vessel alongside a wharf, causing it to sink. No reported pollution resulted from the sunken vessel. These incidents demonstrate the likelihood of only minor volumes of hydrocarbons being released during the highly unlikely event of a vessel collision occurring from 2010 to 2011, the ATSB's annual publication defines the individual safety action factors identified in marine accidents and incidents: 42% related to navigation action (2011). Of those, 15% related to poor</p>													

communication and 42% related to poor monitoring, checking and documentation (ATSB, 2011). The majority of these related to the grounding instances.

### **Credible Scenario**

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 environmental risk analysis and evaluation identified and assessed a range of potential scenarios that could result in a loss of vessel structural integrity, resulting in damage to fuel storage tank(s) and a loss of marine diesel to the marine environment (Table 6-9). The scenarios considered damage to single and multiple fuel storage tanks in the project vessels due to various combinations of vessel to vessel scenarios.

The scenarios considered comprised a collision of project vessels with each other or with a third-party vessel (in other words, commercial shipping, other petroleum-related vessels and commercial fishing vessels). This was assessed as being credible but highly unlikely, given the standard vessel operations and equipment in place to prevent collision at sea and the construction and placement of storage tanks. The worst-case volume for a loss of containment from a project vessel is 500 m<sup>3</sup> as described above. Given the offshore location of the Operational Area, vessel grounding is not considered a credible risk.

### **Quantitative Hydrocarbon Risk Assessment**

Modelling of a short-term (instantaneous) uncontrolled surface release of 500 m<sup>3</sup> of marine diesel due to a vessel collision at the Angel-3 wellhead location was available for Woodside's NWS Joint Venture Decommissioning, conducted in 2022 (RPS, 2022). The release location used for the spill modelling lies within the Operational Area and is located directly adjacent to the Glomar Shoals. A summary of release characteristics for the modelled scenario is provided in Table 6-9 below.

The modelling assessed the extent of a marine diesel spill volume of 500 m<sup>3</sup> for all seasons, using an historic sample of wind and current data for the region. For each scenario, a total of 200 replicate simulations were run over an annual period. Tabulated probabilities were assessed to a minimum level of 0.5%. The modelling was conducted by RPS using a three-dimensional hydrocarbon spill trajectory and weathering model (SIMAP, Spill Impact Mapping and Analysis Program) which is designed to simulate the transport, spreading and weathering of specific oil types under the influence of changing meteorological and oceanographic forces.

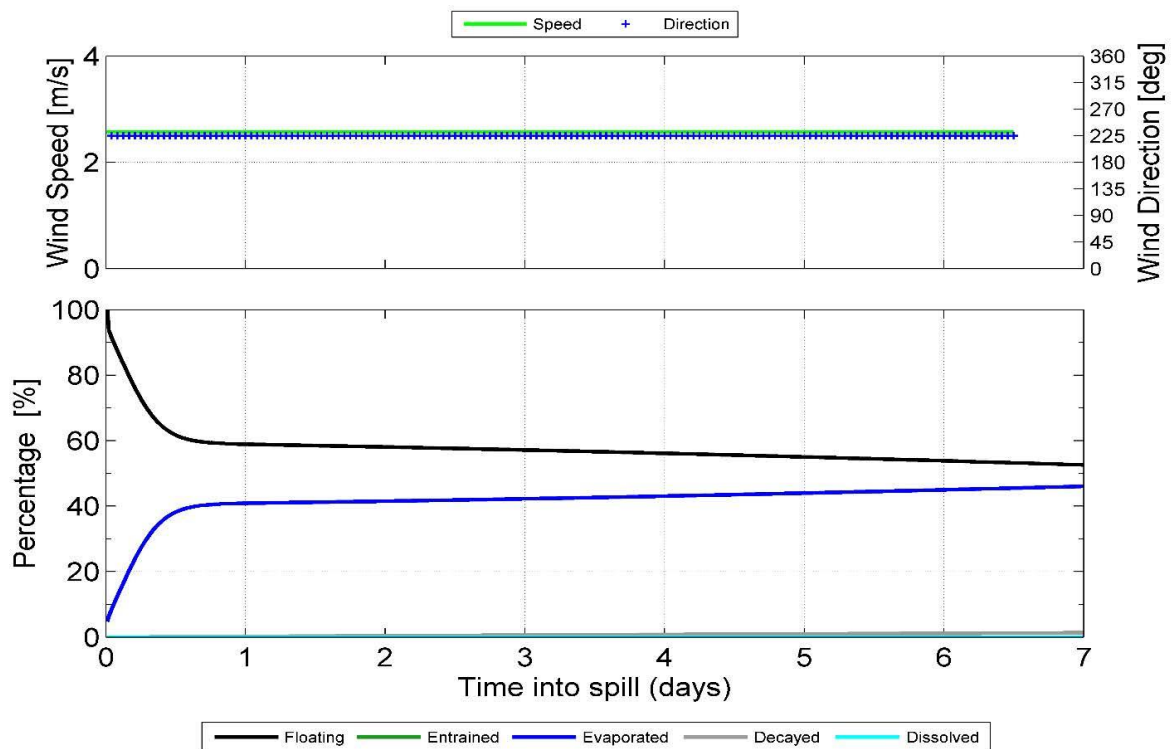
**Table 6-9: Summary of credible hydrocarbon spill scenarios as a result of vessel collision**

Scenario	Location and Coordinates	Hydrocarbon	Depth (m)	Release Rate and Volume (m <sup>3</sup> )
<b>Unplanned Hydrocarbon Release – caused by loss of marine vessel separation Event:</b> breach of a vessel fuel tank due to collision with another vessel. Assume loss of largest single tank inventory only: <ul style="list-style-type: none"> <li>• Collision of a third-party vessel with the multi-purpose construction vessel (MCV); or</li> <li>• Collision of the MCV and a general support vessel</li> </ul>	AP3 well location (closest to Glomar Shoals ~13 km NE of the well) 19° 23' 26.03" S 116° 37' 47.25" E	Marine Diesel	Surface	500 Instantaneous release

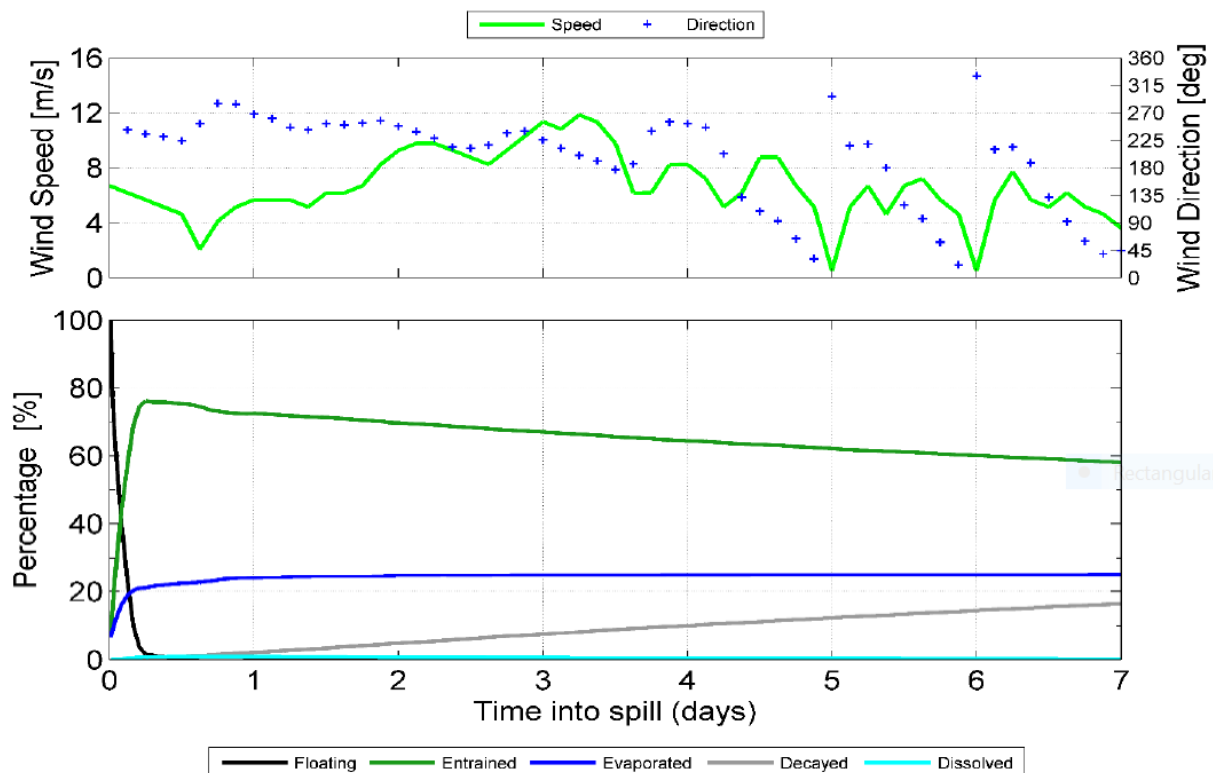
### **Hydrocarbon Weathering Characteristics**

The mass balance forecast for the constant-wind case (Figure 6-1) for marine diesel shows that approximately 41% of the oil is predicted to evaporate within 24 hours. Under these calm conditions the majority of the remaining oil on the water surface 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 6-22), where the winds are of greater strength, entrainment of marine diesel into the water column is indicated to be significant. Approximately 24 hours after the spill, around 72% of the oil mass is forecast to have entrained and a further 24% is forecast to have evaporated, leaving only a small proportion of the oil floating on the water surface (<1%). The residual compounds will tend to remain entrained beneath the surface under conditions that generate wind waves (approximately >6 m/s). The characteristics of the marine diesel are given in Table 6-9 and 6.8.1.1.



**Figure 6-1 Proportional mass balance plot representing the weathering of marine diesel spilled onto the water surface as a one-off release (50 m<sup>3</sup>) and subject to a constant 5 kn (2.6 m/s) wind at 27 °C water temperature and 25 °C air temperature (RPS 2022)**



**Figure 6-22 Proportional mass balance plot representing weathering of marine diesel spilled onto the water surface as a one-off release (50 m<sup>3</sup>) and subject to variable wind at 27 °C water temperature and 25 °C air temperature (RPS 2022)**



Impact assessment
<i>Environmental value(s) potentially impacted</i>
<p><b><i>Environment that May Be Affected</i></b></p> <p>The socio-cultural and ecological EMBA for the Petroleum Activity is based on stochastic modelling of a short-term (instantaneous) uncontrolled surface release of 500 m<sup>3</sup> of marine diesel due to a vessel collision at the Angel-3 wellhead location (closest wellhead to Glomar Shoals) and was assessed over an annual period. The results of the modelling for the scenario are outlined below, and the extents of the two EMBA's from the modelling have been outlined to quantify the movement and fate of spilled hydrocarbons that would result from accidental, uncontrolled releases; and to investigate the risk to sensitive receptors (emergent features, submerged features and shorelines) posed by the release.</p> <p>The EMBA's cover a larger area than the area that would be affected during any single spill event and represents the total extent of all the locations where hydrocarbon thresholds could be exceeded from any of the modelling runs. It is important to note that the trajectory of a single spill would have a considerably smaller footprint. Oil spill modelling was undertaken using a three-dimensional oil spill trajectory and weathering model, SIMAP (Spill Impact Model Application Package), which is designed to simulate the transport, spreading and weathering of specific oil types under the influence of changing meteorological and oceanographic forces.</p> <p>As the weathering of different fates of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean transport mechanism, a different EMBA is discussed for each fate. These fates have been outlined below.</p> <p><b><i>Modelling Results</i></b></p> <p><b><i>Socio-cultural EMBA</i></b></p> <p><u><i>Surface Hydrocarbons:</i></u></p> <p>Quantitative hydrocarbon spill modelling results for surface hydrocarbons are shown in Table 6-10. If this scenario occurred, a surface hydrocarbon slick would form down current of the release location, with the trajectory dependent on prevailing wind and current conditions at the time. A socio-cultural EMBA for surface hydrocarbons which includes the threshold for visible surface hydrocarbons of equal to or greater than 1 g/m<sup>2</sup> may extend up to about 77 km west from the release site. No receptors are predicted to be contacted at or above the 1 g/m<sup>2</sup> threshold.</p> <p><u><i>Accumulated Hydrocarbons:</i></u></p> <p>No receptors are predicted to be contacted by shoreline oil concentrations of equal to or greater than 10 g/m<sup>2</sup> (Table 6-10).</p> <p><b><i>Ecological EMBA</i></b></p> <p><u><i>Surface Hydrocarbons:</i></u></p> <p>The modelling indicates that the ecological EMBA would be confined to open water, with surface hydrocarbons extending up to about 45 km south-west from the release location of equal to or greater than the 10 g/m<sup>2</sup> impact threshold (Table 6-10). No receptors are predicted to be contacted at or above the 10 g/m<sup>2</sup> threshold.</p> <p><u><i>Accumulated Hydrocarbons:</i></u></p> <p>Accumulated hydrocarbons above threshold concentrations (<math>\geq 100</math> g/m<sup>2</sup>) were not predicted by the modelling to occur at any location and therefore no receptors were detected to be impacted by accumulated hydrocarbons (Table 6-10).</p> <p><u><i>Entrained Hydrocarbons:</i></u></p> <p>Quantitative hydrocarbon spill modelling results for entrained hydrocarbons are shown in Table 6-10. The modelling indicates that locations exposed to entrained hydrocarbons at concentrations equal to or greater than the 100 ppb threshold is predicted to be found up to 355 km south-west from the spill site. The Montebello AMP is predicted to have a 3% probability of entrained hydrocarbon contact (Table 6-10). The maximum entrained oil concentration forecast is 466 ppb (RPS, 2022). No other receptors are predicted to be contacted at or above the 100 ppb threshold.</p> <p><u><i>Dissolved Aromatic Hydrocarbons:</i></u></p> <p>Dissolved aromatic hydrocarbon concentrations equal to or greater than the 50 ppb threshold are predicted to be found up to around 161 west km from the spill site. The receptors predicted to be impacted by this spill are the Montebello AMP and Glomar Shoals, with a probability of 0.5% (Table 6-10). The maximum dissolved aromatic hydrocarbon concentration forecast for any receptor is predicted to be 77 ppb at Glomar Shoals (RPS, 2022).</p>

Table 6-10: Probability of hydrocarbon spill contact above impact thresholds within the EMBA with key receptor locations and sensitivities for a 500 m³ Instantaneous release of marine diesel

Environmental setting		Location/name		Environmental, Social, Cultural, Heritage and Economic Aspects presented as per the Environmental Risk Definitions in Woodside’s Risk Management Procedure																			Probability of hydrocarbon contact (diesel) (%)  note: the probability is based on stochastic modelling of 200 hypothetical worst-case spills under a variety of weather and metocean conditions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Submerged Shoals*	Australian Marine Parks*	Glomar Shoals <sup>29</sup>	Montebello AMP	Open water (pristine)	Marine sediment (pristine)	Coral reef	Seagrass beds/macroalgae	Mangroves	Spawning/nursery areas	Open water – productivity/ upwelling	Non-biogenic coral 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 and fur seals)	Marine turtles (including foraging, interesting areas, and significant nesting beaches)	Sea snakes	Whale sharks	Sharks and rays	Sea birds and/or migratory shorebirds	Pelagic fish populations	Resident/demersal fish	Fisheries – commercial	Fisheries – traditional	Tourism and recreation	Protected areas/heritage – European and Indigenous/shipwrecks	Offshore oil & gas infrastructure (topside and subsea)	Surface hydrocarbon (1-10 g/m <sup>2</sup> )	Accumulated hydrocarbons (10– 100 g/m <sup>2</sup> )	Surface hydrocarbon (≥10 g/m <sup>2</sup> )	Entrained hydrocarbon (≥100 ppb)	Dissolved aromatic hydrocarbon (≥50 ppb)	Accumulated hydrocarbons (>100 g/m <sup>2</sup> )																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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<sup>29</sup> Probabilities and maximum concentrations calculated at depth of submerged feature.  
\* Note: hydrocarbons cannot accumulate on open ocean, submerged receptors, or receptors not fully emergent.

Summary of Potential Impacts to Environmental Value(s)
Summary of potential impacts to protected species
Marine Mammals (cetaceans and dugongs)
<p>Marine mammals 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 (DWH 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 <i>et al.</i>, 2015), reproductive failure, adverse health effects (such as lung disease, poor body condition) and potentially mortality (DWH Natural Resource Damage Assessment Trustees, 2016). In a review of cetacean observations relating to a number of large-scale hydrocarbon spills, Geraci (1988) found little evidence of mortality associated with hydrocarbon spills. However, it was concluded that exposure to oil from the Deepwater Horizon resulted in increased mortality to cetaceans in the Gulf of Mexico (DWH Natural Resource Damage Assessment Trustees, 2016). Geraci (1988) did identify behavioural disturbance (as in, avoiding spilled hydrocarbons) in some instances for several species of cetacean, suggesting 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) (Achingier Dias <i>et al.</i>, 2017).</p> <p>Impacts to cetaceans depend on the exposure pathway, with exposure to entrained oil and surface slicks not expected to result in significant impacts due to the relatively volatile, non-persistent nature of the hydrocarbons. Direct toxic effects from external exposure are not expected to occur, although mucous membranes and eyes may become irritated. Indirect toxic effects, such as hydrocarbon ingestion through accumulation in prey, may occur. Baleen whales feeding within entrained hydrocarbon plumes may ingest hydrocarbons, potentially resulting in toxic effects (particularly fresh hydrocarbons near the release location).</p> <p>As identified by a search of the EPBC Act Protected Matters Database in Section 4.6.3, protected species including migrating pygmy blue whales and humpback whales may be encountered within the Operational Area or EMBA. The humpback whale migration (north and south) BIA intersects with the EMBA (located 33 km south of Operational Area), and the pygmy blue whale migration BIA overlaps with the EMBA. Pygmy blue whales are known to occur within the region during their northern migration from April to August and from October to January in the southern migration. The presence of the species in the EMBA is expected to be limited to infrequent occurrences of individuals or small groups and could be impacted if they are in close proximity to the marine diesel spill location, where the volatile, water soluble and most toxic components of the diesel may be present. However, the window for exposure to hydrocarbons with the potential for any toxicity effects in these waters would be limited to a few days following the spill.</p> <p>A loss of marine diesel from a vessel collision could result in a disruption to individual marine mammals transiting the Operational Area or EMBA. Such disruption could include behavioural impacts (such as avoidance of impacted areas), sub-lethal biological effects (such as skin irritation, irritation from ingestion or inhalation) and, in rare circumstances, death. However, given the absence of critical habitats or aggregation areas, cetaceans in the area are expected to be transient, and impacts are expected to be limited to individuals or small groups of animals. Impact on the overall population viability of cetaceans is not predicted.</p>
Marine Reptiles
Marine Turtles
<p>Adult sea turtles exhibit no avoidance behaviour when they encounter hydrocarbon slicks (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 <i>et al.</i>, 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 <i>et al.</i>, 1995).</p> <p>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).</p> <p>Overlap of the EMBA with habitats critical to the survival of flatback turtles for internesting (Table 4-8) and BIAs is identified in Section 4.6.2, particularly the closest internesting BIAs for flatback turtles which extends ~20 km from known nesting locations on Legendre Island and Huay Island, ~32 km from known nesting locations on Island Delambre Island, and ~47 km from known nesting locations on Intercourse Island. However, it is noted that the BIAs and habitats critical to the survival of flatback turtles are considered very conservative as they are based on the maximum range of internesting females and many turtles are more likely to remain near their nesting beaches. The Operational Area does not overlap with any internesting BIAs or habitats critical to the survival of turtles.</p>

In the event of a worst-case vessel spill of MDO, there is a potential that surface and entrained hydrocarbons exceeding impact threshold concentrations (10 g/m<sup>2</sup> and 100 ppb respectively) will be present in offshore waters extending up to 45 km and 355 km respectively, from the release site. Toxicity of hydrocarbons will be significantly reduced by weathering at over such distances, with the volatile and water soluble (often the most toxic) components expected to have dissipated beyond the vicinity of the spill site. Dissolved aromatic hydrocarbons at concentrations equal to or greater than the 50 ppb threshold are predicted to be limited to the vicinity of the spill site. Low concentrations are only capable of causing sublethal impacts to the most sensitive marine organisms and no lethal or sub-lethal impacts to marine turtles are expected in the BIAs. The potential for lethal and sub-lethal impacts to marine turtles is limited to small numbers of transient individuals that may be present in offshore waters near the release location.

#### **Seasnakes**

Impacts to seasnakes from direct contact with hydrocarbons are likely to result in similar physical effects to those recorded for marine turtles and may include potential damage to the dermis and irritation to mucus membranes of the eyes, nose and throat (ITOPF, 2011). 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 less than 100 m) and, while Leaf-scaled Sea Snakes and Short-nosed Sea Snakes are known to be present in the Operational Area and EMBA (refer to Section 4.6.2), their abundance is not expected to be high, given the offshore location of the activity. Therefore, a hydrocarbon spill may have a minor disruption to a portion of the population but there is no threat to overall population viability.

#### **Sharks and Rays**

Other protected species that may occasionally transit through the area and may potentially be exposed to a marine diesel spill, include shark and ray species such as whale sharks and manta rays. 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). In the offshore environment, it is probable 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 are predicted to be minor and only a temporary disruption.

Hydrocarbon contact may affect whale sharks through ingestion (entrained or dissolved hydrocarbons), particularly if feeding. The Operational Area overlaps a whale shark foraging BIA northward from Ningaloo along the 200 m isobath. The species has a widespread distribution and a highly migratory nature. Subsequently, some individuals may transit through the EMBA. 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.

Should sharks or rays be present in offshore waters near the Operational Area during the spill, direct impacts may occur if foraging within surface slicks or in the upper 20 m to 30 m of the water column containing entrained hydrocarbons and dissolved aromatics. Contamination of their food supply and the subsequent ingestion of this prey may also result in long term impacts as a result of bioaccumulation. Impacts are again predicted to be limited to a small number of animals given the low numbers of animals that may transit through the area during the short period when spilled hydrocarbons are present. Given the limited number of animals that may be impacted and the rapid dispersion of marine diesel, it is considered that any potential impacts will be minor.

#### **Seabirds and/or Migratory Shorebirds**

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 (AMSA, 2013; International Petroleum Industry Environmental Conservation Association, 2004) and result in mortality due to oiling of feathers or 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 (AMSA, 2013).

Seabirds may also be exposed to marine diesel on the sea surface or upper water column if resting or foraging in waters near to the spill. However, due to the limited spatial extent of a marine diesel spill and limited window for exposure, population level impacts are not expected.

The extent of the EMBA for a surface slick may result in impacts on feeding habitat; however, this is not expected to result in a threat to the overall population viability of seabirds or shorebirds. As outlined in Section 4.6.4, 21 species of seabirds or migratory shorebirds were identified by the PMST as potentially occurring within the EMBA, including 14 occurring in the Operational Area. The EMBA overlaps with a breeding BIA for two species (Lesser Crested Tern and Roseate Tern) and six breeding BIAs for the wedge-tailed shearwater (see Table 4-12). The Operational Area overlaps one breeding area BIA for Wedge-tailed Shearwaters (located in the Kimberley, Pilbara and Gascoyne coasts and islands including Ashmore Reef).

No receptors will be contacted by accumulated oil concentrations equal to or greater than 100 g/m<sup>2</sup> for the ecological EMBA, and no receptors will be contacted by accumulated oil concentrations equal to or greater than 10 g/m<sup>2</sup> for the socio-cultural EMBA. No receptors will be contacted by surface oil concentrations equal to or greater than 10 g/m<sup>2</sup> for the ecological EMBA, and no receptors will be contacted by surface oil concentrations equal to or greater than 1 g/m<sup>2</sup> for the socio-cultural EMBA. Therefore, no impacts are expected to important nesting or roosting habitats.

### **Summary of potential impacts to other habitats and communities**

#### **Benthic Fauna Communities**

Benthic fauna communities associated with the submerged shoals and banks located in the EMBA (refer to Section 4.5) may be exposed to entrained hydrocarbons above threshold concentrations (more than 100 ppb). The modelling indicates locations exposed to entrained hydrocarbons at or above the threshold concentration of 100 ppb are restricted to offshore areas up to approximately 355 km from the release site. Toxicity of hydrocarbons will be significantly reduced by weathering at over such distances, with the volatile and water soluble (often the most toxic) components expected to have dissipated beyond the vicinity of the spill site.

The quantitative spill risk assessment indicates that entrained hydrocarbons equal to or greater than 100 ppb are predicted to have a very low probability of contact with the outer boundaries of the Montebello AMP (3% probability of contact). Dissolved aromatic hydrocarbons equal to or greater than 50 ppb are predicted to have a very low probability of contact with the outer boundaries of the Montebello AMP (0.5% probability of contact) and Glomar Shoals (0.5% probability of contact). Dissolved aromatic hydrocarbons at concentrations equal to or greater than the 50 ppb threshold are predicted to be limited to the vicinity of the spill site.

Given the localised area of the potential EMBA and the rapid dispersion, dilution and weathering of a marine diesel spill, it is expected that any potential impacts will be low magnitude and temporary in nature. Therefore, submerged shoals and banks located in the EMBA are expected to have limited contact with entrained hydrocarbons and dissolved hydrocarbons. A loss of marine diesel from a vessel collision may result in a very small area of seabed and associated epifauna and infauna exposed to hydrocarbons.

#### **Plankton and Fish Communities**

Within the EMBA for a marine diesel spill resulting from a vessel collision, there is the potential for plankton communities to potentially be impacted where entrained or dissolved hydrocarbon threshold concentrations are exceeded. A range of lethal and sublethal impacts may occur to plankton exposed to entrained or dissolved hydrocarbons within the EMBA. However, communities are expected to recover quickly (weeks or months) due to high population turnover (ITOPF, 2011). With the fast population turnover of open water plankton populations, it is considered any potential impacts will be low magnitude and temporary in nature.

Pelagic fish populations in the open water offshore environment of the EMBA are highly mobile and have the ability to move away from a marine diesel spill. The spill-affected area would be confined to the surface layer and upper 20 to 30 m of the water column. It is therefore unlikely that fish populations would be exposed to widespread hydrocarbon contamination. Pelagic fish populations are distributed over a wide geographical area so impacts on populations or species level are considered to be negligible. Combined with these factors and the rapid dispersion of marine diesel, it is considered that any potential impacts will be minor.

Other communities (e.g. demersal fish, benthic infauna and epifauna) and key sensitivities (e.g. KEFs identified in Section 4.7) occur within the EMBA, however they will not be directly exposed or impacted by a marine diesel spill as hydrocarbons are confined to the upper layers of the water column.

#### **Spawning/Nursery Areas**

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 if a spill reaches nursery areas close to the shore (such as seagrass and mangroves) (ITOPF, 2011). Fish spawning (including for commercially targeted species such as snapper and mackerel) mostly occurs in nearshore waters at certain times of the year; nearshore waters are also inhabited by higher numbers of juvenile fishes than offshore waters.

Modelling indicated that in the unlikely event of a marine diesel spill, there is a potential for entrained hydrocarbons to occur in the surface water layers above threshold concentrations in the shallow areas of the EMBA. This, and the potential for possible lower concentration exposure for dissolved aromatic hydrocarbons, has a negligible potential to result in lethal and sub-lethal impacts to a certain portion of fish larvae in affected areas, depending on concentration and duration of exposure and the inherent toxicity of the hydrocarbon. Losses of fish larvae in the 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 (as in, 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 there was no change to the juvenile cohorts following this 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 slight and short-term, as would flow-on effects to adult fish stocks into which larvae are recruited.

#### **Coral Reef Habitat**

Quantitative hydrocarbon spill modelling results for entrained hydrocarbons are shown in Table 6-10. The modelling indicates that locations exposed to entrained hydrocarbons at concentrations equal to or greater than the 100 ppb threshold is predicted to be found up to 355 km south-west from the spill site. The Montebello AMP is predicted to have a 3% probability of entrained hydrocarbon contact (Table 6-10). The maximum entrained oil concentration forecast is 466 ppb (RPS, 2022). No other receptors are predicted to be contacted at or above the 100 ppb threshold.

Exposure to entrained hydrocarbons has the potential to result in lethal or sub-lethal toxic effects to corals and other sensitive sessile benthos within the upper water column, including subtidal corals. Mortality in a number of coral species is possible and 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). In the unlikely event of a marine diesel spill occurring at the time of coral spawning at potentially affected coral locations or in the general peak period of biological productivity, there is potential for a 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, some non-coral species may be affected via direct contact with entrained 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 will entirely depend on actual hydrocarbon concentration, duration of exposure and water depth of the affected communities.

If coral habitats within the EMBA are exposed to hydrocarbons, coral community live cover, structure and composition is predicted to reduce, manifested by loss of corals and associated sessile biota. Recovery of these impacted areas relies on coral larvae from neighbouring coral communities that have either not been affected or only partially impacted.

#### **Key Ecological Features**

KEFs potentially impacted by a marine diesel spill from a vessel collision event are:

- Ancient Coastline at 125 m Depth Contour (2 km south of Operational Area)
- Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula (294 km south-west of Operational Area)
- Continental Slope Demersal Fish Communities (115 km west of Operational Area)
- Exmouth Plateau (227 km west of Operational Area)
- Glomar Shoals (overlaps Operational Area)

These KEFs are largely described to identify the potential for increased biological productivity and, therefore, ecological significance.

The consequences of a marine diesel spill from a vessel collision may impact the values of the KEFs affected (for the values of each KEF, see Section 4.7). Potential impacts include the contamination of sediments, impacts to benthic 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.

#### **Water Quality**

Water quality would be affected due to hydrocarbon contamination, which is described in terms of the biological effect concentrations. These are defined by the EMBA descriptions for each of entrained and dissolved hydrocarbon fates and their predicted extent (refer to Table 6-10). Furthermore, water quality is predicted to have minor long-term or significant short-term hydrocarbon contamination above background or national and international quality standards.

It is likely that water quality will be reduced at the release location of the spill; however, such impacts to water quality would be temporary and localised in nature due to the rapid dispersion and weathering of marine diesel. The potential impact is therefore expected to be low.

#### **Marine sediment quality**

There is a small chance that entrained hydrocarbons (at or above the defined thresholds) may contact submerged shoals and banks in the region (refer to Table 6-10). Such hydrocarbon contact may lead to reduced marine sediment quality by several processes, such as adherence to sediment and deposition on seabed habitat.



<p><b>Protected Areas (including AMPs)</b></p> <p>The quantitative spill risk assessment results indicate the open water environment protected within the receptors listed in Table 6-10 are likely to be affected by entrained and dissolved hydrocarbons, resulting in the actual or perceived contamination of protected areas. Entrained and dissolved hydrocarbons at or exceeding impact thresholds have a low probability of contacting the outer boundaries of the Montebello AMP which is located 86km south-west of the Operational Area. The Glomar Shoals also has a low probability of being affected by dissolved hydrocarbons. Surface and entrained hydrocarbons are mostly only predicted within the deep open waters of these protected areas, with minimal overlap and no contact to seabed habitats or to shorelines above the ecological impact threshold values. Potential impacts to water quality and the natural values (e.g. mobile protected species) in these areas would be temporary and localised in nature due to the rapid dispersion and weathering of the marine diesel, as described above.</p> <p>Additionally, such hydrocarbon contact may alter stakeholder understanding or perception of the protected marine environment, given these represent areas largely unaffected by anthropogenic influences and contain biologically diverse environments.</p>
<p><b>Summary of potential impacts to socio-economic and cultural values</b></p>
<p><b>Fisheries – Commercial</b></p> <p>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 <i>et al.</i>, 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 <i>et al.</i>, 2002). A 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. Such measures would likely be in place for less than a week and would not result in widespread or long-term impacts to fishing activities.</p> <p>A marine diesel spill is considered unlikely to cause significant direct impacts on the target species fished by Commonwealth and State fisheries (see Section 4.10.1) which overlap with the EMBA. The fisheries that operate within the EMBA predominantly target demersal fish species (demersal finfish and crustaceans) that inhabit waters in the range of &gt;60 m to 200 m depth, or pelagic species which are highly mobile. In the unlikely event of a marine diesel spill, there is the potential for the targeted fish species to be exposed to entrained hydrocarbons in the water column. However, the potential for direct impact would be reduced, as target species such as snapper are likely to avoid the surface water layer underneath oil slicks. Demersal species (such as finfish) have limited mobility and, therefore, will not be able to easily move away from a spill. Mortality and sub-lethal effects may impact demersal fish located close to the release location.</p> <p>A marine diesel spill is expected to only result in negligible impacts, considering that hydrocarbons are confined to the upper layers of the water column. Visible surface hydrocarbons at or exceeding 1 g/m<sup>2</sup> may also occur up to 77 km from the release site, which may result in fouling of fishing gear and a perception of impacts to fish stocks by fisheries stakeholders and the public. A loss of marine diesel resulting from a vessel collision is unlikely to cause significant direct impacts on the target species of Commonwealth or State commercial fisheries within the defined EMBA.</p>
<p><b>Fisheries – Traditional</b></p> <p>No designated traditional fisheries have been identified to occur within the EMBA; however, traditional fishing has historically occurred at Montebello Islands. It is recognised that Indigenous communities may fish in the shallow coastal and nearshore waters; however, very little impacts to these environments are predicted to occur.</p>
<p><b>Tourism and Recreational Activities</b></p> <p>Limited recreational fishing and tourism activities occur in the offshore waters of the EMBA. The Montebello Islands are the closest location for tourism activities, located within the EMBA, and occasional recreational fishing occurs at Glomar Shoals and Rankin Bank, both within the EMBA. A loss of marine diesel from a vessel collision may lead to exclusion of marine nature-based tourist activities, resulting in a loss of revenue for a small number of operators. Recreational fishing activities may experience operational inconvenience as vessels may be required to deviate course to avoid the affected area or seek alternative fishing grounds.</p>
<p><b>Offshore Oil and Gas Activities</b></p> <p>Several oil and gas facilities occur in the EMBA (refer to Section 4.10.5). In the highly unlikely event of a major spill, surface hydrocarbons may affect production from existing petroleum facilities (platforms and FPSOs). 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 tankers approaching facilities on the North West Shelf. The impact on ongoing operations of</p>

regional production facilities would be determined by the nature and scale of the spill and metocean conditions. Furthermore, decisions about the operation of production facilities in the event of a spill would be based primarily on health and safety considerations.

### Commercial Shipping

Low-density traffic is expected to occur in the EMBA (refer to Section 4.10.4). A loss of marine diesel from a vessel collision may lead to exclusion of commercial shipping, resulting in operational inconvenience as vessels may be required to deviate course from intended routes.

### Cultural Values and Heritage

Through consultation and review of available literature (Section 4.9.4.1), Woodside understands that sea country, including marine ecosystems and species, archaeological heritage and heritage sites, marine parks, as well as intangible cultural heritage may be impacted in the event of a hydrocarbon release from a vessel collision. Cultural features and heritage values that have the potential to be impacted include:

- **Marine ecosystems and species:** Marine ecosystems may hold both cultural and environmental value to Traditional Custodians, with cultural and environmental values intrinsically linked (DCCEE 2023, MAC 2021 as cited in Woodside 2023d). 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. EMBA is known to include habitat for culturally important species such as whales, whale sharks, turtles, dugongs, plankton, and seagrass (Section 4.8 and 4.9). Murujuga Traditional Custodians have previously provided feedback that culturally significant species such as turtles and squid are traditionally fished for within specific areas of the EMBA. Maintaining species populations is vital to ensure that this cultural practice can continue. In the event of a worst-case release of MDO individual fauna may be directly impacted or impacted through temporary degradation of their habitats, however, no population level impacts are expected. Impacts are not expected to occur to ecologically 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. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.
- **Heritage Sites:** For this EP, a search of DPLH's Aboriginal Cultural Heritage Inquiry System was undertaken, which showed no Registered Aboriginal Sites or Other Heritage Places in the Operational Area or EMBA (Section 4.9). Any oil that reaches the shoreline has potential to impact on registered sites and indigenous heritage places along the coastline. In the unlikely event of a hydrocarbon release, shoreline accumulation may affect sensitive artefacts or areas, which could damage their heritage value. However, due to the low maximum concentrations predicted to reach any marine park, it is expected their values will be maintained.
- **Marine Parks:** The EMBA overlaps one AMP under the North-West Marine Parks Network Management Plan 2018 (Montebello AMP located 86 km south-west of Operational Area). Management Plans for this park protect indigenous heritage and culture under the *Aboriginal Heritage Act 1972* (Section 4.9). Due to the low maximum concentrations predicted to reach any marine park, it is expected their values will be maintained.
- **Intangible cultural heritage:** Impacts may occur to intangible cultural values such as songlines; creation/dreaming sites, sacred sites, ancestral beings; cultural obligations to care for Country; knowledge of Country/customary law and transfer of knowledge to Country; Access to Country; kinship systems and totemic species, resource collection. 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). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes result 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). In the unlikely event of a hydrocarbon release, intangible cultural heritage values may be impacted.

A search of the Australian National Shipwreck Database (Section 4.9.7), which records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics and other underwater cultural heritage) in Australian waters, indicated there are no underwater Cultural Heritage sites within 10 km of the Operational Area.

### Summary of Potential Impacts to Environmental Values

In the unlikely event of an unplanned hydrocarbon release to the marine environment due to vessel collision, combined with the adopted controls, it is considered that any potential impact to water quality would be minor, localised and temporary in nature in comparison to background levels and/or international standards, with localised and temporary impacts to habitats, populations and shipping/fishing concerns.

The highest environmental consequence identified for the assessment of an unplanned hydrocarbon release to the marine environment due to vessel collision, as classified in Table 2-2, is defined as D, which equates to minor, short-term impact (1–2 years) on species, habitat (but not affecting ecosystems), physical or biological attributes.



Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>30</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Establishment of a 500 m temporary exclusion zone around MCV and communicated to marine users.	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of a collision with a third-party vessel	Controls based on legislative requirements – must be adopted.	Yes <b>C 1.2</b>
Contract vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> <li>• Marine Order 21 (Safety of navigation and emergency procedures) 2016</li> <li>• Marine Order 27 (Safety of navigation and radio equipment) 2016</li> <li>• Marine Order 30 (Prevention of Collisions) 2016.</li> </ul>	F: Yes. CS: Minimal cost. Standard practice.	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.	Controls based on legislative requirements – must be adopted.	Yes <b>C 8.1</b>
In the event of a spill, emergency response activities implemented in accordance with the OPEP (per Table 7-8).	F: Yes. CS: Costs associated with implementing response strategies, vary dependant on nature and scale of spill event. Standard practice.	This control would not reduce the likelihood, but response activities may reduce the consequence.	Benefits outweigh cost/sacrifice.	Yes <b>C 8.2</b>
Arrangements supporting the activities in the OPEP (per Table 7-8) will be tested to ensure the OPEP can be implemented as planned.	F: Yes. CS: Moderate costs associated with exercises. Standard practice.	Testing the OPEP activities would not reduce the likelihood, but response activities may reduce the consequence.	Benefits outweigh cost/sacrifice.	Yes <b>C 8.3</b>
<b>Good practice</b>				
AHO notified of activities and movements no less than four working weeks prior to scheduled activity commencement.	F: Yes. CS: Minimal cost. Standard practice.	Notification to AHO will enable them to generate navigation warnings (Maritime Safety Information Notifications (MSIN) and Notice to Mariners (NTM) (including	Benefits outweigh cost/sacrifice. Control is also Standard Practice.	Yes <b>C 1.3</b>

### 30 Qualitative measure

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>30</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		AUSCOAST warnings where relevant)).		
Notify ARC of vessel activities and movements 24 to 48 hours before the scheduled activity commencement date, and at the end of activities.	F: Yes. CS: Minimal cost. Standard practice.	Communication of the Petroleum Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of a collision with a third-party vessel occurring.	Benefits outweigh cost/sacrifice. Control is also Standard Practice.	Yes <b>C 1.4</b>
Notify relevant government departments, fishing industry representative bodies and licence holders of activities three months prior to commencement and upon completion of activities.	F: Yes. CS: Minimal cost. Standard practice.	Communication of the Petroleum Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interference with other marine users.	Benefits outweigh cost/sacrifice. Control is also Standard Practice.	Yes <b>C 1.5</b>
Notify AHO and ARC of any extended delay in the timing of the Petroleum Activity.	F: Yes CS: Minimal cost. Standard practice.	Communicating the Petroleum Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interfering with other marine users.	Benefits outweigh cost/sacrifice. Control is also Standard Practice.	Yes <b>C 1.6</b>
Develop SIMOPS management plan where multiple campaigns occur concurrently within the Operational Area.	F: Yes. CS: Minimal cost. Standard practice.	SIMOPs plans between Woodside operated vessels in the Operational Area will reduce the likelihood of a collision occurring.	Benefits outweigh cost/sacrifice.	Yes <b>C 8.4</b>
Mitigation: Oil spill response.	Refer to Appendix G.			
Professional judgement – Eliminate				
Eliminate use of vessels.	F: No. The use of vessels is required to conduct the Petroleum Activity.  CS: Not considered – control not feasible.	Not considered – control not feasible.	Not considered – control not feasible.	No
Professional judgement – Substitute				
No additional controls identified.				
Professional judgement – Engineered Solution				
No additional controls identified.				
ALARP statement:				

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>30</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with an unplanned loss of hydrocarbon as a result of vessel collision. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<p><b>Acceptability statement:</b></p> <p>The impact/risk assessment has determined that, given the adopted controls, an unlikely accidental hydrocarbon release as a result of a vessel collision represents a moderate current risk rating and may result in minor, short-term impact (1-2 years) on species, habitat (but not affecting ecosystems function), physical or biological attributes and communities. BIAs overlapping the Operational Area include whale shark foraging, and wedge-tailed shearwater breeding. Relevant recovery plans and conservation advice have been considered during the impact assessment, and the Petroleum Activity is not considered to be inconsistent with the overall recovery objectives and actions of these recovery plans and conservation advice.</p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.</p>

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 11</b> No release of hydrocarbons to the marine environment due to a vessel collision associated with the Petroleum Activities Program.	<b>C 1.2</b> See Section 6.7.1	<b>PS 1.2.1</b> See Section 6.7.1	<b>MC 1.2.1</b> See Section 6.7.1
	<b>C 8.1</b> Contract vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> <li>Marine Order 21 (Safety of navigation and emergency procedures) 2016</li> <li>Marine Order 27 (Safety of navigation and radio equipment) 2016</li> </ul>	<b>C 8.1.1</b> F: Yes. CS: Minimal cost. Standard practice.	<b>MC 1.2.2</b> Consultation records demonstrate that AHO has been notified before commencing the activity to allow generation of navigation warnings (MSIN and NTM (including AUSCOAST warnings where relevant)), which communicate safety exclusion zones to marine users.
			<b>MC 8.1.1</b> 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.

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EPOs, EPS and MC			
EPO	Controls	PS	MC
	Marine Order 30 (Prevention of Collisions) 2016.		
	<b>C 8.2</b> In the event of a spill, emergency response activities implemented in accordance with the OPEP (per Table 7-8).	<b>PS 8.2.1</b> In the event of a spill the OPEP (per Table 7-8) requirements are implemented.	<b>MC 8.2.1</b> Completed incident documentation.
	<b>C 8.3</b> Arrangements supporting the activities in the OPEP (per Table 7-8) will be tested to ensure the OPEP can be implemented as planned.	<b>PS 8.3.1</b> Exercises/tests will be conducted in alignment with the frequency identified in Table 7-10: Testing of response capability.	<b>MC 8.3.1</b> Testing of arrangement records confirm that emergency response capability has been maintained.
		<b>PS 8.3.2</b> Woodside's procedure demonstrates a minimum level of trained personnel, for core roles in the OPEP (per Table 7-8), are maintained.	<b>MC 8.3.2</b> Emergency Management dashboard confirms that minimum level of personnel trained for core OPEP roles are available.
	<b>C 1.3</b> See Section 6.7.1	<b>PS 1.3.1</b> See Section 6.7.1	<b>MC 1.3.1</b> See Section 6.7.1
	<b>C 1.4</b> See Section 6.7.1	<b>PS 1.4.1</b> See Section 6.7.1	<b>MC 1.4.1</b> See Section 6.7.1
	<b>C 1.5</b> See Section 6.7.1	<b>PS 1.5.1</b> See Section 6.7.1	<b>MC 1.5.1</b> See Section 6.7.1
	<b>C 1.6</b> See Section 6.7.1	<b>PS 1.6.1</b> See Section 6.7.1	<b>MC 1.6.1</b> See Section 6.7.1
	<b>C 8.4</b> SIMOPS plan will be developed if more than one Woodside contracted vessel is operating in the same Operational Area at any one time.	<b>PS 8.4.1</b> SIMOPS outline operating procedures when more than one Woodside contracted vessel is operating in the same Operational Area.	<b>MC 8.4.1</b> SIMOPS plan developed and in place for circumstances where more than one Woodside vessel is operating in the same Operational Area.
Detailed preparedness and response performance outcomes, standards and measurement criteria for the Petroleum Activity are presented in Appendix G.			

### 6.8.3 Unplanned Hydrocarbon or Chemical Release: Hydrocarbon Release during Bunkering/Refuelling

Context													
Project Vessels – Section 3.6			Physical Environment – Section 4.4 Protected Species – Section 4.6				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Loss of hydrocarbons (diesel/jet fuel) to marine environment from bunkering/refuelling		X			X		A	E	2	M	LCS GP PJ	Broadly Acceptable	EPO 12
Description of source of impact													
<p>Bunkering of marine diesel to specialised pipe removal vessels/offshore support vessels is planned to occur in the Operational Area. Additionally, refuelling of helicopters using aviation jet fuel may occur onboard the project vessels. Other fuel transfers that may occur within the Operational Area include refuelling of cranes or other equipment as required.</p> <p>Three credible scenarios for the loss of containment of marine diesel during bunkering operations were identified:</p> <ul style="list-style-type: none"><li>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 200 L, based on the likely volume of a bulk transfer hose (assuming a failure of the dry break coupling and complete loss of hose volume).</li><li>Partial or total failure of a bulk transfer hose or fittings during bunkering, combined with a failure in procedure to shut off fuel pumps, for a period of up to five minutes, could result in about 24 m³ marine diesel loss to the deck and/or into the marine environment.</li><li>Partial or total failure of a bulk transfer hose or fittings during helicopter refuelling could spill aviation jet fuel to the helicopter deck and/or into the marine environment. All helicopter refuelling activities are closely supervised and leaks on the helideck are considered to be easily detectable. In the event of a leak, transfer would cease immediately. The credible volume of such a release during helicopter refuelling would be in the order of &lt;100 L.</li></ul> <p>Given the limited volume of the potential release and offshore location no modelling has been undertaken as it is significantly less than 500 m³ marine diesel scenario presented in Section 6.8.2. Given the physical and chemical similarities, and the relatively small credible spill volumes, marine diesel is considered to be a suitable substitute for aviation jet fuel for the purposes of this environmental risk assessment. Aviation jet fuel would behave similarly to diesel and have similar impacts and, considering small size of spill volumes likely to be contained on the helideck, this has not been modelled.</p> <p><b>Likelihood</b></p> <p>The likelihood of 2 'Unlikely' corresponds to 'Has occurred many times in the industry but not at Woodside'.</p> <p>A search of the Woodside spill records indicates that, while there have been smaller releases (less than 30 L) associated with bunkering, there have been no recorded partial or total failures of bulk transfer hose or fittings during bunkering, combined with a failure in procedure to shut off fuel pumps for a period of up to five minutes, resulting in the worst-case credible scenario of an 24 m³ loss of diesel.</p>													

IOTPF Limited (IOTPF) (2018) data reports that for tanker operations during 1970 to 2017, 7% of small (more than seven tonnes) spills occurred during bunkering and 2% of medium (seven to 700 tonnes) spills. While this data is from the oil tanker industry, it has been used as an indicator of the potential for spills associated with bunkering activities. A risk assessment by AMSA of oil spills in Australian ports and waters (Det Norske Veritas, 2011) identifies transfer spills as a risk.

#### Hydrocarbon Characteristics

Refer to Section 6.8.1 for a description of the characteristics of marine diesel, including detail on the predicted fate and weathering of a spill to the marine environment.

### Impact assessment

#### Environmental value(s) potentially impacted

A spill at the surface as a result of bunkering activities is likely to be localised with limited potential contact with sensitive receptor locations. Based on the modelling presented in Section 6.8.2 for a larger spill of diesel (500 m<sup>3</sup>) any release of diesel during bunkering activities is predicted to be restricted to open offshore waters.

Therefore, it is considered that there is no potential for contact with sensitive receptor locations above surface (10 g/m<sup>2</sup>), entrained (100 ppb) or dissolved (50 ppb) threshold concentrations from a 24 m<sup>3</sup> spill of marine diesel within the Operational Area.

The potential biological and ecological impacts associated with a much larger hydrocarbon spill is presented in Section 6.8.2; further detail on impacts specific to a spill of marine diesel from a bunkering loss are provided below.

The biological consequences of such a small volume spill on identified open water sensitive receptors relate to the potential for slight, short-term impacts to megafauna, plankton and fish populations (surface and water column biota) that are within the spill-affected area. No impacts to commercial fisheries are expected. Refer to Section 6.8.2 for the detailed potential impacts of unplanned hydrocarbon release to the marine environment from vessel collision. However, the extent of the EMBA associated with a marine diesel spill from loss during bunkering will be much reduced in terms of spatial and temporal scales; hence, potential impacts from bunkering are considered slight.

### Demonstration of ALARP

Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>31</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Marine Order 91 – oil (as relevant to vessel class) requirements, which includes mandatory measures for the processing of oily water prior to discharge: <ul style="list-style-type: none"> <li>Oil Record Book</li> <li>Valid International Oil Pollution Prevention (IOPP) Certificate</li> <li>Vessel specific SOPEP.</li> </ul>	F: Yes. CS: Minimal cost. Standard practice.	By ensuring a SOPEP is in place for the vessel, the likelihood of a spill entering the marine environment is reduced. Although no significant reduction in consequence could result, the overall risk is reduced.	Controls based on legislative requirements – must be adopted.	Yes <b>C 6.3</b>
<b>Good practice</b>				
Bunkering equipment controls: <ul style="list-style-type: none"> <li>All hoses that have a potential environmental risk following damage</li> </ul>	F: Yes. CS: Minimal cost. Standard practice.	Reduces the likelihood of a spill occurring. Although no significant reduction in consequence could	Benefits outweigh cost/sacrifice.	Yes <b>C 9.1</b>

<sup>31</sup> Qualitative measure

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>31</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<p>or failure shall be linked to the project vessel's preventative maintenance system.</p> <ul style="list-style-type: none"> <li>All bulk transfer hoses shall be tested for integrity before use (tested in accordance with Original Equipment Manufacturer recommendations) and re-certified annually as a minimum.</li> <li>There shall be dry-break couplings and flotation on fuel hoses.</li> <li>There shall be an adequate number of appropriately stocked, located and maintained spill kits.</li> </ul>		result, the overall risk is reduced.		
<p>Contractor procedures include requirements to be implemented during bunkering/refuelling operations, including:</p> <ul style="list-style-type: none"> <li>A completed PTW and/or Job Safety Assessment (JSA) shall be implemented for the hydrocarbon bunkering/refuelling operation.</li> <li>Visual monitoring of Gauges, hoses, fittings and the sea surface during the operation.</li> <li>Hose checks prior to commencement</li> <li>Bunkering/refuelling will commence in daylight hours. If the transfer is to continue into darkness, the JSA risk assessment must consider lighting and the ability to determine</li> </ul>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>Reduces the likelihood of a spill occurring. Although no significant reduction in consequence could result, the overall risk is reduced.</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes <b>C 9.2</b></p>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>31</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
if a spill has occurred. <ul style="list-style-type: none"><li>Hydrocarbons shall not be transferred in marginal weather conditions.</li></ul>				
Mitigation: Oil spill response.	Refer to Appendix G.			
Professional judgement – Eliminate				
No refuelling of helicopter on project vessel.	F: No. Given the distance of the Operational Area from the airports suitable for helicopter operations, and the endurance of available helicopters, eliminating helicopter refuelling is not feasible. Helicopter flights cannot be eliminated and may be required in emergency situations.  CS: Not assessed, control cannot feasibly be implemented.	Not considered, control not feasible.	Not considered, control not feasible.	No
No refuelling of project vessels in Operational Area. All project vessels brought into port to refuel.	F: No. Does not eliminate the fuel transfer risk. It is not operationally practical to transit the project vessels back to port for refuelling, based on the frequency of the refuelling requirements and distance from the nearest port (Dampier approximately 123 km south of Operational Area).  CS: Significant due to schedule delay and vessel transit costs and day rates.	Eliminates the risk in the Operational Area. However, moves risk to another location. Therefore, no overall benefit.	Disproportionate. The cost/ sacrifice outweighs the benefit gained.	No
Professional judgement – Substitute				
No additional controls identified.				
Professional judgement – Engineered Solution				
No additional controls identified.				



Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>31</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<p><b>ALARP statement:</b></p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with an accidental hydrocarbon or chemical release during bunkering/refuelling or transfer, storage and use. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.</p>				

Demonstration of acceptability
<p><b>Acceptability statement:</b></p> <p>The risk assessment has determined that, given the adopted controls, loss of hydrocarbons to the marine environment during bunkering represents an unlikely moderate risk rating may result in slight, short-term impacts (&lt;1 year) on species, habitat (but not affecting ecosystems function) or biological attributes. Relevant management plans and species recovery plans and conservation advice have been considered during the impact assessment and given the adopted controls, the Petroleum Activity is not considered to be inconsistent with the overall objectives and actions of these plans.</p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.</p>

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 12</b> No release of hydrocarbons or chemicals to the marine environment from vessels during bunkering activities	<b>C 6.3</b> See Section 6.7.6	<b>PS 6.3.1</b> See Section 6.7.6	<b>MC 6.3.1</b> See Section 6.7.6
	<b>C 9.1</b> Bunkering equipment controls: <ul style="list-style-type: none"> <li>All hoses that have a potential environmental risk following damage or failure shall be placed on the project vessel's preventative maintenance system.</li> <li>All bulk transfer hoses shall be tested for integrity before use (tested in accordance with Original Equipment Manufacturer recommendations and re-certified annually as a minimum).</li> <li>There shall be dry-break couplings and flotation on fuel hoses.</li> </ul>	<b>PS 9.1</b> Equipment identified as having integrity damage is replaced prior to failure.	<b>MC 9.1.1</b> Records confirm the bunkering equipment is subject to systematic integrity checks
		<b>PS 9.1.2</b> Bunkering equipment controls employed during bunkering.	<b>MC 9.1.2</b> Records confirm presence of dry break of couplings and flotation on fuel hoses.
		<b>PS 9.1.3</b> Spill kits available in the event of a spill during bunkering.	<b>MC 9.1.3</b> Records confirm presence of spill kits.

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EPOs, EPS and MC			
EPO	Controls	PS	MC
	<ul style="list-style-type: none"> <li>There shall be an adequate number of appropriately stocked, located and maintained spill kits.</li> </ul>		
	<p><b>C 9.2</b> Contractor procedures include requirements to be implemented during bunkering/refuelling operations, including:</p> <ul style="list-style-type: none"> <li>Implement a completed PTW and/or JSA for the hydrocarbon bunkering/refuelling operation.</li> <li>Visually monitor gauges, hoses, fittings and the sea surface during the operation.</li> <li>Check hoses prior to commencement.</li> <li>Commence bunkering/refuelling in daylight hours. If the transfer is to continue into darkness, the JSA risk assessment must consider lighting and the ability to determine if a spill has occurred.</li> <li>Do not transfer hydrocarbons in marginal weather conditions.</li> </ul>	<p><b>PS 9.2.1</b> Comply with Contractor procedures for managing bunkering/helicopter operations.</p>	<p><b>MC 9.2.1</b> Records demonstrate bunkering/refuelling performed in accordance with contractor bunkering procedures.</p>
Detailed oil spill preparedness and response performance outcomes, standards and MC for the Petroleum Activity are presented in Appendix G.			

## 6.8.4 Unplanned Discharges: Hydrocarbon and chemical spills from Vessel and Subsea Activities

Context													
Project Fluids – Section 7.2.1 Project Vessels – Section 3.6		Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6					Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Accidental discharge of hydrocarbons/ chemicals from project vessels deck activities and equipment (e.g. cranes) including subsea ROV hydraulic leaks within the Operational Area		X		X	X		A	E	2	M	LCS GP PJ	Broadly Acceptable	EPO 13, 14
Description of source of impact													
<b>Vessel and ROV Operations</b> Deck spills can result from spills from stored hydrocarbons/chemicals or equipment. Project vessels typically store hydrocarbon/chemicals in various volumes (20 L, 205 L; up to approximately 4000–6000 L). Storage areas are typically set up with effective primary and secondary bunding to contain any deck spills. Releases from equipment are predominantly from the failure of hydraulic hoses, which can either be located within bunded areas or outside of bunded or deck areas (e.g. over water on cranes). Chemicals that will be used and may be accidentally released include: <ul style="list-style-type: none"><li>non process chemicals (maintenance and cleaning chemicals)</li><li>non process hydrocarbons - i.e. hydraulic fluids used in machinery (including cranes, winches, ROVs), small volumes of fuel</li></ul>													
<b>Non-Process Chemicals</b> Non-process chemicals, such as wash chemicals, cleaning chemicals, maintenance and solvents, are generally held onboard in low quantities (typically <50 L containers) and are located within chemical cabinets or bunded storage areas on the project vessels. Non-process chemical spills may result from human error or damage to a chemical container during handling. Spills are generally captured by the drain system and routed to a holding tank for treatment or disposal onshore. In the event that a spill is not contained on deck or within a bunded area, there would be a release to the marine environment of up to 50 L.													
<b>Non-Process Hydrocarbons</b> Woodside’s operational experience demonstrates that spills are most likely to originate from hydraulic hoses and have been less than 100 L, with an average volume <10 L. Non-process hydrocarbons (hydraulic fluids) are used in hydraulic-powered machinery, such as winches, cranes and ROVs, and are hydrocarbon-based with added chemical component additives. Unplanned discharges are predominantly due to failure of hydraulic hoses or minor leaks from process components, or spills during periodic refuelling of hydraulic hoses. Spills or leaks from hydraulic hoses are usually very small volumes (~1 L) and are typically contained within a bunded or drained area under the equipment mounted on deck. These small on-deck spills are unlikely to reach the marine environment. A burst hydraulic hose on an extended crane could potentially result in hydraulic fluid being sprayed in a fine jet out over the water. However, this would only result in a small volume (~25 L) being released, due to the small capacity of hydraulic hoses.													

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Subsea spills can result from a loss of containment of fluids from subsea equipment including ROVs. The 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.

Hydraulic fluids are medium oils of light to moderate viscosity. They have a relatively rapid spreading rate and will dissipate quickly, particularly in high sea states. Lubricating oils may also be held onboard, typically stored with the non process chemicals and held in low quantities. These hydrocarbons are more viscous, so in the event of an unplanned discharge, the spreading rate of a slick of these oils would be slightly slower.

Woodside's operational experience demonstrates that spills are most likely to originate from hydraulic hoses and have been less than 100 L, with an average volume <10 L.

### Impact assessment

#### Environmental value(s) potentially impacted

##### Water Quality

##### Change in Water Quality

Unplanned discharges of non-process chemicals and hydrocarbons from project vessels will decrease the water quality in the immediate vicinity of the release; however, the impacts are expected to be temporary and very localised due to dispersion and dilution in the open ocean environment.

Given the occasional nature of unplanned chemical discharge, the small volumes, and the offshore location of the Operational Area, the change to water quality resulting from unplanned discharge of chemicals will not be substantial. The consequence of a release of hydrocarbons/chemicals on water quality assessed as having no lasting effect.

##### Marine Fauna

##### Injury or Mortality to Marine Fauna

As a result of a change in water quality, further impacts to receptors may occur, which include injury or mortality to marine fauna resulting from exposure to toxins in the released chemicals/hydrocarbons. Given that surface discharges are rapidly dispersed, and subsea discharges (from ROVs) would be of very small volumes, potential impacts would be highly localised and temporary.

The potential biological and ecological impacts associated with hydrocarbon spills are presented in 6.8.2 to 6.8.3 and impacts from minor chemical spills are described in Section 6.8.4. A minor loss of hydrocarbons from deck and subsea spills will be much reduced in terms of spatial and temporal scales from impacts described in Sections 6.8.2 to 6.8.3. Given the small area of the potential spill and the dilution and weathering of any spill, the likelihood of ecological impacts to marine fauna (including protected species), other communities and habitats will be limited to no lasting effect and restricted to individual animals.

### Demonstration of ALARP

Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>32</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Marine Order 91 – oil (as relevant to vessel class) requirements, which includes mandatory measures for the processing of oily water prior to discharge: <ul style="list-style-type: none"> <li>Oil Record Book</li> <li>Valid International Oil Pollution Prevention (IOPP) Certificate</li> </ul>	F: Yes CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of an unplanned release. The consequence is unchanged.	Controls based on legislative requirements – must be adopted.	Yes <b>C 6.3</b>

<sup>32</sup> Qualitative measure

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>32</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
Vessel specific SOPEP.				
<b>Good practice</b>				
Fluids and additives planned to be used and intended or likely to be discharged to the marine environment will have an environmental assessment completed before use.	F: Yes CS: Minimal cost. Standard practice	Environmental assessment of chemicals will reduce the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability. Planned discharges are required for the safe execution of activities and therefore no reduction in likelihood can occur.	Benefits outweigh sacrifice	Yes <b>C 7.1</b>
Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment.	Controls based on legislative requirements – must be adopted.	Yes <b>C 10.1</b>
Spill kits positioned in high-risk locations around the project vessels (near potential spill points such as transfer stations).	F: Yes CS: Minimal cost. Standard practice	Reduces the likelihood of a deck spill from entering the marine environment. The consequence is unchanged.	Benefits outweigh sacrifice	Yes <b>C 10.2</b>
Project vessels have self-containing hydraulic oil drip tray management system.	F: Yes CS: Minimal cost. Standard practice	Requirements for self-containing hydraulic oil drip tray management system would reduce the likelihood of contaminants being discharged to the marine environment. No change in consequence would occur.	Benefits outweigh sacrifice	Yes <b>C 10.3</b>
<b>Professional judgement – Eliminate</b>				
No additional controls identified.				
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
Below-deck storage of all hydrocarbons and chemicals.	F: No. During operations there is a need to keep small volumes near activities and within equipment	Not considered, control not feasible.	Not considered, control not feasible.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>32</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	requiring use of hydrocarbons and chemicals and can result in increased risk of leaks from transfers via hose or smaller containers. CS: Not considered, control not feasible.			
A reduction in the volumes of chemicals and hydrocarbons stored onboard the vessels.	F: Yes. Increases the risks associated with transportation and lifting operations. CS: Volumes of required chemicals for survey activities are already very small in scale. Onboard storage is less risky, costly and time consuming than associated transport and lifting operations from a supply vessel to project vessel.	No reduction in likelihood or consequence since chemicals will still be required to enable activities to occur.	Disproportionate. The cost/sacrifice outweigh the benefit gained.	No
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with potential unplanned deck and subsea spills described above. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact assessment has determined that, given the adopted controls, an unplanned minor discharge of hydrocarbons and chemicals as a result of minor deck and subsea spills represents a low risk that may result in negligible, localised impacts (<1 month) to species, habitat (but not affecting ecosystem function), physical or biological attributes. BIAs within the Operational Area includes whale shark foraging, and wedge-tailed shearwater breeding. However, these species are not expected to be impacted. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 13</b> Undertake the Petroleum Activity in a manner that does not result in a substantial change in water quality which may adversely impact on biodiversity, ecological integrity, social amenity or human health.	<b>C 6.3</b> See Section 6.7.6	<b>PS 6.3.1</b> See Section 6.7.6	<b>MC 6.3.1</b> See Section 6.7.6
	<b>C 7.1</b> See Section 6.7.7	<b>PS 7.1.1</b> See Section 6.7.7	<b>MC 7.1.1</b> See Section 6.7.7
	<b>C 10.1</b> Liquid chemical and fuel storage areas are banded or secondarily contained when they are not being handled/ moved temporarily.	<b>PS 10.1.1</b> Failure of primary containment in storage areas does not result in loss to the marine environment.	<b>MC 10.1.1</b> Environmental inspection records confirm all liquid chemicals and fuel are stored in banded/ secondarily contained areas when not being handled/moved temporarily.
	<b>C 10.2</b> Spill kits positioned in high-risk locations around the rig (near potential spill points such as transfer stations).	<b>PS 10.2.1</b> Spill kits to be available for use to clean up deck spills.	<b>MC 10.2.1</b> Records confirms spill kits are present, maintained and suitably stocked.
	<b>C 10.3</b> Project vessels have self-containing hydraulic oil drip tray management system.	<b>PS 10.3.1</b> Contain any on-deck spills of hydraulic oil.	<b>MC 10.3.1</b> Records demonstrate project vessels are equipped with a self-containing hydraulic oil drip tray management system.
Detailed preparedness and response performance outcomes, standards and measurement criteria for the Petroleum Activity are present in Appendix G.			

### 6.8.5 Unplanned Discharges: Loss of Solid Hazardous and Non-hazardous Solid Wastes/Equipment (including dropped objects)

Context													
Project Vessels – Section 3.6 Removal and Recovery of Infrastructure – Section 3.9			Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6 Socio-Economic Environment – Section 4.10				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
		X		X	X		A	F	2	L	LCS GP	Broadly Acceptable	EPO 15
	Accidental loss of hazardous or non-hazardous wastes to the marine environment (excludes sewage, grey water, putrescible waste and bilge water)												
Dropped objects resulting in the disturbance of benthic habitat	X			X		X							
Inappropriate disposal of waste generated from infrastructure removal		X	X	X	X	X							
Description of source of impact													
<b>Solid wastes</b> The project vessels will generate a variety of solid wastes, including packaging and domestic wastes such as aluminium cans, bottles, paper and cardboard. Hence, there is the potential for solid wastes to be lost overboard to the marine environment. Equipment that has been recorded as being lost on previous campaigns has primarily been windblown or dropped overboard and has included things such as personal protective equipment and small tools or materials. These events have occurred during backloading activities, periods of adverse weather and incorrect waste storage.													
<b>Dropped objects</b> There is the potential for objects to be dropped overboard from project vessels to the marine environment. Objects that have been dropped during previous offshore activities include small numbers of personal protective gear (e.g. glasses, gloves, hard hats), small tools (e.g. spanners), hardware fixtures (e.g. riser hose clamp) and drill equipment (e.g. drill pipe); however, there is also potential for larger equipment to be dropped during the activity, particularly during recovery of infrastructure from the seabed. The spatial extent in which dropped objects can occur is restricted to the Operational Area. The overall footprint of disturbance from a dropped object (including dropped infrastructure) is estimated to be minimal and localised (less than 5 m <sup>2</sup> ).													
<b>Inappropriate disposal of waste from infrastructure removal</b> Infrastructure recovery will also generate industrial waste mainly comprising of steel and plastic (Section 3.9.1) that will require onshore handling and disposal at licensed facilities. Wastes generated from decommissioning of subsea infrastructure could contribute to the increasing pressure on local landfills if not managed appropriately through consideration of the waste hierarchy and alternate means of disposal to landfill. There is also the potential for													

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recovered infrastructure to be incorrectly classified and disposed of inappropriately leading to contamination of waste streams.

Recovered subsea infrastructure will be removed from the title area and disposed of in accordance with the waste management plan developed during the contracting phase. The waste management plan will address the waste management hierarchy and disposal methods and appropriate transfer of ownership of recovered equipment. The waste management plan will include auditing and compliance checks to ensure the requirements of the waste management hierarchy shown in Figure 7-2 are met. Refer to the subsea infrastructure waste management section of the implementation strategy for further information (Section 7.2.5).

Treatment of the subsea infrastructure potentially involves decontamination (e.g., residual contaminants deposited during production) at an onshore location. If treatment is successful, the subsea infrastructure can be recycled and disposed of. Investigations of potential contamination within the Angel subsea infrastructure will be performed prior to the activity and will inform the waste management plan and waste contractor selection.

## Impact assessment

### *Environmental value(s) potentially impacted*

#### **Solid Wastes**

The potential impacts of solid wastes accidentally discharged to the marine environment include direct pollution and contamination of the environment and secondary impacts relating to potential contact of marine fauna with wastes. The temporary or permanent loss of 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 that could occur, and species present. Given this, impacts will have no lasting effect on any species or water quality.

Hazardous solid wastes such as paint cans, oily rags, etc., can cause localised contamination of the water through a release of toxins and chemicals. Given the likely small volumes of any unplanned solid waste discharge, and the occasional nature of the event, these would result in temporary and highly localised changes to the water quality.

The unplanned discharge of solid wastes can result in mortality to fauna, either through contamination or physical injury depending on the nature of the waste. Marine fauna, including fish, seabirds and shorebirds, marine mammals and marine reptiles may be impacted through ingestion or entanglement of waste or through exposure to toxic chemicals. Ingestion or entanglement of marine fauna has the potential for physical harm which may limit feeding/foraging behaviours and thus can result in mortalities. Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris was listed as a key threatening process under the EPBC Act in August 2003 (Commonwealth of Australia, 2018). The Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia's coasts and oceans (Commonwealth of Australia, 2018) identifies EPBC Act-listed species for which there are scientifically documented adverse impacts resulting from marine debris. Marine turtles and seabirds in particular may be at risk from plastics which may cause entanglement or be mistaken for food (e.g. DoEE, 2018; Commonwealth of Australia, 2017) and ingested causing damage to internal tissues and potentially preventing feeding activities. In the worst instance this could have a lethal affect to an individual. Marine debris has been identified as threat in the Recovery Plan for Marine Turtles in Australia (2017–2027).

Impacts to species including fish, birds, marine mammals and marine reptiles from the unplanned discharge of solid waste is unlikely given low occurrence of unplanned discharges and the location of the activities at significant distance from sensitive habitats. Significant impacts are unlikely to occur at an individual level and will not occur at a population level, nor result in the decrease of the quality of the habitat such that the extent of these species is likely to decline.

While the threat abatement plan for impacts of marine debris on vertebrate marine life does not list explicit management actions for non-related industries (Commonwealth of Australia, 2018) management controls will reduce the risk of unplanned discharge of solid waste.

The temporary or permanent loss of waste materials into the marine environment will have no lasting effect on any species or water quality, based on the types, size and frequency of wastes that could occur.

#### **Dropped objects**

In the unlikely event of loss of an object being dropped into the marine environment, potential environmental effects would be limited to localised physical impacts on benthic communities. In most cases, objects will be able to be recovered and therefore these impacts will also be temporary in nature. However, there may be instances where objects are unable to be recovered due to health and safety, operational constraints or other factors such as the difficulty of recovering dropped objects at depth. When dropped objects are unable to be recovered, the impact will continue to be localised but would also be long-term.

The temporary or permanent loss of dropped objects into the marine environment is likely to result in a localised impact only, as the benthic communities associated with the Operational Area are of low sensitivity and are broadly represented throughout the NWMR. The Operational Area overlaps a small portion (0.01%) of the Glomar Shoals KEF. Dropped objects are not likely to impact the Glomar Shoals KEF as impacts are generally localised and lifting operations for removal of infrastructure will not overlap with the shoal feature within the KEF.

#### **Generation and disposal of waste from infrastructure removal**

Incorrect classification of waste can also result in inappropriate disposal of hazardous decommissioning wastes that could contaminate non-hazardous waste streams. This has the potential to result in contamination to air, soil and

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water during disposal. Incorrect disposal of hazardous waste onshore could result in negligible impacts to the environment on a near-field scale (i.e. limited to the disposal site/facility).

The increasing pressure on landfills globally is considered a significant environmental and social challenge and can result in indirect impacts to biodiversity, air and water pollution. Decommissioning wastes generated from the activity will result in a negligible contribution domestically and negligible contribution globally to increasing landfill capacity.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed at suitably licensed waste management facilities. Woodside will provide appropriate assurance over final disposal of recovered equipment.

#### **Cultural values and heritage**

As described in Section 4.9 the activity occurs 2 km from the Ancient Coastline KEF. Archaeological assessment of the area where seabed disturbance may occur by a qualified and experienced maritime archaeologist, including review of remote sensing data, has not identified any underwater cultural heritage that will be affected by the proposed activity (Nutley 2023). While no cultural features have been identified in the Operational Area, further archaeological studies will be undertaken prior to the activity commencing to understand any potential cultural features.

Consultation with Traditional Custodians for this EP has not identified any cultural features or heritage values that will be affected by the project activities. Any potential impacts to culturally significant marine ecosystems and species are not expected to have a lasting effect, as such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

<b>Demonstration of ALARP</b>				
<b>Control considered</b>	<b>Control feasibility (F) and cost/sacrifice (CS)<sup>33</sup></b>	<b>Benefit in impact/risk reduction</b>	<b>Proportionality</b>	<b>Control adopted</b>
<b>Legislation, codes and standards</b>				
Project vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> <li>Marine Order 94 (Marine pollution prevention – packaged harmful substances) 2014</li> <li>Marine Order 95 (Pollution prevention – Garbage).</li> </ul>	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of an unplanned release. The consequence is unchanged.	Controls based on legislative requirements – must be adopted.	Yes <b>C 11.1</b>
Disposal of any hazardous waste associated with the subsea infrastructure will comply with relevant State and Commonwealth legislation: <ul style="list-style-type: none"> <li><i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> (Cth)</li> <li>WA Environmental Protection (Controlled Waste) Regulations 2004.</li> </ul>	F: Yes. CS: Minimal cost. Standard practice.	Legislative requirements to be followed reduce the likelihood of an unplanned release. The consequence is unchanged.	Controls based on legislative requirements – must be adopted.	Yes <b>C 11.2</b>

#### **33 Qualitative measure**

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>33</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Good practice</b>				
No cutting of the flowline at field joints unless engineering assessment demonstrates that no plastic debris will be released.	F: Yes. CS: Minimal cost.	<p>The planned method for cutting the flowline is to use mechanical shears to cut away from the field joints (i.e., on the sections of flowline with concrete weight coating). This method prevents plastic covering the field joints being dislodged and lost to the sea. There will be some spalling of the concrete weight coating, with a small amount of concrete rubble left on the seabed at each cut location. Woodside has successfully used this method for removing the Griffin gas export flowline off Western Australia.</p> <p>Cutting through the concrete weight coating takes longer, and will dull shear blades faster, than cutting at the field joints.</p> <p>While Woodside plans avoid cutting at field joints, there may be circumstances in which such cuts are required. Prior to undertaking such cuts, Woodside will undertake an engineering assessment of the risk of releasing plastic debris to the environment. The engineering assessment will be developed if it is required, but is expected to include:</p> <ul style="list-style-type: none"> <li>examination of the field joints on recovered sections of the flowline to assess the condition of the join coatings</li> </ul>	Benefits outweigh cost/sacrifice.	Yes <b>C 7.4</b>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>33</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
		<ul style="list-style-type: none"> <li>test cutting (using the proposed method) of a field joint on the deck to assess the potential for plastic debris to be released to the sea.</li> </ul> <p>evaluation of the risk of the loss of marine debris based on the points above and only proceed with field joint cuts if the method can reasonably be shown to not release plastic debris.</p>		
<p>Project vessel waste arrangements, which require:</p> <ul style="list-style-type: none"> <li>dedicated waste segregation bins</li> <li>records of all waste to be disposed, treated or recycled</li> <li>waste streams to be handled and managed according to their hazard and recyclability class</li> <li>all non-putrescible waste (excludes all food, greywater or sewage waste) to be transported from the project vessels and disposed onshore.</li> </ul>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>Reduces the likelihood of an unplanned release. The consequence is unchanged.</p>	<p>Benefit outweighs cost sacrifice.</p>	<p>Yes <b>C 11.3</b></p>
<p>Vessel ROV or crane may be used to attempt recovery of solid wastes lost overboard.</p> <p>Where safe and practicable for this activity will consider:</p> <ul style="list-style-type: none"> <li>risk to personnel to retrieve object</li> <li>whether the location of the object is in recoverable water depths</li> </ul>	<p>F: Yes; however, it may not always be practicable. Assessed case-by-case.</p> <p>CS: Potentially significant cost. Standard practice.</p>	<p>Occurs after an unplanned release of solid waste and therefore no change to the likelihood. Since the waste objects may be recovered, a reduction in consequence is possible.</p>	<p>Benefit outweighs cost sacrifice.</p>	<p>Yes <b>C 11.4</b></p>

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>33</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<ul style="list-style-type: none"> <li>object's proximity to subsea infrastructure</li> <li>ability to recover the object (i.e. nature of object, lifting equipment or, ROV availability and suitable weather).</li> </ul> <p>Any material dropped objects/waste that remain in the title will undergo an impact assessment and be added to the inventory.</p>				
<p>The project vessels' work procedures for lifts, bulk transfers and cargo loading, which require:</p> <ul style="list-style-type: none"> <li>The security of loads shall be checked before commencing lifts.</li> <li>Loads shall be covered if there is a risk of loss of loose materials.</li> <li>Lifting operations shall be conducted using the PTW and JSA systems to manage the specific risks of that lift, including consideration of weather and sea state.</li> </ul>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>By implementing project vessels' work procedures for lifts, bulk transfers and cargo loading, the likelihood of a dropped object event is reduced. Since the object may be recovered, a reduction in consequence is possible.</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes <b>C 11.5</b></p>
<p>Project vessel inductions include material to raise crew awareness of dropped object prevention.</p>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>By ensuring crew are appropriately trained in dropped object prevention, the likelihood of a dropped object event is reduced. Since the object may be recovered, a reduction in consequence is possible.</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes <b>C 11.6</b></p>
<p>Infrastructure with potential to cause damage to live infrastructure within the Operational Area will be cut and recovered</p>	<p>F: Yes. CS: Minimal cost. Standard practice.</p>	<p>Ensuring infrastructure is lifted beyond a calculated drop radius to reduce the likelihood of damage to live infrastructure.</p>	<p>Benefits outweigh cost/sacrifice.</p>	<p>Yes <b>C 11.7</b></p>

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Demonstration of ALARP				
<b>Control considered</b>	<b>Control feasibility (F) and cost/sacrifice (CS)<sup>33</sup></b>	<b>Benefit in impact/risk reduction</b>	<b>Proportionality</b>	<b>Control adopted</b>
beyond a calculated drop radius.				
Implement an infrastructure disposal and resource recovery strategy that: <ul style="list-style-type: none"> <li>monitors and tracks waste from recovery to end state</li> <li>considers the waste hierarchy when determining appropriate end state for waste</li> <li>describes contingency procedures for dealing with contaminants offshore and onshore</li> </ul>	F: Yes. CS: Minimal cost. Standard practice	Reduces the risk of unsuitable disposal through efficient use of resources and reduces the risk of an unplanned contamination of waste streams during disposal.	Benefits outweigh cost/sacrifice.	Yes <b>C 11.8</b>
Undertake engagement with waste contractors to identify potential waste disposal pathways.	F: Yes. CS: Minimal cost. Standard practice	Reduces the risk of unsuitable disposal through efficient use of resources.	Benefits outweigh cost/sacrifice.	Yes <b>C 11.9</b>
Waste will be managed in accordance with the waste management plan (Section 7.2.5). The waste management plan includes details on: <ul style="list-style-type: none"> <li>waste management hierarchy</li> <li>storage of waste</li> <li>transport and disposal of waste</li> <li>waste legislation and standards</li> <li>waste monitoring and reporting.</li> </ul>	F: Yes. CS: Minimal cost. Standard practice	Reduces the risk of unsuitable disposal through efficient use of resources and reduces the risk of unplanned contamination of waste streams during disposal.	Benefits outweigh cost/sacrifice.	Yes <b>C 11.10</b>
Waste management contractor evaluation and selection will include a preference for contractors who are able to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising	F: Yes. CS: Minimal cost. Standard practice	Waste management practices will aim to reduce the volume of waste to landfill.	Control is feasible and can be implemented with minimal cost. Control considered standard practice. Benefits outweigh cost sacrifice.	Yes <b>C 11.11</b>

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Demonstration of ALARP				
<b>Control considered</b>	<b>Control feasibility (F) and cost/sacrifice (CS)<sup>33</sup></b>	<b>Benefit in impact/risk reduction</b>	<b>Proportionality</b>	<b>Control adopted</b>
waste volumes disposed to landfill.				
Debris created during Angel subsea infrastructure removal to be recovered where practicable.	<p>F: Yes; however, it may not always be practicable. Assessed case-by-case.</p> <p>CS: Potentially significant cost. Standard practice.</p>	<p>Recovery of relatively small debris (e.g., cobble-sized concrete) is not feasible due to the small size, however larger debris may feasibly be recovered by ROV. This may reduce man-made material left on the seabed, potentially reducing the environmental impact. An ROV will be available during Angel subsea infrastructure removal, which could identify and recover relatively large (300 mm x 300 mm) debris created during removal. The as-left ROV survey may also provide an opportunity to identify and recover relatively large debris.</p>	Benefits outweigh cost/sacrifice.	<p>Yes</p> <p><b>C 11.12</b></p>
<b>Professional judgement – Eliminate</b>				
No additional controls identified.				
<b>Professional judgement – Substitute</b>				
No additional controls identified.				
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<p><b>ALARP statement:</b></p> <p>On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with seabed disturbance from loss of hazardous and non-hazardous solid waste, including dropped objects. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.</p>				

### Demonstration of acceptability

**Acceptability statement:**

The impact/risk assessment has determined that, given the adopted controls, accidental discharge of solid waste or dropped objects represents a low current risk rating that may result in negligible, localised impacts (<1 month) on species, habitat (but not affecting ecosystem function), physical or biological attributes. Further opportunities to reduce the impacts and risks have been investigated above. Relevant recovery plans conservation advice and threat abatement plans have been considered during the impact assessment, and the Petroleum Activity is not considered to be inconsistent with the overall recovery objectives and actions of these recovery plans, advice and threat abatement plans (refer to Section 1.7.3).

On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.



EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 15</b> No release of solid hazardous or non-hazardous waste <sup>34</sup> to the marine environment.	<b>C 11.1</b> Project vessels compliant with Marine Orders for safe vessel operations: <ul style="list-style-type: none"> <li>Marine Order 94 (Marine pollution prevention –packaged harmful substances) 2014</li> <li>Marine Order 95 (Pollution prevention – Garbage).</li> </ul>	<b>PS 11.1.1</b> Project vessels compliant with Marine Orders 94 and 95.	<b>MC 11.1.1</b> Records demonstrate compliance with Marine Orders 94 and 95.
	<b>C 11.2</b> Disposal of any hazardous waste associated with the subsea infrastructure will comply with relevant State and Commonwealth legislation: <ul style="list-style-type: none"> <li><i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> (Cth)</li> <li>WA Environmental Protection (Controlled Waste) Regulations 2004.</li> </ul>	<b>PS 11.2.1</b> Disposal of any hazardous waste associated with the subsea infrastructure is compliant with the <i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> (Cth) and Environmental Protection (Controlled Waste) Regulations 2004 (WA).	<b>MC 11.2.1</b> Records demonstrate disposal of hazardous waste associated with the subsea infrastructure was compliant with relevant Commonwealth and State legislation.
	<b>C 7.4</b> Refer to Section 6.7.7.	<b>PS 7.4.1</b> Refer to Section 6.7.7.	<b>MC 7.4.1</b> Refer to Section 6.7.7.
	<b>C 11.3</b> Project vessel waste arrangements, which require: <ul style="list-style-type: none"> <li>dedicated waste segregation bins</li> <li>records of all waste to be disposed, treated or recycled</li> <li>waste streams to be handled and managed according to their hazard and recyclability class</li> <li>all non-putrescible waste (excludes all food, greywater or sewage waste) to be transported from the</li> </ul>	<b>PS 11.3.1</b> Waste will be managed in accordance with the project vessel waste arrangements.	<b>MC 11.3.1</b> Records demonstrate compliance against project vessel waste arrangements.

<sup>34</sup> Waste as defined in the Woodside Offshore Facilities Waste Management Plan

EPOs, EPS and MC			
EPO	Controls	PS	MC
	project vessels and disposed onshore.		
	<b>C 11.4</b> Vessel ROV or crane may be used to attempt recovery of solid wastes lost overboard. Where safe and practicable for this activity will consider: <ul style="list-style-type: none"> <li>risk to personnel to retrieve object</li> <li>whether the location of the object is in recoverable water depths</li> <li>object's proximity to subsea infrastructure</li> <li>ability to recover the object (i.e. nature of object, lifting equipment or, ROV availability and suitable weather).</li> </ul> Any material dropped objects/waste that remain in the title will undergo an impact assessment and be added to the inventory.	<b>PS 11.4.1</b> Material <sup>35</sup> solid waste/equipment dropped to the marine environment will be recovered where safe and practicable to do so. <ul style="list-style-type: none"> <li>Where retrieval is not practicable and/or safe, material items (property) that are lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title.</li> </ul>	<b>MC 11.4.1</b> Records demonstrate outcomes of the safe and practicable evaluation, including an impact assessment for the objects remaining.
	<b>C 11.5</b> The project vessels' work procedures for lifts, bulk transfers and cargo loading, which require: <ul style="list-style-type: none"> <li>the security of loads to be checked before commencing lifts</li> <li>loads to be covered if there is a risk of losing loose materials</li> <li>lifting operations to be conducted using the PTW and JSA systems to manage the specific risks of that lift, including consideration of weather and sea state.</li> </ul>	<b>PS 11.5.1</b> All lifts conducted in accordance with applicable project vessels' work procedures to limit potential for dropped objects.	<b>MC 11.5.1</b> Records show lifts conducted in accordance with the applicable project vessels' work procedures.
	<b>C 11.6</b> Project vessel inductions include material to raise	<b>PS 11.6.1</b> Project vessels crews aware of requirements for dropped object prevention.	<b>MC 11.6.1</b> Records show dropped object prevention material is provided to the project

<sup>35</sup> For the purposes of this control/performance standard 'material' is defined as unplanned releases of waste events with an environmental consequence greater than a negligible impact (e.g. localized with no lasting effect).

EPOs, EPS and MC			
EPO	Controls	PS	MC
	crew awareness of dropped object prevention.		vessels' crew during inductions.
	<b>C 11.7</b> Infrastructure with potential to cause damage to live infrastructure within the Operational Area will be cut and recovered beyond a calculated drop radius.	<b>PS 11.7.1</b> Infrastructure is recovered outside calculated drop radii around live infrastructure.	<b>MC 11.7.1</b> Records demonstrate drop radii are calculated for any removal activities in proximity to live infrastructure, and infrastructure is recovered outside these radii.
	<b>C 11.8</b> Implement an infrastructure recycle and resource recovery strategy that: <ul style="list-style-type: none"> <li>monitors and tracks waste from recovery to end state</li> <li>considers the waste hierarchy when determining appropriate end state for waste</li> <li>describes contingency procedures for dealing with contaminants offshore and onshore</li> </ul>	<b>PS 11.8.1</b> Decommissioning waste generated from infrastructure removal is managed in accordance with the infrastructure disposal and resource recovery strategy.	<b>MC 11.8.1</b> Records demonstrate compliance against an infrastructure disposal and resource recovery strategy.
	<b>C 11.9</b> Undertake engagement with waste contractors to identify potential waste disposal pathways.	<b>PS 11.9.1</b> Engagement with relevant waste contractors to identify potential waste disposal pathways will be undertaken prior to inform preparation of an infrastructure disposal and resource recovery strategy.	<b>MC 11.9.1</b> Records demonstrating relevant waste contractors have been engaged
	<b>C 11.10</b> Waste will be managed in accordance with the waste management plan (Section 7.2.5). The waste management plan includes details on: <ul style="list-style-type: none"> <li>waste management hierarchy</li> <li>storage of waste</li> <li>transport and disposal of waste</li> <li>waste legislation and standards</li> <li>waste monitoring and reporting.</li> </ul>	<b>PS 11.10.1</b> Decommissioning waste generated from subsea infrastructure removal is managed in accordance with the waste management plan described in Section 7.2.5), including: <ul style="list-style-type: none"> <li>90% by weight recycling of materials</li> <li>decontamination of waste (if required) prior to recycling or disposal storage, transportation, and disposal of equipment in accordance with WA Environmental Protection (Controlled</li> </ul>	<b>MC 11.10.1</b> Records demonstrate that subsea infrastructure removal wastes are managed in accordance with the waste management plan.

EPOs, EPS and MC			
EPO	Controls	PS	MC
		Waste) Regulations 2004. <ul style="list-style-type: none"> <li>tracking of waste to final disposal location</li> </ul>	
	<b>C 11.11</b> Waste management contractor evaluation and selection will include a preference for contractors who are able to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.	<b>PS 11.11.1</b> Waste management contractor selected based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.	<b>MC 11.11.1</b> Records show that waste management contractor evaluation and selection was based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill
		<b>PS 11.11.2</b> Woodside to undertake waste management contractor audit to verify performance against waste management plan.	<b>MC 11.11.2</b> Records of waste management contractor audit
	<b>C 11.12</b> Debris created during Angel subsea infrastructure removal to be recovered where practicable.	<b>PS 11.12.1</b> Debris greater than 300 mm x 300 mm created during Angel subsea infrastructure removal will be recovered where practicable.	<b>MC 11.12.1</b> Records demonstrate that any debris created during Angel subsea infrastructure removal observed by ROVs greater than 300 mm x 300 mm is recovered where practicable.

## 6.8.6 Physical Presence: Interaction with Marine Fauna

Context													
Project Vessels – Section 3.6			Protected Species – Section 4.6 Socio-Economic Environment – Section 4.10				Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Accidental collision between project vessels and protected marine fauna within the Operational Area					X		A	E	1	L	LCS GP PJ	Broadly Acceptable	EPO 16
Description of source of impact													
<p>The project vessels operating in and around the Operational Area may present a potential hazard to cetaceans (e.g. humpback whales) and other protected marine fauna, such as marine turtles and whale sharks. 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. The factors that contribute to the frequency and severity of impacts due to collisions vary greatly due to vessel type, vessel operation (specific activity, speed), physical environment (e.g. water depth), the type of animal potentially present and their behaviours. Project vessels would typically be stationary or moving at low speeds when supporting the Petroleum Activity; support vessels typically transit to and from the Operational Area between two and four trips per week (e.g. to port).</p>													
Impact assessment													
Environmental value(s) potentially impacted													
<p>Vessel collisions with marine fauna have potential to occur within the Operational Area. Vessel disturbance is a key threat to a number of migratory and threatened species identified as occurring within the Operational Area including cetaceans, marine turtles and whale sharks. Relevant conservation actions outlined in recovery plans and threat abatement plans are outlined in Section 6.9. The Operational Area overlaps the foraging BIA for Whale Sharks located northward from Ningaloo along the 200 m isobath. The Operational Area does not overlap with any BIAs for cetaceans or marine turtles. Refer to Section 4.6.1 to Section 4.6.3 for more information about these species and details of seasonal timings.</p> <p>The likelihood of vessel/fauna collision being lethal is influenced by vessel speed—the greater the speed at impact, the greater the risk of mortality (Jensen and Silber, 2004; Laist <i>et al.</i>, 2001). Vanderlaan 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.</p> <p>Project vessels within the Operational Area are likely to be travelling &lt;8 knots (and will often be stationary), therefore, the chance of a vessel collision with protected species resulting in a lethal outcome is considered unlikely, as fauna can move away from project vessels. The risk of marine life getting caught in operating thrusters is unlikely, given the low presence of individuals, combined with the avoidance behaviour commonly displayed during dynamic positioning operations.</p> <p><b>Cetaceans</b></p>													

Cetaceans are naturally inquisitive marine mammals. The reaction of cetaceans to the approach of a vessel is quite variable. Some species remain motionless when close to a vessel, while others are known to be curious and often approach ships that have stopped or are slow-moving, although they generally do not approach and sometimes avoid faster-moving ships (Richardson *et al.*, 1995). The Whale and Dolphin Conservation Society (WDCS, 2006) indicates some cetacean species, such as humpback whales, can detect and change course to avoid a vessel.

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; Laist *et al.*, 2001). Vanderlaan and Taggart (2007) found 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. Project vessels within the Operational Area are likely to be travelling less than eight knots; therefore, the chance of a vessel collision with protected species resulting in a lethal outcome is considered unlikely, as fauna can move away from project vessels.

Collisions between vessels and marine mammals occur more frequently in areas where high vessel traffic and important habitat coincide (WDCS, 2006). Given the absence of cetacean BIAs within the Operational Area and the slow speeds at which project vessels operate collisions with cetaceans are considered highly unlikely.

#### **Whale sharks**

Whale sharks which have been shown to spend approximately 25% of their time less than 2 m from the surface and greater than 40% in the upper 15 m of the water column (Wilson *et al.*, 2006; Gleiss *et al.*, 2013), making them vulnerable to vessel strike. Individuals 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 North West Shelf waters including the Operational Area during their migrations to and from Ningaloo Reef between July and November. However, considering the slow speed of vessels during the activity, the risk is considered low.

#### **Marine turtles**

Turtles are also at risk from vessel strikes, particularly in shallow coastal foraging habitats and internesting areas where there are high numbers of recreational and commercial vessels (Commonwealth of Australia, 2017). Considering the distance of the Operational Area from the nearest nesting beaches (Montebello Islands approximately 142 km south-west from Operational Area), it is expected that the presence of marine turtles would be very unlikely and only comprise individuals transiting the open, offshore waters for short periods of time. Given the slow speeds at which project vessels operate, collisions with transiting marine turtles are considered highly unlikely.

It is unlikely that vessel movement associated with the Petroleum Activity will have a significant impact on marine fauna populations, given the low presence of transiting individuals and the low operating speed of the support vessels (generally less than eight knots or stationery, unless operating in an emergency).

#### **Cultural values and heritage**

Through consultation and review of available literature (Section 4.9.4.1), Woodside understands that marine fauna that may be affected by a collision with a project vessel, such as marine mammals, whale sharks and turtles, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

Activities that impact turtle populations and their marine environment may have an indirect impact on some First Nations communities if they deplete hunting areas and threaten local food security (Delisle *et al.* 2018:251). Whale species may be subject of First Nations' increase ceremonies / rituals which are performed to enhance or maintain populations. As these 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, it is anticipated 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). 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). As described in the assessment of impacts to marine fauna (above), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically 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. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

It is not deemed credible, that vessel movement associated with the Petroleum Activity could have a significant impact on marine fauna populations given (1) the low presence of transiting individuals, (2) avoidance behaviour commonly displayed by whales, whale sharks and marine turtles and (3) low operating speed of the activity support vessels (generally less than 8 knots or stationary, unless operating in an emergency). Activities are considered unlikely to

result in a consequence greater than slight short-term disruption to individuals or a small proportion of the population and no impact on critical habitat or fauna activity.

**Cumulative Impacts**

Cumulative effects from the activity and from other activities conducted in the vicinity are not expected, due to the short-term nature of the operations and the slow speed at which vessels will be operating. Given the low-level impacts expected, cumulative impacts to receptors are not expected.

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>36</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
<p>EPBC Regulations 2000 - Part 8 Division 8.1 Interacting with cetaceans, including the following measures<sup>37</sup>:</p> <ul style="list-style-type: none"> <li>Project vessels will not travel greater than six knots within 300 m of a cetacean or turtle (caution zone) and not deliberately approach closer than 100 m from a whale.</li> <li>Project vessels will not deliberately approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding).</li> <li>If the cetacean or turtle shows signs of being disturbed, project vessels will immediately withdraw from the caution zone at a constant speed of less than six knots.</li> <li>Project vessels will not travel greater than eight knots within 250 m of a whale shark and not allow the vessel to deliberately</li> </ul>	<p>F: Yes CS: Minimal cost. Standard practice.</p>	<p>Implementing these controls will reduce the likelihood of a collision occurring between a cetacean, whale shark or turtle. The consequence of a collision is unchanged.</p>	<p>Controls based on legislative requirements – must be adopted.</p>	<p>Yes <b>C 3.1</b></p>

<sup>36</sup> Qualitative measure

<sup>37</sup> 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) <sup>36</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
approach closer than 30 m of a whale shark.				
<b>Good practice</b>				
No additional controls identified.				
<b>Professional judgement – Eliminate</b>				
No additional controls identified.				
<b>Professional judgement – Substitute</b>				
Variation of the timing of the Petroleum Activity to avoid migration and foraging periods.	F: Yes. Avoidance of the migration period is technically feasible, although not considered to be reasonably practicable. CS: Significant cost and schedule delays in contracting vessel for a specific timeframe.	Negligible reduction in consequence, given the duration and nature of the activity and receiving environment.	Grossly disproportionate. Implementation of the control requires considerable cost sacrifice for minimal environmental benefit.	No
<b>Professional judgement – Engineered Solution</b>				
The use of dedicated MFOs on support vessels for the duration of each activity to watch for whales and provide direction about and monitor compliance with Part 8 of the EPBC Regulations.	F: Yes. However, vessel crews already maintain a constant watch during operations in compliance with the Woodside Marine – Charterers Instructions on the requirements of vessel and whale interactions, and crew perform specific cetacean observation training.  CS: Additional cost of MFOs beyond that required during surveys considered unnecessary.	Given that support vessel bridge crews already maintain a constant watch during operations in compliance with the Woodside Marine – Charterers Instructions, additional MFOs would not significantly further reduce the risk.	Disproportionate. The cost/ sacrifice outweighs the benefit gained.	No
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with potential vessel collision with protected marine fauna. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				



### Demonstration of acceptability

#### Acceptability statement:

The risk assessment has determined that, given the adopted controls, a vessel collision with marine fauna represents a low risk rating that may result in negligible, localised impacts (<1 month) on species, habitat (but not affecting ecosystem function), physical or biological attributes. Further opportunities to reduce the 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 Act Regulations 2000. The residual risk of vessel collision with marine fauna is not inconsistent with the relevant objectives and actions of any applicable recovery plans or threat abatement plans (refer to Section 6.9), based on the adopted controls. Regard has been given to relevant conservation advice during the assessment of potential risks. Marine species such as cetaceans, whale sharks and turtles have been identified, during consultation for this EP as well as for other Woodside activities, as a cultural value for Traditional Custodians.

Impacts on a population level are not expected to occur, and cultural values and intangible cultural heritage associated with these species are expected to be maintained.

On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

### EPOs, EPS and MC

<b>EPO</b>	<b>Controls</b>	<b>PS</b>	<b>MC</b>
<b>EPO 16</b> No injury or mortality to EPBC Act 1999 and WA Biodiversity Conservation Act 2016 listed marine fauna as a result of the Petroleum Activities Program.	<b>C 3.1</b> Refer to Section 6.7.3	<b>PS 3.1.1</b> Refer to Section 6.7.3	<b>MC 3.1.1</b> Refer to Section 6.7.3
		<b>PS 3.1.2</b> Refer to Section 6.7.3	<b>MC 3.1.2</b> Refer to Section 6.7.3

## 6.8.7 Physical Presence: Accidental Introduction and establishment of Invasive Marine Species

Context													
Project Vessels – Section 3.6		Physical Environment – Section 4.4 Habitats and Biological Communities – Section 4.5 Protected Species – Section 4.6					Stakeholder Consultation – Section 5						
Impact evaluation summary													
Source of impact	Environmental value potentially impacted						Evaluation						
	Marine Sediment	Water Quality	Air Quality (incl Odour)	Ecosystems/ Habitat	Species	Socio-economic	Decision Type	Consequence/ Impact	Likelihood	Risk Rating	ALARP Tools	Acceptability	Outcome
Introduction and establishment of invasive marine species (IMS) within the Operational Area				X	X	X	A	D	0	L	LCS GP PJ	Broadly Acceptable	EPO 17
Description of source of impact													
<p>During the Petroleum Activity, vessels will be transiting to and from the Operational Area, potentially including traffic mobilising from beyond Australian waters. These project vessels may include the multi-purpose construction vessel (MCV) and general support vessels (Section 3.6).</p> <p>All vessels are subject to some level of marine fouling whereby organisms attach to the vessel hull. This could particularly occur in areas where organisms can find a good attachment surface (e.g. seams, strainers and unpainted surfaces) or where turbulence is lowest (e.g. niches, sea chests, etc.), although commercial vessels typically maintain anti-fouling coatings to reduce the build-up of fouling organisms. IMS could be present as biofouling on immersible equipment (survey equipment, ROV etc.) and could be translocated to the Operational Area and transferred directly to the seafloor or subsea structures where they could establish. Organisms can also be drawn into ballast tanks during onboarding of ballast water as cargo is loaded or to balance vessels under load.</p> <p>Project vessels have the potential to introduce IMS to the Operational Area through marine biofouling (containing IMS) on vessels, as well as within high-risk ballast water exchange. There is also a remote potential that cross-contamination between vessels can also occur (such as IMS translocated between project vessels) during times when vessels need to be alongside each other and a remote potential that IMS may be transferred onto the benthic habitat at the Angel Platform (within Operational Area).</p>													
Impact assessment													
Environmental value(s) potentially impacted													
<p>IMS are a subset of Non-indigenous Marine Species (NIMS) that have been introduced into a region beyond their natural biogeographic range resulting in impacts to social/cultural, human health, economic and/or environmental values. NIMS are species that have the ability to survive, reproduce and establish founder populations. However, not all NIMS introduced into an area will thrive or cause demonstrable impacts; the majority of NIMS around the world are relatively benign and few have spread widely beyond sheltered ports and harbours. NIMS are only considered IMS when they result in impacts to environmental values and/or have social/cultural, economic and/or human health impacts.</p> <p>Once introduced, IMS may prey on 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</p>													

food, space or light and can also interbreed with local species, creating hybrids such that the endemic species is lost. These changes to the local marine environment result in changes to the natural ecosystem.

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 detected 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.

Potential IMS have historically been introduced and translocated around Australia by a variety of natural and human means, including marine fouling and ballast water. Potential IMS vary from one region to another depending on various environmental factors such as water temperature, salinity, nutrient levels and habitat type, which dictate their survival and invasive capabilities. IMS typically require hard substrate in the photic zone; therefore, requiring shallow waters to become established. Highly disturbed, shallow-water environments such as shallow coastal waters, ports and marinas are more susceptible to IMS colonisation, whereas IMS are generally unable to successfully establish in deep-water ecosystems and open-water environments where the rate of dilution and the degree of dispersal are high (Williamson and Fitter, 1996; Paulay *et al.*, 2002; Geiling, 2014).

Project vessels have the potential to introduce IMS into the Operational Area. Water depths and presence of hard substrate within the Operational Area may be conducive to the establishment of IMS. There is an increased potential for the establishment of IMS, given the water depth of the Operational Area (approximately 75 m to 85 m) which also overlaps with the Glomar Shoals KEF and thus there is potential for hard substrate to be encountered.

Glomar Shoals is a submerged feature at depths of 33 m to 77 m (Falkner *et al.*, 2009). Benthic habitats of Glomar Shoals vary with depth and are characterised by coarse, unconsolidated sediment at depths greater than 60 m to hard substrate supporting benthic communities comprising sparse hard and soft corals, sponges and macroalgae at depths less than 40 m. Total cover of benthic taxa (hard coral, soft coral, sponges and other benthic biota) is highest at depths less than 40 m and decreases with depth (Wahab *et al.*, 2018). At depths of 60 m to 80 m, benthic cover is low and approximately 2%; at depths greater than 80 m, benthic cover is barely present, with baseline survey data indicating 0.1% cover of benthic biota. Structurally complex, biodiverse benthic habitats associated with the Glomar Shoals feature itself are mainly found within the north-eastern section of the Glomar Shoals KEF.

Approximately 0.01% of the Glomar Shoals KEF overlaps the Operational Area (in the north-western section of the KEF), refer to Figure 4-10. Given the Operational Area is located at a depth of approximately 75 to 85 m (water depth where benthic cover is less than 2%) and is located 7.25 km (from the 50 m depth contour to the nearest point of the Operational Area) from hard coral communities associated with the Glomar feature itself, the likelihood of IMS being introduced and establishing viable populations within this Operational Area or immediate surrounds is considered remote.

Depending on prevailing currents, the larval life history of the IMS, and the recruitment potential based on a variety of factors, including propagule pressure, there is a remote likelihood that an IMS may be carried to and establish within the shallower waters of the Glomar Shoals (less than 50 m depth), where available substrate and light could facilitate establishment and growth.

Shallow-water marine habitats, such as coral reefs, are considered susceptible to the introduction and subsequent establishment of IMS due to the availability of light and complex habitats. It must, however, be noted that healthy natural reef ecosystems may also present challenges to IMS establishment relative to degraded shallow water environments due to the increased likelihood of predation and competition. However, IMS introduced to shallow water marine habitats are, therefore, much more likely to successfully establish than those introduced to deep oceanic waters. Overall, the benthic habitats of Glomar Shoals are considered pristine and host regionally distinct ecological communities. Given this sensitivity, the consequence of the introduction and successful establishment of an IMS has been determined as a consequence level of Minor (D). The likelihood that an IMS would be introduced, establish a self-sustaining population and cause environmental impacts is considered remote given:

- Project vessels will be subject to the Woodside IMS risk assessment process. This process aligns with the approach adopted by WA DPIRD (such as vessel check tool) and has been proven effective in minimising the potential for IMS introduction. Woodside has successfully implemented this process for several large construction projects and ongoing operations over the last decade.
- There remains approximately 7.25 km from the Operational Area to the closest shallow water habitat (Glomar Shoals feature at the 50 m depth contour) that may be susceptible to the introduction and subsequent establishment of IMS, further reducing the likelihood of the establishment of IMS.
- The short duration of operations further reduces the risk of IMS introduction and subsequent establishment.

While project vessels have the potential to introduce IMS into the Operational Area, the deep offshore open waters of the Operational Area (~75 m to 85 m) are not conducive to the settlement and establishment of IMS. Furthermore, the Operational Area is away from shorelines and/or critical habitats. The likelihood of IMS being introduced and establishing viable populations within the Operational Area or immediate surrounds is considered remote.

#### **Industry, Shipping, Defence**

The establishment of IMS has the potential to cause changes to the functions, interests or activities of other users through indirect impact such as changes to fisheries target species resulting in economic and social implications, or

due to compromised reputation to the oil and gas industry. IMS have proven particularly difficult to eradicate from areas once established. If the introduction is detected 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. Given the low likelihood of IMS translocation to, and colonisation of environments within the Operational Area, project activities will not result in establishment of IMS, and as such not adversely affect other marine user activities in the region.

### Summary

In support of Woodside's assessment of the risks and consequences of IMS introduction associated with the Petroleum Activity, Woodside conducted a risk and impact evaluation of the different aspects of a marine pest translocation. The results of this assessment are presented in Table 6-11.

As a result of this assessment, Woodside has presented the highest potential consequence as a Minor (D) and likelihood as Remote (0), resulting in an overall Low risk following the implementation of identified controls.

**Table 6-11: Credibility, consequence and likelihood of introducing IMS**

IMS Introduction Location	Credibility of Introduction	Consequence of Introduction	Likelihood
Introduced to Operational Area and establishment on the seafloor or subsea structures	<b>Credible</b> There is potential for the transfer of marine pests to the seafloor within the Operational Area.	<b>Environment – D</b> While highly unlikely, introduction and establishment of IMS at Glomar Shoals from vessel operations during the Petroleum Activity in the Operational Area could result in loss of native species, should they be outcompeted or predated by the IMS.	<b>Remote (0)</b> Due to control measures in place, the likelihood of an IMS being introduced in the Operational Area during vessel operations is considered remote.
Introduced to Operational Area and establishment on a project vessel.	<b>Credible</b> There is potential for the transfer of marine pests between project vessels within the Operational Area.	<b>Environment – Not credible</b> The translocation of IMS from a colonised project vessel to another vessel and then to the environment is not credible. This is because the Operational Area is in deep open waters away from shorelines and/or critical habitat. Furthermore, the translocation to shallower environments via natural dispersion from a project vessel is not considered credible, given the distance of the Operational Area from nearshore environments (i.e. greater than 12nm/50 m water depth). On this basis there is no credible environmental risk.  <b>Reputation – D</b> If IMS were to establish on a project vessel from another colonised vessel, this could potentially impact the vessel operationally through the fouling of intakes, and potentially cause the infected vessels to be quarantined and requiring costly cleaning. Such introduction would be expected to have minor impact to Woodside's reputation, particularly with Woodside's contractors, and may impact future proposals.	<b>Remote (0)</b> Interactions between project vessel will be limited during the Petroleum Activity Program, with minimum 500 m safety exclusion zones being adhered to around the activity, and interactions limited to short periods of time alongside (as in, during backloading, bunkering activities). There is also no direct contact (in other words, they are not tied up alongside) during these activities.  Spread of marine pests via ballast water or spawning in these open ocean environments is also considered remote.
Transfer between project vessels and from project vessels to other marine environments	<b>Not Credible</b> This risk is considered so remote that it is not credible for the purposes of the activity. As described above, the transfer of IMS between project vessels was already considered remote, given the offshore open-ocean environment. Project vessels will be located in an offshore, open-ocean, deep environment, where IMS survival is		

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beyond the Operational Area.	implausible. Furthermore, this marine pest once transferred would need to survive on a new vessel with good vessel hygiene (in other words, has been through Woodside's risk assessment process) and survive the transport back from the Operational Area to shore. In the event it was to survive this trip, it would then need conditions conducive to establishing a viable population in the nearshore waters to which the infected vessel travels.	
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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>38</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<b>Legislation, codes and standards</b>				
Project vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements.	F: Yes. CS: Minimal cost. Standard practice.	Reduces the likelihood of transferring marine pests between project vessels within the Operational Area. No change in consequence would occur.	Controls based on legislative requirements under the <i>Biosecurity Act 2015</i> – must be adopted.	<b>Yes C 13.1</b>
<b>Good practice</b>				
Woodside's IMS risk assessment process <sup>39</sup> will be applied to project vessels and relevant immersible equipment undertaking the Petroleum Activity. Assessment will consider these risk factors: For vessels: <ul style="list-style-type: none"> <li>vessel type</li> <li>recent IMS inspection and cleaning history, including for internal niches</li> <li>out-of-water period before mobilisation</li> <li>age and suitability of antifouling coating at mobilisation date</li> <li>internal treatment systems and history</li> <li>origin and proposed area of operation</li> </ul>	F: Yes. CS: Minimal cost. Good practice implemented across all Woodside Operations.	Identifies potential risks and additional controls implemented accordingly. In doing so, the likelihood of transferring marine pests between project vessels within the Operational Area is reduced. No change in consequence would occur.	Benefits outweigh cost/sacrifice.	<b>Yes C 13.2</b>

<sup>38</sup> Qualitative measure

<sup>39</sup> Woodside's IMS risk assessment process was developed with regard to the national biofouling management guidelines for the petroleum production and exploration industry and guidelines for the control and management of a ships' biofouling to minimise the transfer of invasive aquatic species (IMO Guidelines, 2011).

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>38</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
<ul style="list-style-type: none"> <li>number of stationary/slow speed periods &gt;7 days</li> <li>region of stationary or slow periods</li> <li>type of activity – contact with seafloor.</li> </ul> <p>For immersible equipment:</p> <ul style="list-style-type: none"> <li>region of deployment since last thorough clean, particularly coastal locations</li> <li>duration of deployments</li> <li>duration of time out of water since last deployment</li> <li>transport conditions during mobilisation</li> <li>post-retrieval maintenance regime.</li> </ul> <p>Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as treating internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced.</p>				
<b>Professional judgement – Eliminate</b>				
No discharge of ballast water during the Petroleum Activity.	<p>F: No. Ballast water discharges are critical for maintaining vessel stability. Given the nature of the Petroleum Activity, the use of ballast (including the potential discharge of ballast water) is considered to be a safety critical requirement.</p> <p>CS: Not assessed, control not feasible.</p>	Not assessed, control not feasible.	Not assessed, control not feasible.	No

Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>38</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
Eliminate use of vessels.	F: No. Given that vessels must be used to implement project, there is no feasible means to eliminate the source of risk. CS: Loss of the project.	Not assessed, control not feasible.	Not assessed, control not feasible.	No
<b>Professional judgement – Substitute</b>				
Source project vessels based in Australia only.	F: Potentially. Limiting activities to only use local project vessels could potentially pose a significant risk in terms of time and duration of sourcing a vessel, as well as the ability of the local vessels to perform the required tasks. For example, there are limited installation vessels based in Australian waters. While the project will attempt to source project vessels locally it is not always possible. Availability cannot always be guaranteed when considering competing Oil and Gas activities in the region. In addition, sourcing Australian based vessels only will cause increases in cost due to pressures of vessel availability. CS: Significant cost and schedule impacts due to restrictions of vessel hire opportunities.	Sourcing vessels from within Australian will reduce the likelihood of IMS from outside Australian waters, however, it does not reduce the likelihood of introduction of species native to Australia but alien to the Operational Area and NWMR, or of IMS that have established elsewhere in Australia. The consequence is unchanged.	Disproportionate. Sourcing vessels from Australian waters may result in a reduction in the likelihood of IMS introduction to the Operational Area; however, the potential cost of implementing this control is grossly disproportionate to the minor environmental gain (or reducing an already remote likelihood of IMS introduction) potentially achieved by using only Australian based vessels, consequently this risk is considered not reasonably practicable.	No
IMS inspection of all vessels.	F: Yes. Approach to inspect vessels could be a feasible option. CS: Significant cost and schedule impacts. In addition, Woodside's IMS risk assessment process (C 13.2) is seen to be more cost effective as this control allows Woodside to manage the introduction of marine	Inspection of all vessels for IMS would reduce the likelihood of IMS being introduced to the Operational Area. However, this reduction is unlikely to be significant given the other control measures implemented. No change in consequence would occur.	Disproportionate. The cost/sacrifice outweighs the benefit gained, as other controls to be implemented achieve an ALARP position.	No

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Demonstration of ALARP				
Control considered	Control feasibility (F) and cost/sacrifice (CS) <sup>38</sup>	Benefit in impact/risk reduction	Proportionality	Control adopted
	pests through biofouling, while targeting its efforts to and resources to areas of greatest concern.			
<b>Professional judgement – Engineered Solution</b>				
No additional controls identified.				
<b>ALARP statement:</b> On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating ALARP (Section 2.3.1), Woodside considers the adopted controls appropriate to manage potential impacts/risks associated with the accidental introduction and establishment of IMS. As no reasonably practicable additional/alternative controls were identified that would further reduce the impacts without disproportionate sacrifice, the impacts/risks are considered ALARP.				

Demonstration of acceptability
<b>Acceptability statement:</b> The impact/risk assessment has determined that, given the adopted controls, the accidental introduction and establishment of IMS through ballast water or biofouling on vessels represents a low residual risk that has a remote likelihood of resulting in a potential impact greater than minor, short-term impact (1–2 years) to a small proportion of the benthic community. Further opportunities to reduce the impacts and risks have been investigated above. On the basis of the assessment outcomes, use of the relevant tools appropriate to the decision type (i.e. Decision Type A; Section 2.2.3.2) and Woodside's criteria for demonstrating acceptability (Section 2.3.2), Woodside considers the adopted controls appropriate to manage the impacts/risks to be managed to a level that is broadly acceptable, and compliance with those controls demonstrates that the EPOs are met.

EPOs, EPS and MC			
EPO	Controls	PS	MC
<b>EPO 17</b> No introduction and establishment of invasive marine species into the Operational Area as a result of the Petroleum Activities Program.	<b>C 13.1</b> Project vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.	<b>PS 13.1.1</b> Project vessels manage ballast water in accordance with Australian Ballast Water Management Requirements.	<b>MC 13.1.1</b> Ballast Water Records System maintained by vessels which verifies compliance against Australian Ballast Water Management Requirements.
	<b>C 13.2</b> Woodside's IMS risk assessment process <sup>40</sup> will be applied to project vessels and relevant immersible equipment undertaking the Petroleum	<b>PS 13.2.1</b> Before entering the Operational Area, project vessels, and relevant immersible equipment are	<b>MC 13.2.1</b> Records of IMS risk assessments maintained for all project vessels and relevant immersible equipment entering the Operational Area or IMS

<sup>40</sup> Woodside's IMS risk assessment process was developed with regard to the national biofouling management guidelines for the petroleum production and exploration industry and guidelines for the control and management of a ships' biofouling to minimise the transfer of invasive aquatic species (IMO Guidelines, 2011).



EPOs, EPS and MC			
EPO	Controls	PS	MC
	<p>Activity. Assessment will consider these risk factors:</p> <p>For vessels:</p> <ul style="list-style-type: none"> <li>vessel type</li> <li>recent IMS inspection and cleaning history, including for internal niches</li> <li>out-of-water period before mobilisation</li> <li>age and suitability of antifouling coating at mobilisation date</li> <li>internal treatment systems and history</li> <li>origin and proposed area of operation</li> <li>number of stationary/slow speed periods &gt;7 days</li> <li>region of stationary or slow periods</li> <li>type of activity – contact with seafloor.</li> </ul> <p>For immersible equipment:</p> <ul style="list-style-type: none"> <li>region of deployment since last thorough clean, particularly coastal locations</li> <li>duration of deployments</li> <li>duration of time out of water since last deployment</li> <li>transport conditions during mobilisation</li> <li>post-retrieval maintenance regime.</li> </ul> <p>Based on the outcomes of each IMS risk assessment, management measures commensurate with the risk (such as treating internal systems, IMS inspections or cleaning) will be implemented to minimise the likelihood of IMS being introduced.</p>	<p>determined to be low risk<sup>41</sup> of introducing IMS of concern, and maintain this low-risk status to mobilisation.</p> <p><b>PS 13.2.2</b></p> <p>In accordance with Woodside's IMS risk assessment process, the IMS risk assessments will be undertaken by an authorised environment adviser who has completed relevant Woodside IMS training or by qualified and experienced IMS inspector.</p>	<p>management area to undertake the Petroleum Activity.</p> <p><b>MC 13.2.2</b></p> <p>Records confirm that the IMS risk assessments undertaken by an Environment Adviser or IMS inspector (as relevant).</p>

<sup>41</sup> Low risk of introducing IMS of concern is defined as either no additional management measures required or, management measures have been applied to reduce the risk.

## 6.9 Recovery plan and threat abatement assessment

This section describes the assessment that Woodside has undertaken to demonstrate that the Petroleum Activity 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, 2014).
- 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).

Table 6-12 lists the objectives and (where relevant) the action areas of these plans and also describes whether these objectives/action areas apply to government, the titleholder, and/or the Petroleum Activity. For those objectives/action areas applicable to the Petroleum Activity, 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 clearly inconsistent with that action or not. The results of this assessment against relevant actions are presented below.

**Table 6-12: 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 Activity
<b>Marine Turtle Recovery Plan</b>			
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
<b>Interim recovery objectives</b>			
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		
The management of marine turtles is supported	Y		
Anthropogenic threats are demonstrably minimised	Y	Y	Y
Trends in nesting numbers at index beaches and population demographics at important foraging grounds are described	Y	Y	
<b>Action areas</b>			
<b>A. Assessing and addressing threats</b>			
A1. Maintain and improve efficacy of legal and management protection	Y	Y	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>B. Enabling and measuring recovery</b>			
B1. Determine trends in index beaches	Y	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
<b>Blue Whale Conservation Management Plan</b>			
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
<b>Interim recovery objectives</b>			
The conservation status of blue whale populations is assessed using efficient and robust methodology	Y		

EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	Titleholder	Petroleum Activity
The spatial and temporal distribution, identification of biologically important areas, and population structure of blue whales in Australian waters is described	Y	Y	Y
Current levels of legal and management protection for blue whales are maintained or improved and an appropriate adaptive management regime is in place	Y		
Anthropogenic threats are demonstrably minimised	Y	Y	Y
<b>Action areas</b>			
<b>A. Assessing and addressing threats</b>			
A.1: Maintain and improve existing legal and management protection	Y		
A.2: Assessing and addressing anthropogenic noise	Y	Y	Y
A.3: Understanding impacts of climate variability and change	Y		
A.4: Minimising vessel collisions	Y	Y	Y
<b>B. Enabling and Measuring Recovery</b>			
B.1: Measuring and monitoring population recovery	Y		
B.2: Investigating population structure	Y		
B.3: Describing spatial and temporal distribution and defining biologically important habitat	Y	Y	Y
<b>Grey Nurse Shark Recovery Plan</b>			
<b>Overarching objective</b>			
<p>To assist the recovery of the grey nurse shark in the wild, throughout its range in Australian waters, with a view to:</p> <ul style="list-style-type: none"> <li>improving the population status, leading to future removal of the grey nurse shark from the threatened species list of the EPBC Act</li> <li>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</li> </ul>	Y	Y	Y
<b>Specific objectives</b>			
Develop and apply quantitative monitoring of the population status (distribution and abundance) and potential recovery of the grey nurse shark in Australian waters	Y		
Quantify and reduce the impact of commercial fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range	Y		
Quantify and reduce the impact of recreational fishing on the grey nurse shark through incidental (accidental and/or illegal) take, throughout its range	Y		
Where practicable, minimise the impact of shark control activities on the grey nurse shark	Y		
Investigate and manage the impact of ecotourism on the grey nurse shark	Y		
Manage the impact of aquarium collection on the grey nurse shark	Y		
Improve understanding of the threat of pollution and disease to the grey nurse shark	Y	Y	Y

EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	Titleholder	Petroleum Activity
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	
Continue to develop and implement research programs to support the conservation of the grey nurse shark	Y	Y	
Promote community education and awareness in relation to grey nurse shark conservation and management	Y		
<b>Sawfish and River Sharks Recovery Plan</b>			
<b>Primary objective</b>			
<p>To assist the recovery of sawfish and river sharks in Australian waters with a view to:</p> <ul style="list-style-type: none"> <li>improving the population status leading to the removal of the sawfish and river shark species from the threatened species list of the EPBC Act</li> <li>ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future</li> </ul>	Y	Y	Y
<b>Specific objectives</b>			
Reduce and, where possible, eliminate adverse impacts of commercial fishing on sawfish and river shark species	Y		
Reduce and, where possible, eliminate adverse impacts of recreational fishing on sawfish and river shark species	Y		
Reduce and, where possible, eliminate adverse impacts of Indigenous fishing on sawfish and river shark species	Y		
Reduce and, where possible, eliminate the impact of illegal, unregulated and unreported fishing on sawfish and river shark species	Y		
Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species	Y	Y	Y
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
Reduce and, where possible, eliminate any adverse impacts of collection for public aquaria on sawfish and river shark species	Y		
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		
Develop research programs to assist conservation of sawfish and river shark species	Y	Y	
Improve community understanding and awareness in relation to sawfish and river shark conservation and management	Y		
<b>Marine Debris Threat Abatement Plan</b>			
<b>Objectives</b>			
Contribute to long-term prevention of the incidence of marine debris	Y	Y	
Understand the scale of impacts from marine plastic and microplastic on key species, ecological communities and locations	Y	Y	Y

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EPBC Act Part 13 statutory instrument	Applicable to:		
	Government	Titleholder	Petroleum Activity
Remove existing marine debris	Y		
Monitor the quantities, origins, types and hazardous chemical contaminants of marine debris, and assess the effectiveness of management arrangements for reducing marine debris	Y		
Increase public understanding of the causes and impacts of harmful marine debris, including microplastic and hazardous chemical contaminants, to bring about behaviour change	Y		

**Table 6-13: Assessment against relevant actions of the Marine Turtle Recovery Plan**

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
Marine Turtle Recovery Plan	<b>Action Area A1:</b> Maintain and improve efficacy of legal and management protection.	<b>Action:</b> Manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival	Refer to Section 6.7.3, 6.7.4 and 6.8.2 <b>Not inconsistent assessment:</b> The assessment of acoustic emissions, light emissions and potential vessel collisions has considered the potential impacts to marine turtles. Management of the Petroleum Activities Program will ensure that marine turtles are not displaced from identified habitat critical to the survival of marine turtles.	EPO 4, 5 C 3.1, PS 3.1.1  EPO 7 C 4.1 PS 4.1.1
		<b>Action:</b> Manage anthropogenic activities in Biologically Important Areas to ensure that biologically important behaviour can continue	Refer to Section 6.7.3, 6.7.4 and 6.8.2 <b>Not inconsistent assessment:</b> The assessment of acoustic emissions, light emissions and potential vessel collisions has considered the potential impacts to marine turtles. Management of the Petroleum Activities Program will ensure that biologically important behaviour can continue in BIAs.	EPO 4, 5 C 3.1, PS 3.1.1  EPO 7 C 4.1 PS 4.1.1

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
	<b>Action Area A3:</b> Reduce the impacts from marine debris	<b>Action:</b> Support the implementation of the Marine Debris Threat Abatement Plan (TAP) <u>Priority actions at stock level:</u> 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 6.8.5 <b>Not inconsistent assessment:</b> 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 Activity.  The proposed activity will remove infrastructure, including the majority of associated plastics, from the marine environment.	EPO 15 C 11.1 PS 11.1.1
	<b>Action Area A4:</b> Minimise chemical and terrestrial discharge	<b>Action:</b> 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 <u>Priority actions at stock level:</u> 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 6.8.2 and 6.8.3 <b>Not inconsistent assessment:</b> 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 6.8.2 and 6.8.3  Detailed oil spill preparedness and response performance outcomes, standards and measurement criteria for the Petroleum Activity are presented in Appendix G.

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
	<b>Action Area A8:</b> Minimise light pollution	<b>Action:</b> 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  <u>Priority actions at stock level:</u> 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	Refer Section 6.7.4 <b>Not inconsistent assessment:</b> 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 the activity, the impacts to adult turtles moving through the Operational Area from vessel lighting are expected to be localised and temporary with no lasting effect.	EPO 6, EPO 7 C 4.1 PS 4.1.1
	<b>Action Area B1:</b> Determine trends at index beaches	<b>Action:</b> Maintain or establish long-term monitoring programs at index beaches to collect standardised data critical for determining stock trends, including data on hatchling production  <u>Priority actions at stock level:</u> 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	<b>Not inconsistent assessment:</b> Woodside contributes to Action Area B1 via its support of the Ningaloo Turtle Program <sup>1</sup> .	N/A
	<b>Action Area B3:</b> Address information gaps to better facilitate the recovery of marine turtle stocks	<b>Action:</b> Understand the impacts of anthropogenic noise on marine turtle behaviour and biology  <u>Priority actions at stock level:</u> 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 North West Shelf stock to other stocks LH-WA – no relevant actions F-Pil – no relevant actions	Refer Section 6.7.3 <b>Not inconsistent assessment:</b> The assessment of acoustic emissions has considered the potential impacts to marine turtles. Noise related to the Petroleum Activity is not expected to result in behavioural response, injury or mortality of individuals, or any other lasting effect.	EPO 4, EPO 5 C 3.1 PS 3.1.1, PS 3.1.2
<b>Assessment summary</b> The Marine Turtle Recovery Plan has been considered during the assessment of impacts and risks and the Petroleum Activity is not considered to be inconsistent with the relevant actions of this plan.				



**Table 6-14: Assessment against relevant actions of the Blue Whale Conservation Management Plan**

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
Blue Whale Conservation Management Plan	<b>Action Area A.2:</b> Assessing and addressing anthropogenic noise	<b>Action 2:</b> Assessing the effect of anthropogenic noise on blue whale behaviour  <b>Action 3:</b> Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to use the area without injury, and is not displaced from a foraging area	Refer Section 6.7.3  <b>Not inconsistent assessment:</b> 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 Activity 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 4, EPO 5 C 3.1 PS 3.1.1, PS 3.1.2
	<b>Action Area A.4:</b> Minimising vessel collisions	<b>Action 3:</b> 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 6.8.6  <b>Not inconsistent assessment:</b> The assessment of vessel collision with marine fauna has considered the potential risks to pygmy blue whales. If the Petroleum Activity 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 17 C 3.1 PS 3.1.1, PS 3.1.2
	<b>Action Area B.3:</b> Describing spatial and temporal distribution and defining biologically important habitat	<b>Action 2:</b> Identify migratory pathways between breeding and feeding grounds  <b>Action 3:</b> Assess timing and residency within BIAs	<b>Not inconsistent assessment:</b> Woodside contributes to Action Area B3 via its support of targeted research initiatives (e.g. satellite tracking of pygmy blue whale migratory movements).	N/A
<b>Assessment summary</b> The Blue Whale Conservation Management Plan has been considered during the assessment of impacts and risks and the Petroleum Activity is not considered to be inconsistent with the relevant actions of this plan.				

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**Table 6-15: Assessment against relevant actions of the Grey Nurse Shark Recovery Plan**

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
Grey Nurse Shark Recovery Plan	<b>Objective 7:</b> Improve understanding of the threat of pollution and disease to the grey nurse shark	<b>Action 7.1:</b> Review and assess the potential threat of introduced species, pathogens and pollutants	Refer Section 6.8.5 <b>Not inconsistent assessment:</b> 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
			Refer Sections 6.8.2 and 6.8.3 <b>Not inconsistent assessment:</b> 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 6.8.2 and 6.8.3 Detailed oil spill preparedness and response performance outcomes, standards and measurement criteria for the Petroleum Activity are presented in Appendix G
<b>Assessment summary</b> The Grey Nurse Shark Recovery Plan has been considered during the assessment of impacts and risks and the Petroleum Activity is not considered to be inconsistent with the relevant actions of this plan.				

**Table 6-16: Assessment against relevant actions of the Sawfish and River Sharks Recovery Plan**

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
Sawfish and River Sharks Recovery Plan	<b>Objective 5:</b> Reduce and, where possible, eliminate adverse impacts of habitat degradation and modification on sawfish and river shark species	<b>Action 5c:</b> Identify risks to important sawfish and river shark habitat and measures needed to reduce those risks	Refer Sections 6.8.2 and 6.8.3 <b>Not inconsistent assessment:</b> 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 6.8.2 and 6.8.3 Detailed oil spill preparedness and response performance outcomes, standards and measurement criteria for the Petroleum Activity are presented in Appendix G

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Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
	<b>Objective 6:</b> 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	<b>Action 6a:</b> Assess the impacts of marine debris including ghost nets, fishing gear and plastics on sawfish and river shark species	Refer Section 6.8.5 <b>Not inconsistent assessment:</b> 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 Activity.  The proposed activity will remove infrastructure, including the majority of associated plastics, from the marine environment.	N/A
<b>Assessment summary</b> The Sawfish and River Sharks Recovery Plan has been considered during the assessment of impacts and risks and the Petroleum Activity is not considered to be inconsistent with the relevant actions of this plan.				

**Table 6-17: Assessment against relevant actions of the Marine Debris Threat Abatement Plan**

Part 13 statutory instrument	Relevant action areas/objectives	Relevant actions	Evaluation	Relevant EPO and EPS
Marine Debris Threat Abatement Plan	<b>Objective 2:</b> Understand the scale of marine plastic and microplastic impact on key species, ecological communities and locations	<b>Action 2.04:</b> Build understanding related to plastic and microplastic pollution	Refer Section 6.8.5 <b>Not inconsistent assessment:</b> 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 Activity.  The proposed activity will remove infrastructure, including the majority of associated plastics, from the marine environment.	N/A
<b>Assessment summary</b> The Marine Debris Threat Abatement Plan been considered during the assessment of impacts and risks and the Petroleum Activity is not considered to be inconsistent with the relevant actions of this plan.				

## 7. IMPLEMENTATION STRATEGY

### 7.1 Overview

Regulation 22 of the Environment Regulations requires an EP to contain an implementation strategy for the activity. The implementation strategy for the Petroleum Activity 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 EPS outlined in this EP are achieved.

Woodside, as Operator, is responsible for ensuring that the Petroleum Activity is managed in accordance with this Implementation Strategy and the WMS (Section 1.6).

### 7.2 Systems, practices, and procedures

All operational activities are planned and performed in accordance with relevant legislation and standards, management measures identified in this EP and internal environment standards and procedures (Section 6). The systems, practices and procedures that will be implemented are listed in the EPS adopted in Section 6.

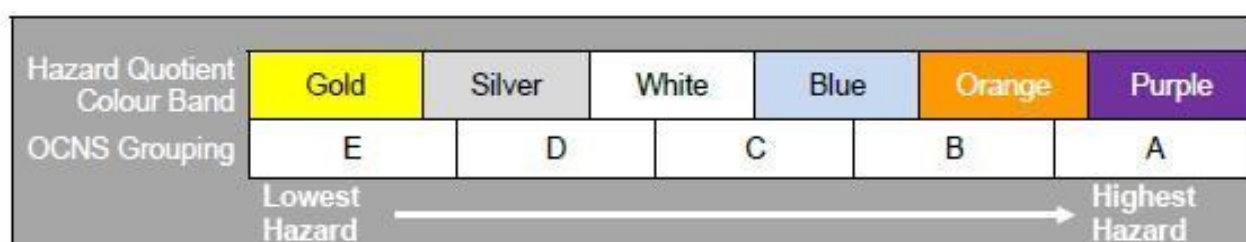
#### 7.2.1 Assessment of project fluids

All chemicals that may be operationally released or discharged to the marine environment by the Petroleum Activity are evaluated using a defined framework and set of tools to ensure the potential impacts are acceptable, ALARP and meet Woodside's expectation for environmental performance.

The chemical assessment process 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. It applies the requirements of the 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 on the OCNS ranked list of registered products have an assigned ranking based on toxicity and other relevant parameters, such as biodegradation and bioaccumulation, in accordance with one of two schemes (as shown in Figure 7-1):

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



**Figure 7-1: OCNS ranking scheme**

Chemicals fall into the following assessment types:

- No further assessment: Chemicals with an HQ band of Gold or Silver or an OCNS ranking of E or D with no substitution or product warnings do not require further assessment. Such chemicals do not represent a significant impact on the environment under standard use scenarios and are therefore considered ALARP and acceptable.
- Further assessment/ALARP justification required: The following types of chemicals require further assessment to understand the environmental impacts of discharge into the marine environment:
  - chemicals with no OCNS ranking

- chemicals with an HQ band of White, Blue, Orange or Purple or an OCNS ranking of A, B or C
- chemicals with an OCNS product or substitution warning.

## 7.2.2 Further Assessment/ALARP Justification

This includes assessing the ecotoxicity, biodegradation and bioaccumulation of the chemicals in the marine environment in accordance with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) Hazard assessment and the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

### 7.2.2.1 Ecotoxicity

Chemical ecotoxicity is assessed using the criteria used by CEFAS to group chemicals based on ecotoxicity results (Table 7-1). If a chemical has an aquatic or sediment toxicity within the criteria for the OCNS grouping of D or E, this is considered acceptable in terms of ecotoxicity.

**Table 7-1: Centre for Environment, Fisheries and Aquaculture Science's Offshore Chemical Notification Scheme (OCNS) grouping based on ecotoxicity results**

Initial Grouping	A	B	C	D	E
Results of aquatic toxicity data (ppm)	<1	>1–10	>10–100	>100–1,000	>1,000
Results for sediment toxicity data (ppm)	<10	>10–100	>100–1,000	>1,000–10,000	>10,000

*Note: aquatic toxicity refers to the Skeletonema costatum EC50, Acartia tonsa LC50 and Scopthalmus maximus (juvenile turbot) LC50 toxicity tests; sediment toxicity refers to Corophium volutator LC50 test.*

### 7.2.2.2 Biodegradation

The biodegradation of chemicals is assessed using the CEFAS biodegradation criteria, which align with the categorisation outlined in the DEMIRS Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

CEFAS categorises biodegradation into the following groups:

- Readily biodegradable: results of >60% biodegradation in 28 days to an OSPAR harmonised offshore chemical notification format (HOCNF) accepted ready biodegradation protocol
- Inherently biodegradable: results >20% and <60% to an OSPAR HOCNF accepted ready biodegradation protocol or result of >20% by OSPAR accepted inherent biodegradation study
- Not biodegradable: results from OSPAR HOCNF accepted biodegradation protocol or inherent biodegradation protocol are <20%, or half-life values derived from aquatic simulation test indicate persistence.

Chemicals with >60% biodegradation in 28 days to an OSPAR HOCNF accepted ready biodegradation protocol are considered acceptable in terms of biodegradation.

### 7.2.2.3 Bioaccumulation

The bioaccumulation of chemicals is assessed using the CEFAS bioaccumulation criteria, which align with the categorisation outlined in the DEMIRS Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline.

The following guidance is used by CEFAS:

- Non-bioaccumulative: Log Pow <3, or Bioconcentration Factor (BCF) ≤100 and molecular weight is ≥700
- Bioaccumulative: Log Pow ≥3 or BCF >100 and molecular weight is <700.

Chemicals that meet the non-bioaccumulative criteria are considered acceptable. If a product has no specific ecotoxicity, biodegradation or bioaccumulation data available, the following 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.

#### 7.2.2.4 Alternatives

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

#### 7.2.2.5 Decision

Once the further assessment/ALARP justification has been completed, the relevant environment adviser must concur that the environmental risk as a result of chemical use is ALARP and acceptable.

### 7.2.3 Woodside invasive marine species risk assessment process

#### 7.2.3.1 Objective and scope

To minimise the risk of introducing invasive marine species (IMS) as a result of the proposed activities, all applicable vessels and immersible equipment will be subject to Woodside's IMS risk assessment process (unless exempt as outlined below).

The objective of the risk assessment process is to identify the level of threat a contracted vessel, or immersible equipment poses if no additional risk reduction management measures are implemented. This allows Woodside (and its contractors) to apply management options that are commensurate to the identified level of risk.

The IMS risk assessment process does not apply to:

- vessels or immersible equipment that do not plan to enter the IMS Management Area (IMSMA)<sup>42</sup>
- 'new build' vessels or immersible equipment launched less than 14 days before mobilisation
- locally sourced vessels or immersible equipment from within the Western locally sourced zone<sup>43</sup>. Vessels, or immersible equipment are defined as locally sourced when the same supply facilities/port have been used since their last IMS inspection, full hull clean in dry dock or application of antifouling coating (AFC).

#### 7.2.3.2 Risk assessment process

Woodside's IMS risk assessment process was developed with regard to the national biofouling management guidelines for the petroleum production and exploration industry and guidelines for the control and management of a ships' biofouling to minimise the transfer of invasive aquatic species (International Maritime Organisation, 2023).

To effectively evaluate the potential for vessels and immersible equipment to introduce IMS, a risk assessment process has been developed to score and evaluate the risk posed by each project vessel, or

<sup>42</sup> The IMSMA is defined as all nearshore waters around Australia, extending from the lowest astronomical tide mark to 12 NM from land ('Territorial Seas', and including Australian territorial islands). The IMSMA also includes: (i) all waters which are shallower than the 50-metre depth contour outside of the 12 NM boundary, thereby encompassing submerged reefs and atolls, and (ii) Operational Area defined in environmental approvals. The IMSMA is based on current maritime boundary definitions, legal frameworks and requirements, IMS risk interpretations and existing management arrangements applied by Commonwealth and State/Territory regulatory agencies.

<sup>43</sup> The Western Locally Sourced Zone (W-LSZ) spans an area that includes the entire Western Australian coastline out to the Exclusive Economic Zone (EEZ) limit at 200 NM (excluding high environmental value areas, World Heritage Areas, Commonwealth Marine Reserve Sanctuary Zones and State Marine Management Areas and Marine Parks and any government-declared Quarantine Areas).

immersible equipment planning to undertake activities within an IMSMA or Operational Area. The risk assessment process considers a range of factors, as listed in Table 7-2 and Table 7-3.

The IMS risk assessments will be undertaken by a trained environment adviser who has completed relevant Woodside IMS training or by a qualified and experienced IMS inspector. A QA/QC process is implemented for all Woodside conducted IMS risk assessments where a secondary trained environment adviser verifies the assessment to minimise the risk of misapplication and errors within the risk assessment process.

**Table 7-2: Key factors considered as a part of the risk assessment process for vessels**

Factors	Details
Vessel type	The risk of IMS infection varies depending on the type of vessel undertaking the activity. A higher risk rating is applied for more complex, slow-moving vessels (e.g. dredges) in comparison to simple vessels (e.g. crew transfer vessel).
Recent IMS inspection and cleaning history, including for internal niches	In the case of biofouling on external hull niches, different risk ratings are applied depending on whether out-of-water or in-water IMS inspections by qualified IMS inspectors and cleaning (if required) have been undertaken prior to contract commencement. If an IMS inspection (and clean if required) has not been undertaken in the past 6 months (from the time of contract commencement), the highest risk factor is applied. The risk factor then lessens for vessels as the time between inspection and mobilisation reduces.
Out-of-water period before mobilisation	A risk reduction factor can be applied for vessels that are hauled out and then mobilised as deck cargo or by road during mobilisation, therefore becoming air dried over an extended period. Risk reduction factor increases with exposure time out of water.
Age and suitability of AFC at mobilisation date	AFC manufacturers provide a range of coatings, each designed to avoid premature coating failure if it is correctly applied and matched to the vessel's normal speeds and activity profile (i.e. proportion of time spent stationary or below 3 knots), and its main operational region (i.e. tropical, subtropical temperate). If the AFC type is deemed to be unknown, unsuited or absent, the highest risk value is applied. If the AFC type is suitable the risk factor applied reduces with age since application.
Internal treatment systems	A risk reduction factor applied if the vessel has an internal biological fouling control system in place at the time of assessment, or evidence of manual dosing.
Vessel origin and proposed area of operation	Differing risk ratings are assigned in relation to the climatic relationship between the vessel's origin and the proposed climatic region of the proposed area of operation. Highest risk rating is applied to similar climatic regions.
Number of stationary/slow speed periods >7 days	A risk factor is calculated based on the number of 7-day periods that the vessel has operated at stationary or at low speed (<3 knots) in port or coastal waters, which is any waters <50 m deep outside 12 NM from land or any waters within 12 NM of land. The greater the number of periods, the higher the risk factor applied.
Region of stationary or slow periods	A further multiplier is applied depending on the location of the stationary/slow speed periods. The highest risk rating applied if the stationary or slow speed periods occurred within ports or coastal waters of the same climatic region,
Type of activity – contact with seafloor	The potential for the introduction of IMS varies on the planned vessel activity taking place. Those activities that come in contact with sediments and thus have the potential to accumulate and harbour IMS in areas such as hoppers (dredges) and spud cans (drilling rigs) are considered to have a greater risk of infection.

**Table 7-3: Key factors considered as a part of the risk assessment process for immersible equipment**

Factors	Details
Region of deployment since last thorough clean, particularly coastal locations	Climatic region of use since last overhaul, thorough cleaning or prolonged period out of water (>28 days). Highest risk rating is applied to similar climatic regions. Activities occurring in nearshore areas (<50 m deep and/or within 12 NM from land) are given the highest risk rating.
Duration of deployments	Maximum duration of deployment (maximum time in water) since last overhaul or thorough cleaning. The longer the immersion period, the higher the risk rating applied.

Factors	Details
Duration of time out of water since last deployment	A further risk reduction factor can be applied for immersible equipment that has been out of the water for an extended period.
Transport conditions during mobilisation	If the equipment is stored in damp conditions, then a high-risk factor is applied, while if equipment is stored in dry and well ventilated (low humidity) conditions then a low risk factor is applied.
Post-retrieval maintenance regime	A risk reduction factor is applied if the equipment/item of interest is routinely washed, cleaned, checked and/or disassembled between project sites, while a higher risk rating is applied where no routine cleaning occurs.
Region of deployment since last thorough clean, particularly coastal locations	Climatic region of use since last overhaul, thorough cleaning or prolonged period out of water (>28 days). Highest risk rating is applied to similar climatic regions. Activities occurring in nearshore areas (<50 m deep and/or within 12 NM from land) are given the highest risk rating.
Duration of deployments	Maximum duration of deployment (maximum time in water) since last overhaul or thorough cleaning. The longer the immersion period, the higher the risk rating applied.

Following implementation of the risk assessment process, vessels and/or immersible equipment are classified as one of three risk categories:

- 'Low' – Low risk of introducing IMS of concern and hence no additional management required, or management options have been applied to reduce the risk
- 'Uncertain' – Risk of introducing IMS is not apparent and as such the precautionary approach is adopted, and additional management options may be required
- 'High' – High risk of introducing IMS means additional management options are required before this vessel mobilises to the Operational Area

Following the allocation of a 'low' risk rating for a vessel or immersible equipment, the information provided by the vessel operator for the purposes of risk assessment must be confirmed before mobilisation. For vessels or equipment classified as posing an 'uncertain' or 'high' theoretical risk, a range of management options are presented to reduce this theoretical risk to acceptable levels and achieve a low-risk status. These management options have been developed with the intention of reducing IMS risk to levels that are ALARP. It is a flexible approach that allows for a range of management actions to be tailored for a specific vessel movement. These will be assessed on a case-by-case basis and may include:

- having a suitably qualified and experienced IMS inspector inspect (desktop, in-water or dry dock) to verify risk status; where practicable, the inspection shall occur within seven days (but not more than fourteen days) before final departure to the Operational Area
- applying in-water or dry dock cleaning of the hull and other niche areas, typically applied where the risk assessment outcome is High risk driven by the age of the AFC on the vessel and its time spent in similar climatic region ports
- limiting the duration that the vessel spends within the IMSMA to a maximum of 48 hours (cumulative entries); applicable for Uncertain risk vessels only
- rejecting the vessel
- in some circumstances, such as emergency scenarios or in the presence of serious logistic constraints or other factors outside of the control of WEL, it may not be possible to effectively apply any of the IMS management measures available and described above. In the absence of regulatory conditions, commitments, or other legislative obligations that prescribe management measures for IMS, a risk assessed alternative process is available which must be approved by the relevant Business Vice President (VP), and HSE Vice President.

Before they enter the operation area, project vessels and immersible equipment are required to be a low risk of introducing IMS.



## 7.2.4 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:

- 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.
- Person who discovers the heritage object must inform the Activity Supervisor.
- Activity Supervisor must notify Woodside’s Principal Heritage Adviser.
- 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.
- No seabed disturbance may occur within the buffer area around the potential Underwater Cultural Heritage until approved by Woodside’s Principal Heritage Adviser.
- Woodside’s Principal Heritage Adviser must notify a qualified underwater archaeologist and provide all available documentation of the potential Underwater Cultural Heritage.
- 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.
- 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 *Underwater Cultural Heritage Act 2018* (UCH Act), Woodside’s Principal Heritage Advisor must notify the Minister responsible for the UCH Act, the Department of Climate Change, Energy, Environment and Water (DCCEEW) underwater archaeology section through the Australasian Underwater Cultural Heritage Database, and the Western Australian Museum.
- 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 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.
- Work must not recommence in the vicinity of the potential 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.

## 7.2.5 Waste Management

The petroleum activity will generate wastes from the operation of vessels (e.g., garbage), the removal of equipment from WA-3-L, and the decontamination of the equipment onshore (if required). The nature and scale of wastes generated directly by the petroleum activity are described in Section 6.8.5.

Woodside and its contractors have, or will, developed waste management plans that will be implemented during the petroleum activity. These include:

- vessel-specific waste management plans
- a recycling and disposal waste management plan for recovered equipment.

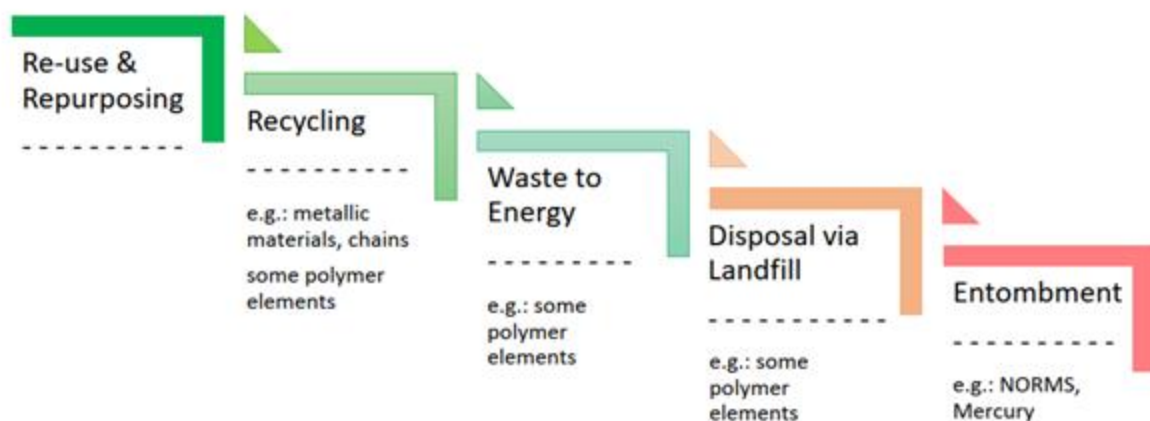
Vessel-specific waste management plans are standard requirements onboard vessels contracted by Woodside. These plans are routinely implemented by vessel contractors to meet relevant requirements, such as Marine Orders giving effect to MARPOL.

The recycling and disposal management plan details how the recovered equipment will be stored and disposed of. The plan details how waste materials will be managed in a safe and environmentally responsible way. The plan will be implemented by Woodside's contractors under Woodside's supervision, which will operate the onshore equipment recovery and decontamination facilities. Woodside will build on learnings from Woodside's current decommissioning projects in the north west shelf and utilise existing facilities in Karratha, Onslow and Henderson to process recyclable materials. Material will be weighed and tracked

Recovered infrastructure will be managed through the following, in accordance with the waste management hierarchy shown in Figure 7-2:

- Reduce (note, there are no opportunities to reduce the Angel subsea infrastructure waste)
- Reuse
- Recycle
- Waste to energy
- Disposal to landfill
- Entombment.

This hierarchy ranks disposal options from the most preferred (re-use and repurposing) to the least preferred (entombment).



**Figure 7-2: Equipment removal waste management hierarchy**

The final waste management strategy for each piece of recovered subsea infrastructure is being developed. The waste management hierarchy preferences have been provided to the waste management contractors during the tendering process.

Woodside is targeting a 90% landfill avoidance by weight for the combined Echo Yodel and Angel Subsea Infrastructure Removal campaign (this includes infrastructure recovered during the plug and abandonment component under the NWS Phase 1 Plug and Abandonment and TPA03 Well Intervention EP).

The contractor evaluation and selection process included:

- Issuing the onshore disposal/recycling sub-contract package to a variety of bidders including varying tier of company, geographic location, and core business. This was done to establish the industry capabilities in order to develop a functional execution plan.
- The evaluation criteria included:
  - offshore testing

- logistics capability
- provision of local yard & facilities
- onshore cleaning (hazardous materials)
- hazardous material disposal
- onshore deconstruction
- mixed material processing
- metallic recycling
- plastic recycling
- manpower & equipment.

The following preferences were made during the waste management contractor tender evaluation:

- Selection of preferred onshore discharge points and dismantling and clean-up sites is:
  - primarily driven by the proximity of the onshore discharge points / port facilities to the offshore field
  - additional evaluation criteria included port facilities and capabilities, port services availability, etc.
  - number of vessel trips between field and port for Angel subsea infrastructure removal scope
  - port locations considered
- Selection of dismantling and clean-up sites included in item above with preference for onshore locations that are in proximity to the port to minimise overland transportation and logistics requirements.
- Preference for waste management contractors who can follow the waste management hierarchy philosophy, to reduce waste disposal to landfill.

Woodside will establish a role, the Onshore Processing and Recycling Supervisor, that will conduct onsite surveying/verification of all retrieved infrastructure. The role is responsible for obtaining key chain-of-custody documentation from the contractor regarding the end-state of wastes generated during decommissioning. The Woodside Decommissioning Logistics Lead will conduct waste environmental audits on contractor and subcontractor sites prior to sites receiving retrieved infrastructure and during operations. This audit will be undertaken to confirm that the contractor has the facilities and systems to be able to manage wastes in an environmentally responsible manner and in accordance with the waste management plan.

Contaminants such as NORM and mercury may be present on the recovered production infrastructure. Once onboard the vessel, this equipment will be checked for contaminants and, if present, segregated from other waste. All equipment containing contaminants will be cleaned onshore. Clean recovered subsea infrastructure will be recycled if it meets clearance criteria. Recovered subsea infrastructure that doesn't meet clearance criteria and contaminated cleaning wastes will be disposed of at an approved facility in accordance with legislative requirements.

Woodside is committed to clear stewardship and assurance measures to verify implementation of the waste management plan under the agreement with the contractor. Woodside will maintain a register of final disposal details to maintain stewardship especially regarding hazardous wastes. Material will be tracked as they move from offshore recovery through the onshore receipt assessment, cleaning, decontamination, de-energising, and disposal stages. The waste management plan requires a tracking and reporting system be implemented to record details of all recovered equipment being recycled or disposed of.

Woodside is committed to re-using, repurposing and/or recycling as much of the decommissioning infrastructure as practicable. Any wastes generated during the petroleum activity, including recovery of well infrastructure, will be disposed in accordance with the recycling and disposal management plan.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed of by suitable waste management facilities.

Decontamination of potentially hazardous material will consist of:

- testing to quantify hazardous material and confirm the removal of hazards after decontamination

- internal flushing of structures and flexibles as required for processing and disposal
- collection of the wastewater and extraction of contaminated material
- disposal of contaminated waste through authorised facilities
- relocation of cleaned equipment from hazardous to non-hazardous storage locations for handover to the disposal pathway.

Metallic material, which comprises most of the equipment to be recovered, will be processed following decontamination (if required) by breaking it down for recycling. Tooling will be developed to process mixed material to separate metallic equipment from other materials (e.g., separating plastic coatings from chemical line steel carcasses). All metallic material, including metal recovered from mixed materials, is expected to be recycled. The complexity of recovering and recycling plastics is variable depending on the nature of the plastics; some plastic material may not feasibly be recycled. Material that cannot practicably be recycled will be disposed of in accordance with its waste classification. Non-hazardous waste, such as marine growth, general wastes, and plastics not suitable for recycling will be sent to landfill. Hazardous waste will be packaged, stored, transported, and disposed of in accordance with the WA Environmental Protection (Controlled Waste) Regulations 2004. Hazardous wastes are expected to be entombed with a dedicated long-term hazardous waste disposal facility.

The waste management plan will meet relevant requirements such as:

- classification and management of wastes in accordance with WA Environmental Protection (Controlled Waste) Regulations 2004
- the Minamata Convention
- the Basel Convention.

### 7.3 Roles and responsibilities

Key roles and responsibilities for Woodside and contractor personnel relating to implementing, managing and reviewing this EP are described in Table 7-4. Roles and responsibilities for oil spill preparation and response are outlined in Appendix G and Woodside's Hydrocarbon Spill Australia Regulatory Framework. It is the responsibility of Woodside and contractors to implement the Woodside Corporate Health, Safety and Environment Policy (Appendix A) in their areas of responsibility and to ensure that the personnel are suitably trained and competent in their respective roles.

**Table 7-4: Roles and responsibilities**

Title (role)	Environmental responsibilities
<b>All personnel</b>	
All offshore-based personnel and onshore support personnel	<ul style="list-style-type: none"> <li>• Understand the Woodside standards and procedures that apply to their area of work.</li> <li>• Understand the environmental risks and control measures that apply to their area of work.</li> <li>• Carry out assigned activities in accordance with approved procedures and the EP.</li> <li>• Follow instructions from relevant supervisor with respect to environmental protection.</li> <li>• Cease operations which are deemed to present an unacceptable risk to the environment.</li> <li>• Participate in environmental assurance activities and inspections as required.</li> <li>• Prompt reporting of environmental hazards/incidents to their supervisor and assist in event investigation.</li> <li>• Attend HSE meetings, training and drills when required.</li> </ul>

Title (role)	Environmental responsibilities
<b>Office-based personnel</b>	
Woodside Project Manager	<ul style="list-style-type: none"> <li>• Monitor and manage the activity so it is performed as per the relevant standards and commitments in this EP and approval conditions.</li> <li>• Notify the Woodside Environment Adviser in a timely manner of any scope changes.</li> <li>• Liaise with regulatory authorities as required.</li> <li>• Review this EP as necessary and manage change requests.</li> <li>• Provide sufficient resources to implement the permanent plugging-related management measures (i.e. controls, EPOs, PSs and MC) in this EP.</li> <li>• Ensure support vessel personnel are given an HSE Induction, as per Section 7.4.2 of this EP, at the start of the permanent plugging programs.</li> <li>• Verify that contractors meet environmental related contractual obligations.</li> <li>• Confirm controls and performance standards in this EP are actioned, as required, before permanent plugging commences.</li> <li>• Confirm environmental incident reporting meets regulatory requirements (as outlined in this EP) and Woodside's HSE Reporting and Investigation Procedure.</li> <li>• Monitor and close out corrective actions identified during environmental monitoring or audits.</li> </ul>
Subsea Delivery Lead	<ul style="list-style-type: none"> <li>• Monitor and manage the activity so it is performed as per the relevant standards and commitments in this EP and approval conditions.</li> <li>• Notify the Woodside Environment Adviser in a timely manner of any scope changes.</li> <li>• Liaise with regulatory authorities as required.</li> <li>• Provide sufficient resources to implement the subsea related management measures (i.e. controls, EPOs, PSs and MC) in this EP.</li> <li>• Ensure vessel personnel are given an HSE Induction, as per Section 7.4.2 of this EP, at the start of the activities.</li> <li>• Verify that contractors meet environmental related contractual obligations.</li> <li>• Confirm controls and performance standards in this EP are actioned, as required, before activities commence.</li> <li>• Ensure relevant vessels meet the requirements of Woodside's Marine Operations Operating Standard.</li> <li>• Review this EP and manage change requests for the activity.</li> <li>• Confirm that site-based personnel are given an HSE Induction, as per Section 7.4.2 of this EP, at the start of the activity.</li> <li>• Ensure all chemicals proposed to be discharged are assessed and approved as per the requirements of the EP.</li> <li>• Confirm environmental incident reporting meets regulatory requirements (as outlined in this EP) and Woodside's HSE Reporting and Investigation Procedure.</li> <li>• Monitor and close out corrective actions identified during environmental monitoring or audits.</li> </ul>

Title (role)	Environmental responsibilities
Woodside Environmental Adviser	<ul style="list-style-type: none"> <li>• Verify relevant Environmental Approvals for the activities exist before commencing activity.</li> <li>• Track compliance with performance outcomes and performance standards as per the requirements of this EP.</li> <li>• Prepare environmental component of relevant Induction Package.</li> <li>• Assist with the review, investigation and reporting of environmental incidents.</li> <li>• Ensure environmental monitoring and inspections/audits are performed as per the requirements of this EP.</li> <li>• Liaise with relevant regulatory authorities as required.</li> <li>• Assist in preparing required external regulatory reports, in line with environmental approval requirements and Woodside incident reporting procedures.</li> <li>• Monitor and close out corrective actions (Campaign Action Register) identified during environmental monitoring or audits.</li> <li>• Provide advice to relevant Woodside personnel and contractors to help them understand their environment responsibilities, including: <ul style="list-style-type: none"> <li>– implementation of the adaptive management arrangements in this EP for underwater noise</li> <li>– Implementation of the Frontline Offshore Seabird Management Plan</li> </ul> </li> <li>• Liaise with contractors to ensure communication and understanding of environment requirements as outlined in this EP and in line with Woodside's Compass values and management systems.</li> </ul>
Woodside Corporate Affairs Adviser	<ul style="list-style-type: none"> <li>• Prepare and implement the Stakeholder Consultation Plan for the Petroleum Activity.</li> <li>• Report on stakeholder consultation.</li> <li>• Continuously liaise and provide notification as required as outlined in the EP.</li> </ul>
Woodside Marine Assurance Superintendent	<ul style="list-style-type: none"> <li>• Conduct relevant audit and inspection to confirm vessels comply with relevant Marine Orders and Woodside Marine Charters Instructions requirements to meet safety, navigation and emergency response requirements.</li> </ul>
Corporate Incident Management Team (CIMT) Incident Commander (IC)	<p>On receiving notification of an incident, the Woodside Corporate Incident Management Team (CIMT) Incident Commander (IC) shall:</p> <ul style="list-style-type: none"> <li>• establish and take control of the Incident Management Team and establish an appropriate command structure for the incident</li> <li>• assess the situation, identify risks and actions to minimise the risk</li> <li>• communicate impact, risk and progress to the Crisis Management Team and stakeholders</li> <li>• develop the Incident Action Plan (IAP), including objectives for action</li> <li>• approve, implement and manage the IAP</li> <li>• communicate within and beyond the incident management structure</li> <li>• manage and review safety of responders</li> <li>• address the broader public safety considerations</li> <li>• conclude and review activities.</li> </ul>
<b>Vessel-based personnel</b>	
Vessels Master	<ul style="list-style-type: none"> <li>• Ensure personnel commencing work on the vessel receive an environmental induction that meets the relevant requirements specified in this EP.</li> <li>• Ensure personnel are competent to perform the work they have been assigned.</li> <li>• Verify SOPEP drills are conducted as per the vessel's schedule.</li> <li>• Ensure the vessel Emergency Response Team has been given sufficient training to implement the SOPEP.</li> <li>• Ensure any environmental incidents or breaches of relevant EPOs or PSs detailed in this EP are reported immediately to the Woodside Well Site Manager.</li> <li>• Ensure corrective actions for incidents or breaches are developed, communicated to the Well Site Manager, and tracked to close-out in a timely manner. Ensure close-out of actions is communicated to the Well Site Manager.</li> </ul>

Title (role)	Environmental responsibilities
Vessel Logistics Coordinators	<ul style="list-style-type: none"> <li>Ensure waste is managed on the relevant support vessels and sent to shore as per the relevant WMP.</li> </ul>
Contractor Project Manager	<ul style="list-style-type: none"> <li>Confirm activities are performed in accordance with this EP, as detailed in the Woodside-approved Contractor Environmental Management Plan.</li> <li>Ensure personnel commencing work on the project receive a relevant environmental induction that meets the requirements specified in this EP.</li> <li>Ensure personnel are competent to perform the work they have been assigned.</li> <li>Ensure any environmental incidents or breaches of objectives, standards or criteria outlined in this EP, are reported immediately to the Woodside Responsible Engineer or Vessel Master.</li> </ul>
Woodside Site Representative/ Resident Engineer	<ul style="list-style-type: none"> <li>Ensure activities are undertaken as detailed in this EP.</li> <li>Ensure the management measures made in this EP are implemented on the vessel.</li> <li>Ensure environmental incidents or breaches of objectives, standards or criteria outlined in this EP, are reported as per the Woodside Corporate Event Notification Matrix.</li> <li>Verify HSE improvement actions identified during the project are implemented where practicable.</li> <li>Ensure periodic environmental inspections are completed.</li> </ul>

## 7.4 Training and competency

### 7.4.1 Overview

Woodside as part of its contracting process assesses a proposed contractor's environmental management systems to determine the level of compliance with the standard AS/NZ ISO 14001. This assessment is performed for the Petroleum Activity as part of the pre-mobilisation process. The assessment determines whether there is a clearly defined organisational structure that sets out the roles and responsibilities for key positions. The assessment also assesses whether there is an up-to-date training matrix that defines any corporate and site/activity-specific environmental training and competency requirements.

As a minimum, environmental awareness training is required for all personnel, detailing awareness and compliance with the contractor's environmental policy and EMS.

### 7.4.2 Inductions

Inductions are provided to all relevant personnel (e.g. contractors and Company representatives) before mobilising to or on arrival at the activity location. The induction covers the HSE requirements and environmental information specific to the activity location. Attendance records will be maintained.

The induction may include, but is not limited to:

- description of the activity
- ecological and socio-economic values of the activity location
- regulations relevant to the activity
- Woodside's Environmental Management System – Health Safety and Environment Policy
- EP importance/structure/implementation/roles and responsibilities
- main environmental aspects/hazards and potential environmental impacts and related EPOs
- oil spill preparedness and response
- monitoring and reporting on EPOs and standards using measurement criteria
- incident reporting.

### 7.4.3 Petroleum activity-specific environmental awareness

Before commencing the subsea campaigns associated with the Petroleum Activity, a pre-activity meeting will be held with all relevant personnel. The pre-activity meeting provides an opportunity to reiterate specific environmental sensitivities or commitments associated with the activity. Relevant sections of the pre-activity meeting will also be communicated to the support vessel personnel. Attendance lists are recorded and retained.

During operations, regular HSE meetings will be held. During these meetings, recent environmental incidents are reviewed and awareness material presented.

## 7.5 Monitoring, auditing, and managing non-conformance and review

### 7.5.1 Monitoring

Regulation 22(5) 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 Petroleum Activity 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.

A key tool that is used throughout the implementation of the EP is Woodside's environmental compliance and action register (ECAR). This is an internal tool that is developed at EP acceptance and is maintained until the EP is closed. The ECAR contains all the commitments, controls, performance standards and measurement criteria from the EP and tracks compliance against each of these items. Before a project vessel is mobilised, Woodside confirms the compliance systems in place on the vessel and identifies, and records in the ECAR, the specific records that will be provided by the vessel contractor during the offshore campaign. This provides Woodside with the opportunity to confirm the records provided during the activity are sufficient for demonstrating compliance against the EP. It also serves as a central depository for compliance information relevant to each Petroleum Activity.

### 7.5.2 Auditing

Environmental performance auditing will be performed to:

- identify potential new, or changes to existing environmental impacts and risk, and methods for reducing those to ALARP
- confirm that mitigation measures detailed in this EP are effectively reducing environmental impacts and risk, that mitigation measures proposed are practicable and provide appropriate information to verify compliance
- confirm compliance with the Performance Outcomes, Controls and Standards detailed in this EP.
- Internal auditing will be performed to cover each key project activity as summarised below.

#### 7.5.2.1 Subsea activities

The following internal auditing will be performed for the subsea activities:

- Pre-mobilisation inspection/audit report will be conducted by a relevant person (before commencing). The scope of the audits are risk-based and specific to the relevant activity, but will generally focus on aspects relating to ensuring appropriate understanding of environmental commitments and the operational readiness of the activity scope, including appropriate environmental controls in place. All primary vessels associated with the above scopes will be audited by Woodside. Support or transport vessels will be assessed on a risk-based approach but will be audited via the primary subsea installation contractor's process.
- At least one operational compliance audit relevant to applicable EP commitments will be conducted by a Woodside Environment Adviser for the subsea campaign. The audit may be conducted offshore or



office-based, subject to the duration of the activity and logistics of performing the audit offshore for short duration scopes.

Contractor-specific HSE audits will also be conducted of the associated support vessels. The audits will consider the implementation of HSE management, risk management, as well as pre-mobilisation and offshore readiness.

Vessel-based HSE inspections will be conducted fortnightly by vessel HSE personnel. Each inspection will focus on a specific risk area relevant to the project activity and a formal report will be issued (e.g. bunkering controls, chemical and discharge management, cetacean reporting).

The internal audits and reviews, combined with the ongoing monitoring described in this EP, and collection of evidence for MC are used to assess EPOs and standards.

As part of Woodside's Environmental Management System (EMS) and/or assurances processes, activities may also be periodically selected for environmental audits as per Woodside's internal auditing process. Audit, inspection and review findings relevant to continuous improvement of environmental performance are tracked through the ECAR.

Non-conformances identified will be reported and/or tracked in accordance with this EP.

#### 7.5.2.2 Marine assurance

Woodside's marine assurance is managed by the Marine Assurance Team of the Logistics Function 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.

The process is mandatory for all vessels (other than tankers and floating production storage and offloading vessels) hired for Woodside operations, 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 following marine assurance activities:

- offshore vessel management system assessment (OVMSA)
- dynamic positioning (DP) system verification
- vessel inspections
- offshore vessel inspection database (OVID) or condition and suitability assessment
- 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. Woodside Marine Assurance Specialist will conduct a risk assessment on the vessel to determine the level of assurance applied and the type of vessel inspection required.

Methods of vessel inspection may include, and are not limited to:

- Woodside Marine Vessel Inspection
- Oil Companies International Marine Forum OVID Inspection
- International Marine Contractors Association Common Marine Inspection Document 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, there does exist an opportunity to further scrutinise the proposed vessel.

If a vessel inspection and/or OVMSA verification review is not available and all reasonable efforts based on time and resource availability have been made to complete this (e.g. short-term vessel hire), the Marine Assurance Specialist Offshore may approve the use of an alternative means of inspection, known as a risk assessment.

### 7.5.2.3 Risk assessment

Woodside conducts a risk assessment of vessels where either an OVMSA Verification Review and/or vessel inspection cannot be completed. This is not a regular occurrence and is typically used when the requirements of the assurance process are unable to be met, or the processes detailed are not applicable to a proposed vessel(s). The Marine Vessel Risk Assessment will be conducted by the Marine Assurance Specialist, where the vessel meets the short-term hire prerequisites.

The risk assessment is a semi-quantitative method of determining what further assurance process activity, if any, is required to assure a vessel for a particular task or role. The process compares the level of management control a vessel is subject to against the risk factors associated with the activity or role.

Several factors are assessed as part of a vessel risk assessment, including:

- Management control factors:
  - Company audit score (i.e. management system)
  - vessel HSE incidents
  - vessel Port State Control deficiencies
  - instances of Port State Control vessel detainment
  - years since previous satisfactory vessel inspection
  - age of vessel
  - contractors' prior experience operating for Woodside.
- Activity risk factors:
  - people health and safety risks (a function of the nature of the work and the area of operation)
  - environmental risks (a function of environmental sensitivity, activity type and magnitude of potential environment damage (e.g. largest credible oil spill scenario))
  - value risk (likely time and cost consequence to Woodside if the vessel becomes unusable)
  - reputation risk
  - exposure (i.e. exposure to risk based on duration of project)
  - industrial relations risk.

The acceptability of the vessel or requirement for further vessel inspections or audits is based on the ratio of vessel score to activity risk. If the vessel management control is not deemed to appropriately manage activity risk, a satisfactory company audit and/or vessel inspection may be required before awarding work.

The risk assessment is valid for the period a vessel is on hire and for the defined scope of work.

### 7.5.3 Management of non-conformance

Woodside classifies non-conformances with EPOs and standards in this EP as environmental incidents. Woodside employees and contractors are required to report all environmental incidents, and these are managed as per Woodside's HSE Event Reporting and Investigation Procedure which includes learning requirements.

An internal computerised database called First Priority is used to record and report these incidents. Details of the event, immediate action taken to control the situation, investigation outcomes and corrective actions to prevent recurrence are all recorded. Corrective actions are monitored using First Priority and closed out in a timely manner.

Woodside uses a consequence matrix for classification of environmental incidents, with the significant categories being A, B and C. Detailed investigations are completed for all categories A, B, C and high potential environmental incidents.

## **7.5.4 Review**

### **7.5.4.1 Management review**

Within the Environment Function, senior management regularly monitor and review environmental performance and the effectiveness of managing environmental risks and performance. Within each Function and Business Unit Leadership Team (e.g. Drilling and Completions, Subsea and Developments/Projects), managers review environmental performance regularly, including through quarterly HSE review meetings.

Woodside's Environment Team will perform six-monthly reviews of the effectiveness of the implementation strategy and associated tools. This will involve reviewing the:

- Subsea infrastructure removal key performance indicators (KPIs)
- tools and systems to monitor environmental performance
- lessons learned about implementation tools and throughout each campaign
- reviews of oil spill arrangements and testing are performed in accordance with this EP.

### **7.5.4.2 Learning and knowledge sharing**

Learning and knowledge sharing occurs via several different methods including:

- event investigations
- event bulletins
- after action review conducted at the end of each well, including review of environmental incidents as relevant
- ongoing communication with vessel operators
- formal and informal industry benchmarking
- cross-asset learnings
- engineering and technical authorities discipline communications and sharing.

### **7.5.4.3 Review of impacts, risks and controls across the life of the EP**

In the unlikely case that activities described in this EP do not occur continuously or sequentially, before recommending activities after a cessation period greater than 12 months, impacts, risks and controls will be reviewed.

The process will identify, or review impacts and risks associated with the newly-commencing activity, and will identify or review controls to ensure impacts and risks remain/are reduced to ALARP and acceptable levels. Information learned from previous activities conducted under this EP will be considered. Controls which have previously been excluded on the basis of proportionality will be reconsidered. Any required changes will be managed by the MOC process outlined below.

## **7.6 Management of knowledge**

Review of knowledge relevant to the existing environment is undertaken 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). New knowledge checks take place both routinely primarily via quarterly and annual knowledge reviews and ad hoc (as information is obtained), and encompasses the following topics:

- Environmental science – update checks conducted via desktop reviews: scientific literature, government publications and Woodside supported publications and studies relating to existing environment topics (including but not limited to species and habitats) as well as EPBC Act Matters of National Environmental Significance (Part 3) and Part 13 statutory instruments.

- Socio-economic environment and stakeholder information – update checks conducted via desktop reviews: scientific literature, government publications and Woodside consultation; and,
- Environmental legislation – monitoring of emerging regulatory changes and the subsequent management of regulatory change (as outlined in the WMS Regulatory Compliance Management Procedure).

A management of knowledge tracker is maintained to record reviews and updates. Communication of relevant new knowledge is addressed at the EP Consolidation meetings where changes in knowledge prompt a consideration of MOC, this is actioned and documented appropriately.

The frequency and documentation of reviews, communication of relevant new knowledge and consideration of MOC are documented in the WMS EP Guideline.

Any relevant new information on cultural values and heritage will be assessed using the EP Management of Change Process.

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 Management of change and revision

### 7.7.1 EP management of change

Management of changes are managed in accordance with Woodside's Environmental Approval Requirements Australia Commonwealth Guideline. Management of changes relevant to this EP, concerning the scope of the activity description described in this EP including: review of advances in technology at stages where new equipment may be selected such as vessel contracting; changes in understanding of the environment, EPBC Act listed threatened and migratory species status, Part 13 statutory instruments (recovery plans, threat abatement plans, conservation advice, wildlife conservation plans) and current requirements for AMPs; and potential new advice from external stakeholders, will be managed in accordance with Regulation 39 of the Environment Regulations.

Risk will be assessed in accordance with the environmental risk management methodology detailed in this EP to determine the significance of any potential new environmental impacts or risks not provided for in this EP. Risk assessment outcomes are reviewed in compliance with Regulation 39 of the Environment Regulations.

Minor changes where a review of the activity and the environmental risks and impacts of the activity do not trigger a requirement for a formal revision under Regulation 39 of the Environment Regulations, will be considered a 'minor revision'. Minor administrative changes to this EP, where an assessment of the environmental risks and impacts is not required (e.g. document references, phone numbers, etc.), will also be considered a 'minor revision'. Minor revisions as defined above will be made to this EP using Woodside's document control process. Minor revisions will be tracked in an MOC Register to ensure visibility of cumulative risk changes, as well as enable internal EP updates/reissuing as required. This document will be made available to NOPSEMA during regulator environment inspections.

### 7.7.2 OPEP management of change

Relevant documents from the OPEP will be reviewed in the following circumstances:

- 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
- the 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' changes.

Where changes are required to the OPEP, based on the outcomes of the reviews described above, they will be assessed against Regulation 39 to determine if EP, including OPEP, resubmission is. Changes with potential to influence minor or technical changes to the OPEP are tracked in MOC records, project records and incorporated during internal updates of the OPEP or the five-yearly revision.

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.

## 7.8 Record keeping

Compliance records referenced in the measurement criteria contained within this EP will be maintained. Many of the measurement criteria listed in this EP refers to 'records', in this context Woodside considers 'records' to mean any hard or soft copy of information such as data, observations, certifications or photographs that can show a point in time and can be duplicated such that they can be stored in compliance systems and/or provided to internal and external auditors (i.e. NOPSEMA) on request.

Record keeping will be in accordance with Regulation 22(6) that addresses maintaining records of emissions and discharges.

## 7.9 Ongoing consultation

Although consultation for the purpose of Regulation 25 is complete, in accordance with Regulation 22(9) 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 relevant interested persons throughout the life of the EP. Recent new information identified during ongoing consultation will be assessed as appropriate using the EP Management of Knowledge system and Management of Change Process.

Woodside hosts community forums at which members are provided updates on Woodside activities on a regular basis (for example community reference group meetings). Representatives who are present at those meetings 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.

Relevant persons and those who are simply interested in the activities, can otherwise remain up to date on this activity through subscribing to the Woodside website, or by reading the publicly available version of the EP on NOPSEMA's website, where available.

Should consultation feedback be received following EP acceptance that identifies relevant new information or a measure or control that requires implementation or update to meet the intended outcome of consultation, Woodside will apply its EP Management of Knowledge process and Management of Change Process as appropriate.

Woodside has developed a Program of Ongoing Engagement with Traditional Custodians (Appendix I), which complies with Corporate Woodside Policies Strategies and procedures and is 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 relating to the activity and in relation to caring for and managing country, including Sea Country. The Program will be tailored to each Traditional Custodian group and may include, as agreed with relevant Traditional Custodians:

- social investment to support Indigenous ranger programs
- support for Indigenous oil spill response capabilities
- support for recording Sea Country values
- support to Traditional Custodian groups to build capabilities and capacity with respect to ability to engage with Woodside and the broader oil and gas industry on activities

- development of ongoing relationships with Traditional Custodian groups
- any other initiatives proposed for protecting Country, including cultural values.

At the time of EP submission, a number of specific activities as part of ongoing consultation regarding the activity are planned with Traditional Custodians. These are described in Appendix I. Where Traditional Custodian relevant persons have requested information or further engagement considered as ongoing consultation, but have not requested a framework agreement, these requests have been captured in Table 7-5. However, a framework agreement may still be initiated by these groups at any time.

**Table 7-5: Ongoing consultation engagements**

Report/ information	Recipient	Purpose	Frequency	Content
Program of Ongoing Engagement with Traditional Custodians (Appendix I)	Relevant cultural authorities	Ongoing engagement.	Ongoing. Progress on the Program will be reported in line with annual sustainability reporting via the Woodside website. Responses to any feedback received by Traditional Custodian groups will be provided by Woodside within four weeks of receipt.	Assessment of cultural values. Any relevant new information on cultural values will be assessed using the EP Management of knowledge (refer to Section 7.6) and Management of Change Process (refer to Section 7.7).
Notification (email)	AHO	Good practice	No less than 4 weeks prior to commencement and after completion of activities.	PS 1.3 (Section 6.7.1). Date of activity start and end.
Updates (email)			As required.	Changes to planned activities.
Updates (email)			Provide updates to the AHO should there be changes to the activity.	Changes to planned activities.
Notification (email)	AMSA Response Centre (ARC)	Good practice	At least 24-48 hours before operations commence.	PS 1.4 (Section 6.7.1). Date of activity start.
Updates (email)			Provide updates should there be changes to the activity.	Changes to planned activities.
Notification (email)	DEMIRS	Good practice.	At least 10 days prior to commencement.	Activity start date.
Notification (email)	AFMA DAFF – Fisheries DPIRD WAFIC CFA Recfishwest Relevant Commonwealth fishery licence holders (North West Slope and Trawl Fishery and Western Deepwater Trawl Fishery)	Good practice	At least 10 days prior to commencement and following completion of activities.	PS 1.5 (Section 6.7.1) Date of activity start and end.

Report/ information	Recipient	Purpose	Frequency	Content
	Adjacent titleholder (Santos)			
Notification (email)	All relevant 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 Knowledge Management System (refer to Section 7.6) and Management of Change Process (refer to Section 7.7).
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 7.6) and Management of change and revision Process (refer to Section 7.7).

## 7.10 Reporting

To meet the EPOs and EPSs outlined in this EP, Woodside reports at a number of levels, as outlined in the next sections.

### 7.10.1 Routine reporting (internal)

#### 7.10.1.1 Regular health, safety and environment meetings

The project support vessel will hold regular HSE meetings which cover all crews. During these meetings, environmental incidents will be reviewed, and awareness material presented. All personnel are required to attend the HSE meetings and attendances sheets are retained by the project vessel contractor. Daily meetings held onboard the project support vessel will also serve to reinforce environmental awareness during the Petroleum Activity.

Dedicated HSE meetings will also be held with the offshore and Perth-based management to address targeted HSE incidents and initiatives.

#### 7.10.1.2 Performance reporting

Monthly and quarterly performance reports are developed and reviewed by the Function and Business Unit Leadership Teams. These reports cover several subject matters, including:

- HSE incidents (including high potential incidents and those related to this EP) and recent activities
- corporate KPI targets, which include environmental metrics
- outstanding actions as a result of audits or incident investigations
- technical high and low lights.

## 7.10.2 Routine reporting (external)

### 7.10.2.1 Start and end notifications of the Petroleum Activity

In accordance with Regulation 54, Woodside will notify NOPSEMA of the start of the Petroleum Activity at least 10 days before the activity commences and will notify NOPSEMA within 10 days of completing the activity.

### 7.10.2.2 Environmental performance review and reporting

In accordance with applicable environmental legislation for the activity, Woodside is required to report information about environmental performance to the appropriate regulator. Regulatory reporting requirements are summarised in Table 7-6.

**Table 7-6: Routine external reporting requirements**

Report	Recipient	Frequency	Content
Monthly Recordable Incident Reports (Appendix E)	NOPSEMA	Monthly, by the 15th of each month	Details of recordable incidents that have occurred during the Petroleum Activity for previous month (if applicable)
Environmental Performance Report	NOPSEMA	Annually, with the first report submitted within 12 months of the commencement of the Petroleum Activity covered by this EP (as per the requirements of Regulation 22(7))	<ul style="list-style-type: none"> <li>Compliance with EPOs, controls and EPSs outlined in this EP, in accordance with the Environment Regulations</li> <li>Decommissioning progress update</li> </ul>

### 7.10.2.3 End of the Environmental Plan

The EP will end when Woodside notifies NOPSEMA that the Petroleum Activity has ended and all of the obligations identified in this EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 46 of the Environment Regulations.

## 7.10.3 Incident reporting (internal)

It is the responsibility of the Woodside Project Manager to ensure reporting of environmental incidents meets Woodside and regulatory reporting requirements as detailed in the Woodside HSE Event Reporting and Investigation Procedure and this section of this EP.

## 7.10.4 Incident reporting (external) – Reportable and recordable

### 7.10.4.1 Reportable incidents

#### Definition

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 Activity is:
  - an incident that has caused environmental damage with a Consequence Level of Moderate (C) or above (as defined under Woodside’s Risk Table)
  - 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).

The environmental risk assessment for the Petroleum Activity 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 the marine environment resulting from a vessel fuel tank rupture.

Any such incidents represent potential events which would be reportable incidents. Incident reporting is performed with consideration of NOPSEMA (2014) 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 Environment Regulations.

### 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:

- report all reportable incidents to the regulator (orally) as soon as practicable, but within 2 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 and the department of the responsible State Minister (DEMIRS) As soon as practicable after orally reporting the incident
- complete a written report for all reportable incidents using a format consistent with the NOPSEMA Form FM0831 – Reportable Environmental Incident (Appendix E) which must be submitted to NOPSEMA as soon as possible (ASAP), but within 3 days of the incident or of its detection by Woodside
- provide a copy of the written report to the National Offshore Petroleum Titles Administrator and DEMIRS, within 7 days of the written report being provided to NOPSEMA.

Australian Maritime Safety Authority (AMSA) will be notified of oil spill incidents ASAP after their occurrence, and DCCEEW notified if MNES are to be affected by the oil spill incident.

### 7.10.4.2 Recordable incidents

#### Definition

A recordable incident as defined under Regulation 5 of the Environment Regulations is an incident arising from the activity that 'breaches an EPO or EPS, in the EP that applies to the activity, that is not a reportable incident'.

#### Notification

NOPSEMA will be notified of all recordable incidents, according to the requirements of Regulation 50(4), no later than 15 days after the end of the calendar month using the NOPSEMA Form – Recordable Environmental Incident Monthly Summary Report (Appendix E), detailing:

- all recordable incidents that occurred during the calendar month
- all material facts and circumstances concerning the recordable incidents that the operator knows or is able, by reasonable search or enquiry, to find out
- any action taken to avoid or mitigate any adverse environment impacts of the recordable incidents
- the corrective action that has been taken, or is proposed to be taken, to prevent similar recordable incidents
- the action that has been taken, or is proposed to be taken, to prevent a similar incident occurring.

### 7.10.4.3 Other external incident reporting requirements

In addition to the notification and reporting of environmental incidents defined under the Environment Regulations and Woodside requirements, Table 7-7 describes the incident reporting requirements that also apply in the Operational Area.

The pollution activities that should also be reported to AMSA via RCC Australia by the Vessel Master are:

- any loss of plastic material
- garbage disposed of in the sea within 12 NM of land (garbage includes food, paper, bottles and such)

- any loss of hazardous materials.

For oil spill incidents, other agencies and organisations will be notified as appropriate to the nature and scale of the incident as per procedures and contacts in the Hydrocarbon Spill Australia Regulatory Framework and the First Strike Plan (Appendix H).

External incident reporting requirements under the OPGGS (Safety) Regulations, including under Sub Regulation 2.42, notices and reports of dangerous occurrences will be reported to NOPSEMA under the approved activity safety cases.

**Table 7-7: External incident reporting requirements**

Event	Responsibility	Notifiable party	Notification requirements	Contact	Contact detail
Any marine incidents during PAP	Vessel Master	AMSA	Incident Alert Form 18 as soon as reasonably practicable Within 72 hours after becoming aware of the incident, submit Incident Report Form 19	AMSA	<a href="mailto:reports@amsa.gov.au">reports@amsa.gov.au</a>
Oil pollution incidents in Commonwealth waters	Vessel Master	AMSA Rescue Coordination Centre (RCC)	As per Article 8 and Protocol I of MARPOL within 2 hours via the national emergency 24-hour notification contacts and a written report within 24 hours of the request by AMSA	AMSA RCC Australia	If the ship is at sea, reports are to be made to: Free call: 1800 641 792 Phone: 08 9430 2100 (Fremantle)
Oil pollution incidents in Commonwealth waters	Vessel Master	AMSA	Without delay as per the Commonwealth <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> , part II, section 11(1), AMSA RCC notified verbally via the national emergency 24-hour notification contact of the hydrocarbon spill; follow up with a written Pollution Report ASAP after verbal notification	RCC Australia	Phone: 1800 641 792 OR +61 2 6230 6811
Any oil pollution incident which has the potential to enter a National Park or requires oil spill response activities to be conducted within a National Park	Vessel Master	DCCEEW	Reported verbally, ASAP	DNP	Phone: 02 6274 2220

Event	Responsibility	Notifiable party	Notification requirements	Contact	Contact detail
Activity that causes unintentional death of or injury to fauna species listed as Threatened or Migratory under the EPBC Act	Vessel Master	DCCEEW	Within 7 days of becoming aware	Secretary of the DCCEEW	Phone: 1800 803 772 Email: <a href="mailto:protected.species@environment.gov.au">protected.species@environment.gov.au</a>
Within 2 hours of becoming aware of a marine pollution incident (MOP) that occurs in or may impact state waters	CIMT IC or delegate	Department of Transport (DoT)	Verbally notify DoT's Maritime Environmental Emergency Response Unit (DoT MEER) Duty Officer that a spill has occurred and, if required, request use of equipment stored in Karratha. Follow up with a written pollution reports 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 Incident Management Team (IMT).	DoT MEER Duty Officer	Phone: 08 9480 9924
Within 24 hours of Woodside reporting an oil spill or discharge of any pollutant that impacts state waters to the appropriate authority (e.g. DoT)	CIMT IC or delegate	DPIRD	Notification to DPIRD via email within 24 hours of Woodside reporting the incident to the appropriate authority		Email: <a href="mailto:environment@dpird.wa.gov.au">environment@dpird.wa.gov.au</a>
Within 24 hours of detection of suspected or confirmed presence / introduction of any marine pest in	Qualified IMS Inspector, Woodside Environment Advisor or Contractor.	DPIRD	Report suspected or confirmed presence / introduction of any marine pest detected within Western Australian waters to the department	DPIRD WA FishWatch	Email: <a href="mailto:aquatic.biosecurity@dpird.wa.gov.au">aquatic.biosecurity@dpird.wa.gov.au</a> Phone: 1800 815 507

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Event	Responsibility	Notifiable party	Notification requirements	Contact	Contact detail
Western Australian waters.			within 24 hours by email or phone.		

## 7.11 Emergency preparedness and response

### 7.11.1 Overview

Under Regulation 22(8), the implementation strategy must contain an oil pollution emergency plan (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.

Table 7-8 summarises how this EP and supporting documents address the various requirements of Environment Regulations relating to oil pollution response arrangements.

**Table 7-8: 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), (6), 22 (2)	Oil Spill Preparedness and Response Mitigation Assessment (Appendix G)
Describes the oil pollution emergency plan	Regulation 22(8)	Woodside's oil pollution emergency plan has the following components:  Hydrocarbon Spill Australia Regulatory Framework  Angel Subsea Infrastructure Removal Oil Pollution First Strike Plan (Appendix H)  Oil Spill Preparedness and Response Mitigation Assessment (Appendix G).
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 (Appendix G).  Oil Pollution First Strike Plan (Appendix H).
Details the arrangements for updating and testing the oil pollution response arrangements	Regulation 22(8), 22(12), 22(13), 22(14)	EP: Section 6.8.2  Oil Spill Preparedness and Response Mitigation Assessment (Appendix G).
Details provisions for monitoring impacts to the environment from oil pollution and response activities	Regulation 22(1)	Oil Spill Preparedness and Response Mitigation Assessment (Appendix G).
Demonstrates that the oil pollution response arrangements are consistent with the national system for oil pollution preparedness and control	Regulation 22(16)	Hydrocarbon Spill Australia Regulatory Framework

### 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. Following the mapping of training to

Woodside identified competencies, training was then mapped to positions based on their required competencies (Table 7-9).

**Table 7-9: 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"> <li>• IMT Fundamentals Course (internal course) or equivalent</li> <li>• ICS 100/200</li> <li>• IMO3 or equivalent spill response specialist level with an oil spill response organisation (OSRO)</li> <li>• Participation in L2 activation, exercise or skills maintenance</li> </ul>
Operations, Planning, Logistics and Finance Sections, and other rostered members of the CIMT	<ul style="list-style-type: none"> <li>• IMT Fundamentals Course or equivalent</li> <li>• ICS 100/200</li> <li>• Oil spill theory</li> <li>• Participation in L2 activation, exercise or skills maintenance</li> </ul>
Environment Unit Leader	<ul style="list-style-type: none"> <li>• IMT Fundamentals Course</li> <li>• ICS 100/200</li> <li>• IMO2 or equivalent spill response specialist level with an OSRO</li> <li>• Participation in L2 activation, exercise or skills maintenance</li> </ul>
<b>Note on competency/equivalency</b>	
<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 IMT roles.</p> <p>The revised IMT Fundamentals training Program aligns with the performance requirements of the PMAOMIR320 – Manage Incident Response Information and PMAOM0R418 - Coordinate Incident Response.</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 is 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 Emergency Operations Centre (EOC), based in Woodside's head office, is the onshore coordination point for an offshore emergency. The EOC is staffed by an appropriately skilled team available on call 24 hours a day. This team coordinates rescues, minimises damage to the environment and facilities, and liaises with external agencies. A description of Woodside's Incident Command Structure and arrangements are further detailed in the Hydrocarbon Spill Australia Regulatory Framework, as are roles and responsibilities for facility emergency response.

Woodside will have an Emergency Response Plan (ERP) in place relevant to the Petroleum Activity. The ERP provides procedural guidance specific to the asset and location of operations to control, coordinate and respond to an emergency or incident. The ERP will contain instructions for vessel emergency, medical emergency, search and rescue, reportable incidents, incident notification, contact information and activation of the contractor's emergency centre and Woodside Communication Centre.

In an emergency of any type, the Vessel Master will assume overall onsite command and act as the Incident Controller (IC). All persons aboard the vessel will be required to act under the IC's directions. The vessel will maintain communications with the onshore Project Manager and other emergency services. Emergency response support can be provided by the contractor's emergency centre or Woodside Communication Centre if requested by the IC.

The project vessels will have onboard equipment for responding to emergencies, including medical, firefighting and hydrocarbon spill response equipment.

#### 7.11.4 Oil and other hazardous materials spill

A significant hydrocarbon spill during the Petroleum Activity is unlikely, but should such an event occur, it has the potential to cause serious environmental and reputational damage if not managed properly. The Hydrocarbon Spill Australia Regulatory Framework, supported by the Petroleum Activity's Oil Pollution First Strike Plan which provides tactical response guidance to the activity/area (Appendix H), cover spill response for this Petroleum Activity.

The Crisis and Emergency Management Team manages Woodside's hydrocarbon spill response equipment stockpile. Woodside also maintains a suite of contracts for access to additional specialist response equipment and trained personnel as required via Australian and international spill response organisations and labour supply companies. In the event of a major spill, Woodside will enact first strike response actions, in liaison with the relevant Control Agency, as detailed in the activity-specific Oil Pollution First Strike Plan. Vessels will have ship oil pollution emergency plans (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 Petroleum Activity's 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 Activity, as detailed in Appendix G.

#### 7.11.5 Emergency and spill response

Woodside categorises incidents in relation to response requirements:

- **Level 1** incidents are those that can be resolved using existing resources, equipment and personnel. A Level 1 incident is contained, controlled and resolved by site- or regionally based teams using existing resources and functional support services.
- **Level 2** incidents are characterised by a response that requires external operational support to manage the incident. It is triggered if the capabilities of the tactical level response are exceeded. This support is provided to the activity by activating all or part of the responsible CIMT.
- **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 manages the strategic impacts in order to respond to and recover from the threat to the company (material impacts, litigation, legal and commercial, reputation and such). The CIMT may also be activated as required to manage the operational incident response.

#### 7.11.6 Emergency and spill response drills and exercises

Woodside's capability to respond to incidents will be tested periodically, in accordance with the Emergency and Crisis Management Procedure. The scope, frequency and objective of these tests is described in Table 7-10. Emergency response testing is aligned to existing or developing risks associated with Woodside's operations and activities. Corporate hazards and risks outlined in the corporate risk register, respective Safety Cases or project Risk Registers, are reference points for developing and scheduling emergency and crisis management exercises. External participants may be invited to attend exercises (for example, government agencies, specialist service providers, oil spill response organisations, or industry members with which Woodside has mutual aid arrangements).

The overall objective of exercises is to test procedures, skills and the teamwork of the Emergency Response and Command Teams in their ability to respond to major accident and major environment events. After each exercise, the team holds a debriefing session, during which the exercise is reviewed. Any lessons learned or areas for improvement are identified and incorporated into revised procedures, where appropriate.

**Table 7-10: Testing of response capability**

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Response category	Scope	Response testing frequency	Response testing objective
<b>Level 1 Response</b>	Exercises are activity-specific	At least one Level 1 OPEP drill must be conducted during an activity. For campaigns with an operational duration of greater than one month, this will occur within the first 2 weeks of commencing the activity and then at least every 6-month hire period thereafter.	<ul style="list-style-type: none"> <li>Comprehensive exercises test elements of the Oil Pollution First Strike Plan (Appendix H).</li> <li>Emergency drills are scheduled to test other aspects of the ERP</li> </ul>
<b>Level 2 Response</b>	Exercises are vessel-specific	Level 2 Emergency Management exercises are relevant to activities with an operational duration of one month or greater. At least one Emergency Management exercise per campaign must be conducted within the first month of commencing the activity and then at every 6-month hire period thereafter, where applicable based on duration.	Test both the facility IMT response and that of the CIMT following handover of incident control.
<b>Level 3 Response</b>	Exercises are relevant to all Woodside assets	The number of Crisis Management Team exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Emergency Management.	Test Woodside's ability to respond to and manage a crisis-level incident.

### 7.11.7 Testing of hydrocarbon spill response arrangements

Woodside is required to test hydrocarbon spill response arrangements as per Regulations 8B and 8C in the Environment Regulations. 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 that 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. 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.

In addition to the testing of response capability described in Table 7-10, up to eight formal exercises are planned annually, pan-Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

### 7.11.8 Testing of arrangements schedule

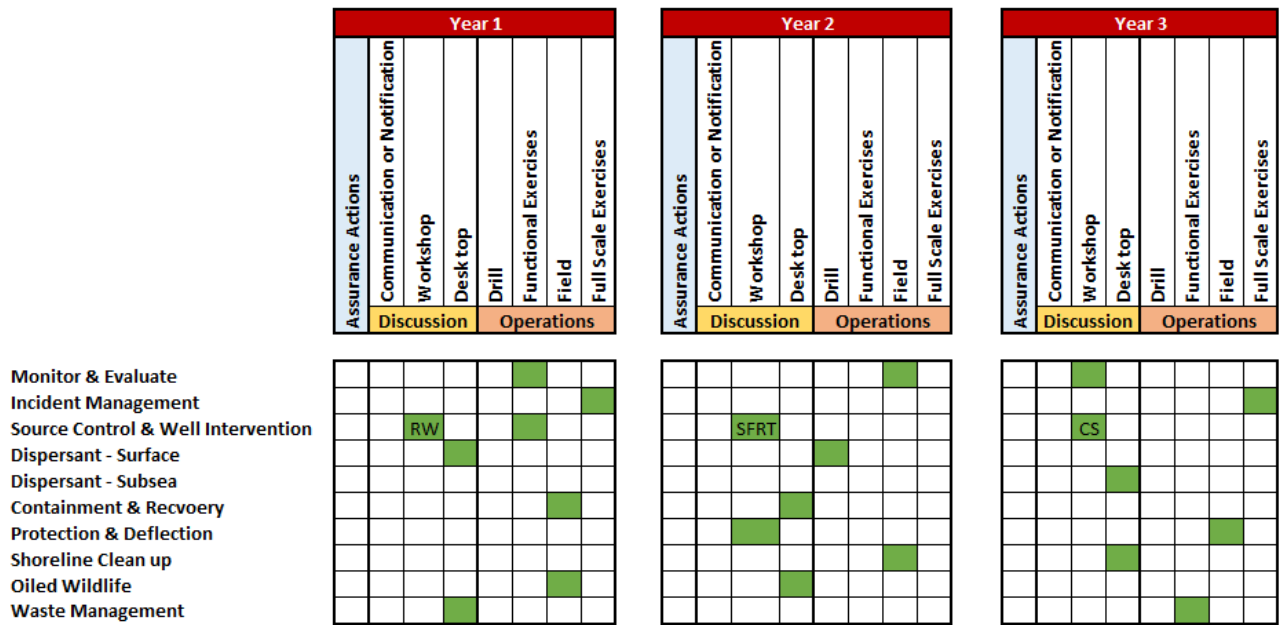
Woodside's Testing of Arrangements Schedule (Figure 7-3) aligns with international good practice for spill preparedness and response management; the testing is compatible with the International Petroleum Industry Environmental Conservation Association Good Practice Guide and the Australian Institute for Disaster Resilience 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.

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.

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The vertical columns relate to how hydrocarbon spill arrangements will be tested over the 3-year rolling schedule. The subheading for the column describes the standard method of testing likely to be undertaken (e.g. discussion exercise, desktop exercise), and the green cells indicate the arrangements that could be tested for each method.

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).



**Figure 7-3: Indicative 3-yearly testing of arrangements schedule**

Note: Schedule is subject to change, additional detail is included in live document

### **7.11.9 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.

Facilities and relevant support vessels on hire to Woodside receive regular forecasts from Woodside Meteorologists, who liaise closely with the Bureau of Meteorology (BOM). If a cyclone (or severe weather event) is forecast, the path and its development is plotted and monitored using the BOM data. If there is the potential for the cyclone (severe weather event) to affect the Petroleum Activity 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

**Table 9-1: List of terms and definitions**

Term	Definition
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACN	Australian Company Number
AFC	antifouling coating
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AIMS	Australian Institute of Marine Science
ALARP	as low as reasonably practicable
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
ASAP	as soon as possible
ATSB	Australian Transport Safety Bureau
ATSIHP Act	Aboriginal and Torres Strait Islander Heritage Protection Act 1984
AusSAR	Australian Search and Rescue
AWJ	abrasive water jet
BIA/s	biologically important area/s
BCF	bioconcentration factor
BOM	Bureau of Meteorology
BP	Boiling point
CAES	Catch and Effort System
CALM	Conservation and Land Management
CEFAS	Centre for Environment, Fisheries and Aquaculture Science
CFA	Commonwealth Fisheries Association
CHP	Commonwealth Heritage Places
CIMT	Corporate Incident Management Team
CP	cathodic protection
CS	cost/sacrifice
CV	company values
CWC	Concrete Weight Coat
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Commonwealth Department of Climate Change, Energy, Environment and Water
DEMIRS	Western Australian Department of Energy, Mining, Industry Regulation and Safety
DMP	Department of Mine and Petroleum
DNP	Director of National Parks
DoT	Western Australian Department of Transport
DP	dynamic positioning
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage

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Term	Definition
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
ECAR	Environmental Compliance Action Register
EFL/s	Electrical Flying Lead/s
EHU/s	Electrohydraulic umbilical/s
EMBA	environment that may be affected
EMS	Environmental Management System
ENVID	environment identification
EOC	Emergency Operations Centre
EP	Environment Plan
EPBC	<i>Environment Protection and Biodiversity Conservation</i>
EPBC Act	<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>
EPO	environmental performance outcome
EPS	environmental performance standard
ERP	Emergency Response Plan
ESD	ecologically sustainable development
F	Feasibility
FPSO	Floating Production, Storage and Offtake vessel
GHG	greenhouse gas
GP	good industry practice
GWA	Goodwyn Alpha
HDPE	High Density Polyethylene
HF	high frequency
HFL	Hydraulic Flying Lead
HFO	Heavy fuel oils
HOCNF	Harmonised Offshore Chemical Notification Format
HQ	hazard quotient
HSE	health, safety and environment
IAP	Incident Action Plan
IAPP	International Air Pollution Prevention
IC	Incident Controller
ICLDP	Incident and Crisis Leadership Development Program
ID	identity/identification
IFO	Intermediate fuel oils
ILUA/s	Indigenous Land Use Agreement/s
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMMR	inspection, maintenance, monitoring and repair
IMR	Inspection, maintenance and repair
IMO	International Maritime Organization
IMS	invasive marine species

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Term	Definition
IMSMA	IMS Management Area
IMT	Incident Management Team
IOPP	International Oil Pollution Prevention
IPA/s	Indigenous protected areas
ISO	International Organization for Standardization
ISPP	International Sewage Pollution Prevention
IUCN	International Union for Conservation of Nature
IUTB	Infield umbilical termination basket
JRCC	Joint Rescue Coordination Centre
JSA	Job Safety Analysis
KEF	key ecological feature
KGP	Karratha Gas Plant
KPI	key performance indicator
LAT	lowest astronomical tide
LBL	long base line
LCS	legislation, codes and standards
LCV	light construction vessel
LDPE	Low-density polyethylene
LF	low frequency
LNG	liquefied natural gas
MAEs	Major Accident Events
MARPOL	The International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (also known as MARPOL 73/78)
MBES	Multibeam Echo Sounder
MC	measurement criteria
MCV	multi-purpose construction vessel
MDO	marine diesel oil
MDPE	Medium-density polyethylene
MEER	Maritime Environmental Emergency Response Unit
MEEs	major environmental events
MEG	Mono-ethylene Glycol
MFE	mass flow excavator
MFO	marine fauna observer
MGO	marine gas oil
MNES	matters of national environmental significance
MOC	management of change
MODU	mobile offshore drilling unit
MPA/s	Marine Protected Area
MPSV	multi-purpose support vessel

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Term	Definition
MSIN	Maritime Safety Information Notifications
N/A	not applicable
NHP	National Heritage Places
NIMS	non-indigenous marine species
NLPG	National Light Pollution Guidelines
NM	Nautical Mile
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NORM	naturally-occurring radioactive material
NRC	North Rankin Complex
NTM	Notice to Mariners
NWMR	North-west Marine Region
NWS	North West Shelf
NWSTF	North West Slope Trawl Fishery
NZ	New Zealand
OCNS	Offshore Chemical Notification Scheme
ODS	Ozone Depleting Substance
OIW	oil in water
OPEP	oil pollution emergency plan
OPGGs Act	Commonwealth <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>
OPP	Offshore Project Proposal
OSPAR	Oslo and Paris Commission for the Convention for the Protection of the Marine Environment of the North-East Atlantic
OSPRMA	Oil Spill Preparedness and Response Mitigation Assessment
OSREC	Oil Spill Response Skills Enhancement Course
OSRO	Oil Spill Response Organisation
OVID	Offshore Vessel Inspection Database
OVMSA	Offshore Vessel Management System Assessment
PAP	Petroleum Activity Program
PCV	Pressure Control Valve
PJ	professional judgement
PMST	Protected Matters Search Tool
PPA	Pilbara Ports Authority
PPA	Petroleum Program Activity
PS	Performance Standard
PTS	permanent threshold shift
PTW	Permit to Work
PU	polyurethane

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Term	Definition
QA/QC	quality assurance, quality control
RBA	risk-based analysis
RCC	Regional Coordination Centre
rms SPL	root mean square sound pressure level
ROV/s	remote operated vehicles
SCE	solids control equipment
SCE/s	Safety and Environment Critical Elements
SCM	subsea control module
SCQ	safety and environment critical equipment
SEL	sound exposure level
SIMAP	Spill Impact Mapping and Analysis Program
SIMOPS	simultaneous operations
SOPEP	Ship Oil Pollution Emergency Plan
SPL	sound pressure level
SSS	Side-scan Sonar
SV	societal value
TAP	Threat Abatement Plan
TTS	temporary threshold shift
UCH	underwater cultural heritage
UCH Act	Commonwealth <i>Underwater Cultural Heritage Act 2018</i>
UK	United Kingdom
UNESCO	The United Nations Educational, Scientific and Cultural Organization
USBL	Ultra-short baseline
UTA	Umbilical Termination Assembly
UV	Ultraviolet
VOC/s	non-methane volatile organic compound/s
VP	Vice President
WA	Western Australia
WAFIC	WA Australian Fishing Industry Council
WAM	West Australian Museum
WEL	Woodside Energy Ltd
WHP	World Heritage Property
WLS	Woodside Learning System
WMS	Woodside Management System
WMP	Waste Management Plan
WMS	Woodside Management System
XT/s	Xmas Tree/s

**APPENDIX A    WOODSIDE ENVIRONMENT AND BIODIVERSITY,  
CLIMATE AND RISK MANAGEMENT POLICIES**

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## Environment and Biodiversity Policy

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### 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 activities<sup>1</sup> within the boundaries of natural sites on the UNESCO World Heritage List.<sup>2</sup>
- Not undertaking new activities within IUCN Protected Areas<sup>3</sup> unless compatible with management plans in place for the area.
- Achieving net zero deforestation<sup>4</sup> for new activities.
- Developing Biodiversity Management Plans for all new major projects (CAPEX >US\$2 billion).
- Supporting positive biodiversity outcomes in regions and areas in which we undertake activities.
- 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.

*Revised by the Woodside Energy Group Ltd Board in December 2024.*

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<sup>1</sup> Does not include non-industrial and existing activities that are compatible with maintenance of the listed outstanding universal values.

<sup>2</sup> New UNESCO World Heritage Listings that overlap existing activities will be assessed at the time of listing.

<sup>3</sup> New IUCN Protected Areas that overlap existing activities will be assessed at the time of listing.

<sup>4</sup> Definition of Forest: 'native trees higher than 5 metres and a canopy cover of more than 10 percent on the land to be cleared'.

# Climate Policy

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## BACKGROUND

The Intergovernmental Panel on Climate Change has stated that “it is unequivocal that human influence has warmed the atmosphere, ocean and land”. An objective of the Paris Agreement is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and to pursue “efforts to limit the temperature increase to 1.5°C”. Many countries have set targets to reduce greenhouse gas emissions, including by changing the way they produce and consume energy.

## OBJECTIVE

Woodside’s objective is to thrive in this energy transition as a low cost, lower carbon energy provider.

## PRINCIPLES

Woodside aims to achieve the objective by:

- Setting science-based<sup>1</sup> near, mid, and long-term net emissions reduction targets that are consistent with Paris-aligned<sup>2</sup> scenarios, covering equity scope 1 and 2 emissions, both operated and non-operated.<sup>3</sup>
- 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 our advocacy to the principles of this Climate Policy.

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<sup>1</sup> 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> (Appendix A).

<sup>2</sup> 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> (Appendix A).

<sup>3</sup> 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.

## **APPLICABILITY**

Responsibility for the application of this Policy rests with all Woodside employees, contractors and joint venture participants 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.

*Reviewed by the Woodside Energy Group Ltd Board in December 2024.*



# Risk Management Policy

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## OBJECTIVES

Woodside recognises that risk is inherent in our business and the effective management of risk is vital to deliver our strategic objectives, continued growth and success. We are committed to managing risks in a proactive and effective manner as a source of competitive advantage.

Our approach protects us against potential negative impacts, enables us to take risk for reward and improves our resilience against emerging risks. The objective of our risk management framework is to provide a single consolidated view of risks across the company to understand our full risk exposure and prioritise risk management and governance.

The success of our approach lies in the responsibility placed on everyone at all levels to proactively identify, assess and treat risks relating to the objectives they are accountable for delivering.

## PRINCIPLES

Woodside achieves these objectives by:

- Applying a structured and comprehensive framework for the identification, assessment and treatment of current risks and response to emerging risks;
- Ensuring line of sight of financial and non-financial risks at appropriate levels of the organisation;
- Demonstrating leadership and commitment to integrating risk management into our business activities and governance practices;
- Recognising the value of stakeholder engagement, best available information and proactive identification of potential changes in external and internal context;
- Embedding risk management into our critical business processes and control framework;
- Understanding our exposure to risk and tolerance for uncertainty to inform our decision making and assure that Woodside is operating with due regard to the risk appetite endorsed by the Board; and
- Evaluating and improving the effectiveness and efficiency our approach.

## APPLICABILITY

The Managing Director of Woodside is accountable to the Board of Directors for ensuring this Policy is effectively implemented.

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.

*Reviewed by the Woodside Energy Group Ltd Board in December 2024.*

APPENDIX B    RELEVANT REQUIREMENTS

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The below table refers to Commonwealth Legislation related to the activity

Commonwealth Legislation	Legislation Summary
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	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. 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. Damage or interference with Aboriginal objects or places is not an offence under the ATSIHP Act except within Victoria under Section 21U.
<i>Air Navigation Act 1920</i> <ul style="list-style-type: none"><li>• <i>Air Navigation Regulations 1947</i></li><li>• <i>Air Navigation (Aerodrome Flight Corridors) Regulations 1994</i></li><li>• <i>Air Navigation (Aircraft Engine Emissions) Regulations 1995</i></li><li>• <i>Air Navigation (Aircraft Noise) Regulations 1984</i></li><li>• <i>Air Navigation (Fuel Spillage) Regulations 1999</i></li></ul>	This Act relates to the management of air navigation.
<i>Australian Maritime Safety Authority Act 1990</i>	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.
<i>Australian Radiation Protection and Nuclear Safety Act 1998</i>	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.
<i>Biosecurity Act 2015</i> <ul style="list-style-type: none"><li>• <i>Quarantine Regulations 2000</i></li><li>• <i>Biosecurity Regulation 2016</i></li><li>• <i>Australian Ballast Water Management Requirements 2017</i></li><li>• <i>Biosecurity Amendment (Biofouling Management) Regulations 2021</i></li></ul>	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. 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. The Biofouling Management Regulations requires ships to report information about biofouling management and the voyage history of the ship in the past 12 months through a pre-arrival report.

<p><i>Environment Protection and Biodiversity Conservation Act 1999</i></p> <ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Conservation Regulations 2000</i></li> </ul>	<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. 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>
<p><i>Environment Protection (Sea Dumping) Act 1981</i></p> <ul style="list-style-type: none"> <li>• <i>Environment Protection (Sea Dumping) Regulations 1983</i></li> </ul>	<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></p> <ul style="list-style-type: none"> <li>• <i>Industrial Chemicals (Notification and Assessment) Regulations 1990</i></li> </ul>	<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></p> <ul style="list-style-type: none"> <li>• <i>National Environment Protection Measures (Implementation) Regulations 1999</i></li> </ul>	<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. 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></p> <ul style="list-style-type: none"> <li>• <i>National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015</i></li> </ul>	<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></p> <ul style="list-style-type: none"> <li>• <i>Marine order 12 – Construction – subdivision and stability, machinery and electrical installations</i></li> <li>• <i>Marine order 30 - Prevention of collisions</i></li> <li>• <i>Marine order 47 – Offshore Industry units</i></li> <li>• <i>Marine order 57 - Helicopter operations</i></li> <li>• <i>Marine order 91 - Marine pollution prevention—oil</i></li> <li>• <i>Marine order 93 - Marine pollution prevention—noxious liquid substances</i></li> <li>• <i>Marine order 94 - Marine pollution prevention—packaged harmful substances</i></li> <li>• <i>Marine order 96 - Marine pollution prevention—sewage</i></li> <li>• <i>Marine order 97 - Marine pollution prevention—air pollution</i></li> </ul>	<p>This Act regulates navigation and shipping including Safety of Life at Sea (SOLAS). The Act will apply to some activities of the MODU and project vessels. 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></p> <ol style="list-style-type: none"> <li>1. <i>Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009</i></li> <li>2. <i>Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011</i></li> <li>3. <i>Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009</i></li> </ol>	<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></p> <ul style="list-style-type: none"> <li>• <i>Ozone Protection and Synthetic Greenhouse Gas Management Regulations 1995</i></li> </ul>	<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>
<p><i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>  <i>Protection of the Sea (Prevention of Pollution from Ships) (Orders) Regulations 1994</i></p> <ul style="list-style-type: none"> <li>• <i>Marine order 91 - Marine pollution prevention—oil</i></li> <li>• <i>Marine order 93 - Marine pollution prevention—noxious liquid substances</i></li> <li>• <i>Marine order 94 - Marine pollution prevention—packaged harmful substances</i></li> <li>• <i>Marine order 95 - Marine pollution prevention—garbage</i></li> <li>• <i>Marine order 96 - Marine pollution prevention—sewage</i></li> </ul> <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 nautical miles (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></p> <ul style="list-style-type: none"> <li>• <i>Marine order 98—(Marine pollution—anti-fouling systems)</i></li> </ul>	<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>Recycling and Waste Reduction (Mandatory Product Stewardship—Mercury-added Products) Rules 2021</i>  (Minamata Convention on Mercury 2017)</p>	<p>This convention is an agreement to protect human and environmental health from the effects of releases of mercury and mercury-containing compounds to the environment. The convention has been ratified by Australia and is implemented in Commonwealth law.</p>
<p><i>Underwater Cultural Heritage Act 2018</i></p> <ul style="list-style-type: none"> <li>• <i>Underwater Cultural Heritage Guidance for Offshore Developments</i></li> <li>• <i>DRAFT Guidelines to Protect Underwater Cultural Heritage</i></li> </ul>	<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</p>

	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 Underwater Cultural Heritage Act.
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APPENDIX C    WOODSIDE MASTER EXISTING ENVIRONMENT

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# **Description of the Existing Environment**



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# 1. INTRODUCTION

## 1.1 Purpose

This document applies, where indicated in the relevant Environment Plan (EP), 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 Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (OPGGS (E) Regulations) 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 be 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 Climate Change, Energy, the Environment and Water (DCCEEW) 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* (Cth) (EPBC Act) Species Profile and Threats Database (SPRAT), EPBC Act 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 on at least a five-year basis. Key updates are captured in a 'change register'. Material risk may trigger updates within the five-year review period, as per the OPGGS (E) Regulations. Key updates may include but are not limited to the status of EPBC Act listed species, Part 13 Instruments, policies and guidelines, key advice from external stakeholders and recently published scientific literature.

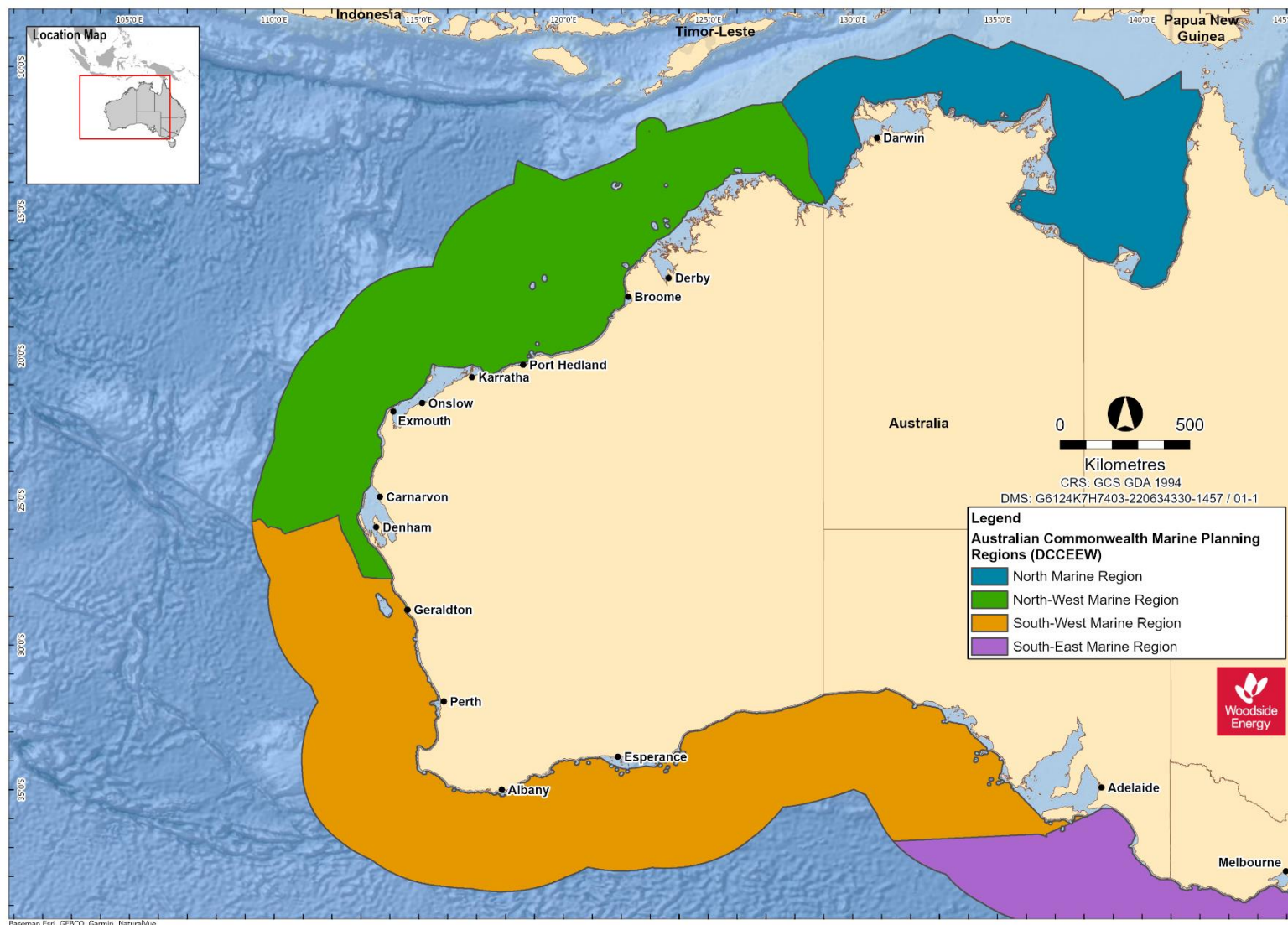
## 1.4 Regional Context

Where relevant, the physical, biological and social environments within the areas of interest are discussed with reference to the three marine bioregions of Australia: North-west Marine Region (NWMR), South-west Marine Region (SWMR) and North Marine Region (NMR). The Marine Bioregional Plans has been prepared under section 176 of the EPBC Act<sup>1</sup> (Table 1-1). The NWMR is the focal marine bioregion for the Woodside Description of the Existing Environment as this is currently the location of most of Woodside's activities.

<sup>1</sup> <https://www.dcceew.gov.au/environment/marine/marine-bioregional-plans> (accessed:04/08/2024).

**Table 1-1: Description of the marine bioregions**

Marine Bioregion	Description
North-west (DSEWPAC, 2012a)	The NWMR includes all Commonwealth waters (from three nautical miles (NM) from the Territorial Sea Baseline to the 200 NM Exclusive Economic Zone (EEZ) boundary) extending from the WA/Northern Territory border to Kalbarri, south of Shark Bay in WA, covering an area of approximately 1.07 million km <sup>2</sup> 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 (DSEWPAC, 2012b)	The SWMR comprises Commonwealth waters from the eastern end of Kangaroo Island in South Australia to Shark Bay in WA. The region spans approximately 1.3 million km <sup>2</sup> of temperate and subtropical waters and abuts the coastal waters of SA and WA.
North (DSEWPAC, 2012c)	The NMR comprises Commonwealth waters from West Cape York Peninsula to the NT/WA border). The region covers approximately 625,689 km <sup>2</sup> 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: NWMR, SWMR, NMR and South-East (as defined under the EPBC Act, refer to (DCCEEW, 2021b))**

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## 2. PHYSICAL ENVIRONMENT

### 2.1 Regional Context

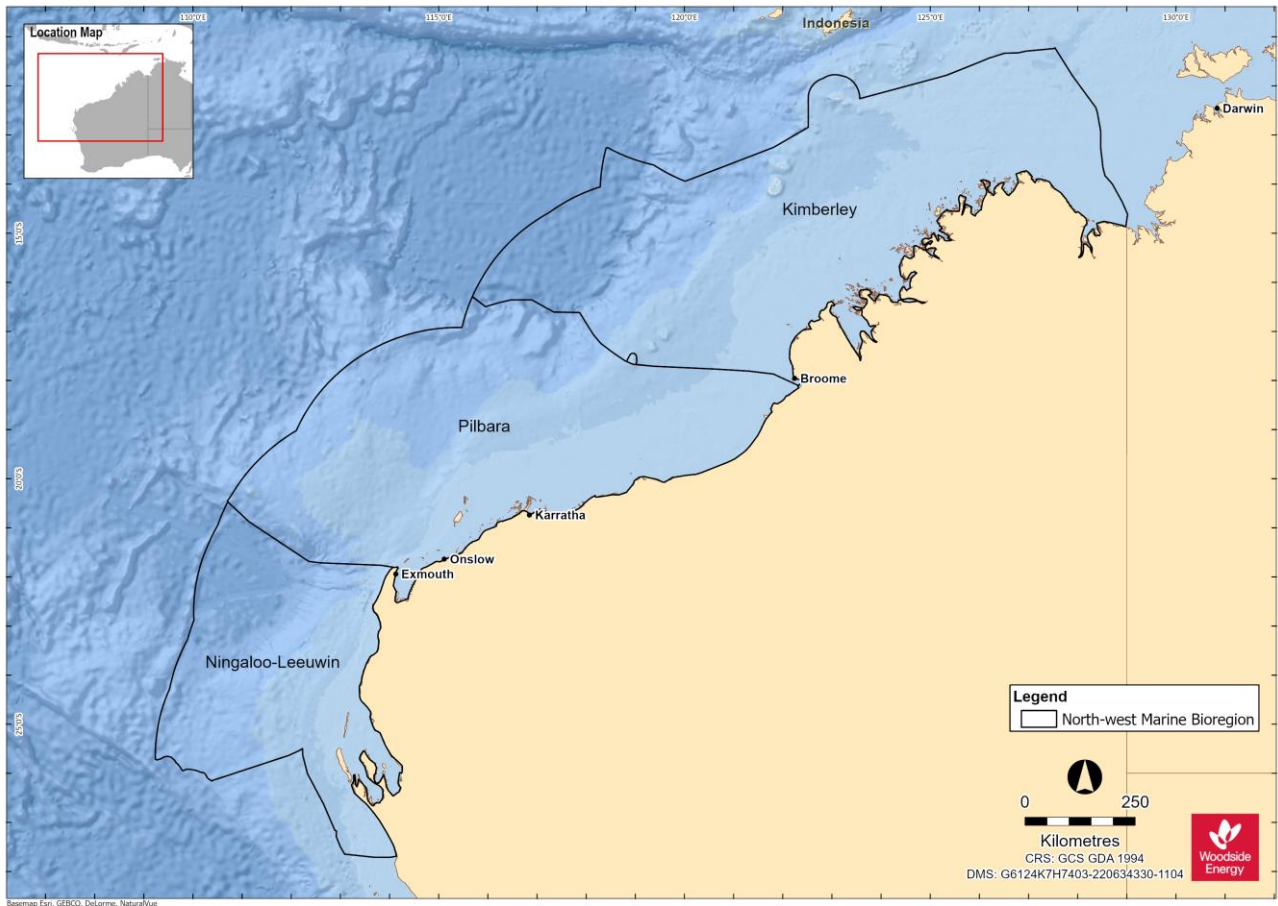
The key physical characteristics of the NWMR, SWMR and NMR are presented in Table 2-1. The remainder of this section then focuses entirely on the NWMR.

**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 (NWMR)

The NWMR is 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 in Table 2-2.



Note: Woodside areas align with the marine systems as described in DEWHA (2007a)

**Figure 2-1: The marine systems of the NWMR (data source: DEWHA, 2007a)**

**Table 2-2: Key characteristics of the marine systems of the NWMR**

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

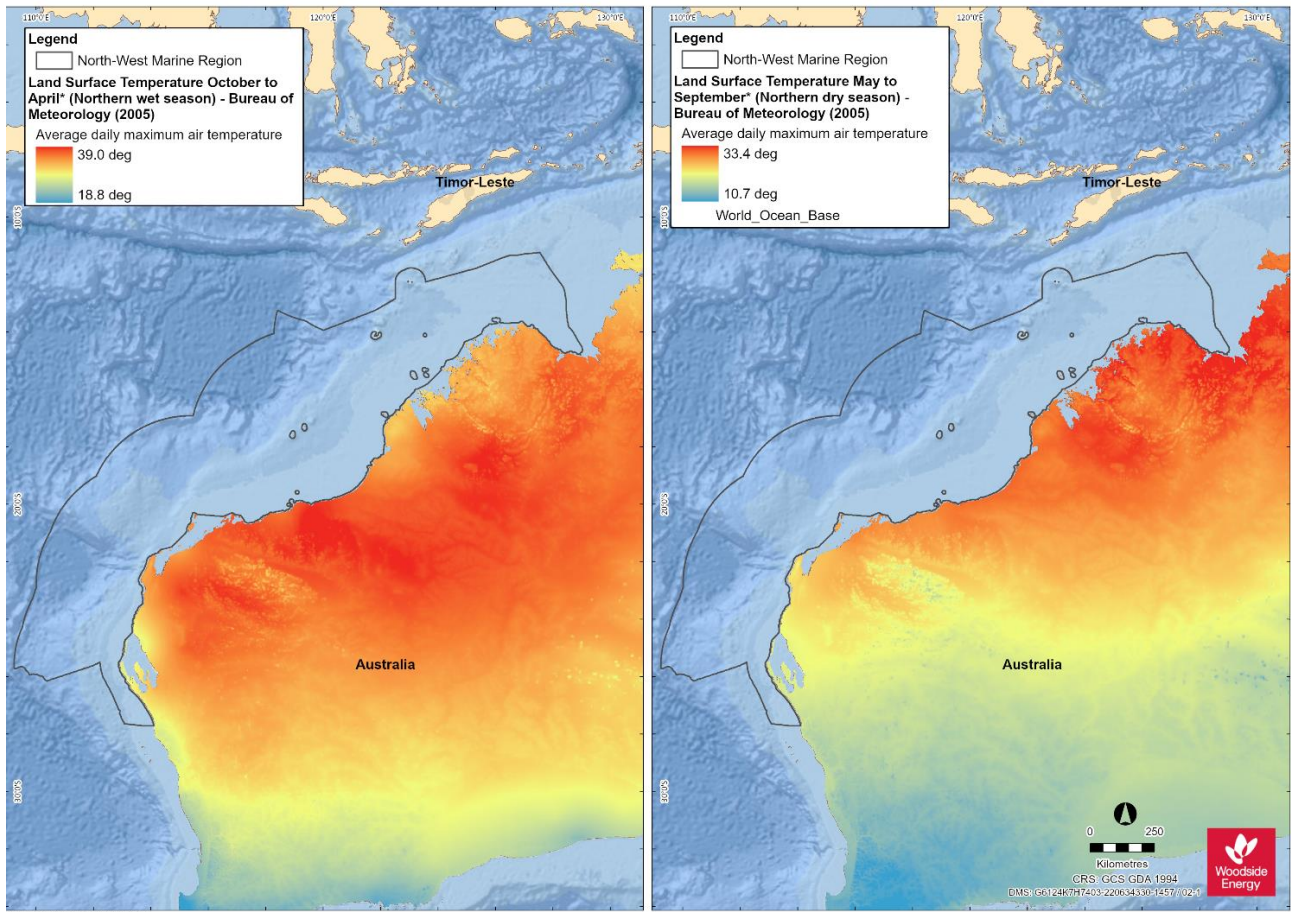
This section describes the general meteorological conditions and oceanography for the NWMR and provides further detail for the three Woodside activity areas (Table 2-3). The NWMR is influenced by a complex system of ocean currents that change between seasons and between years, which generally result 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). The purpose of Table 2-3 is to provide high-level physical characteristics of the marine environment within and across the NWMR. This subsection does not describe warming trends or discuss forecast trajectories for the NWMR.



**Table 2-3: NWMR climate and oceanography summary**

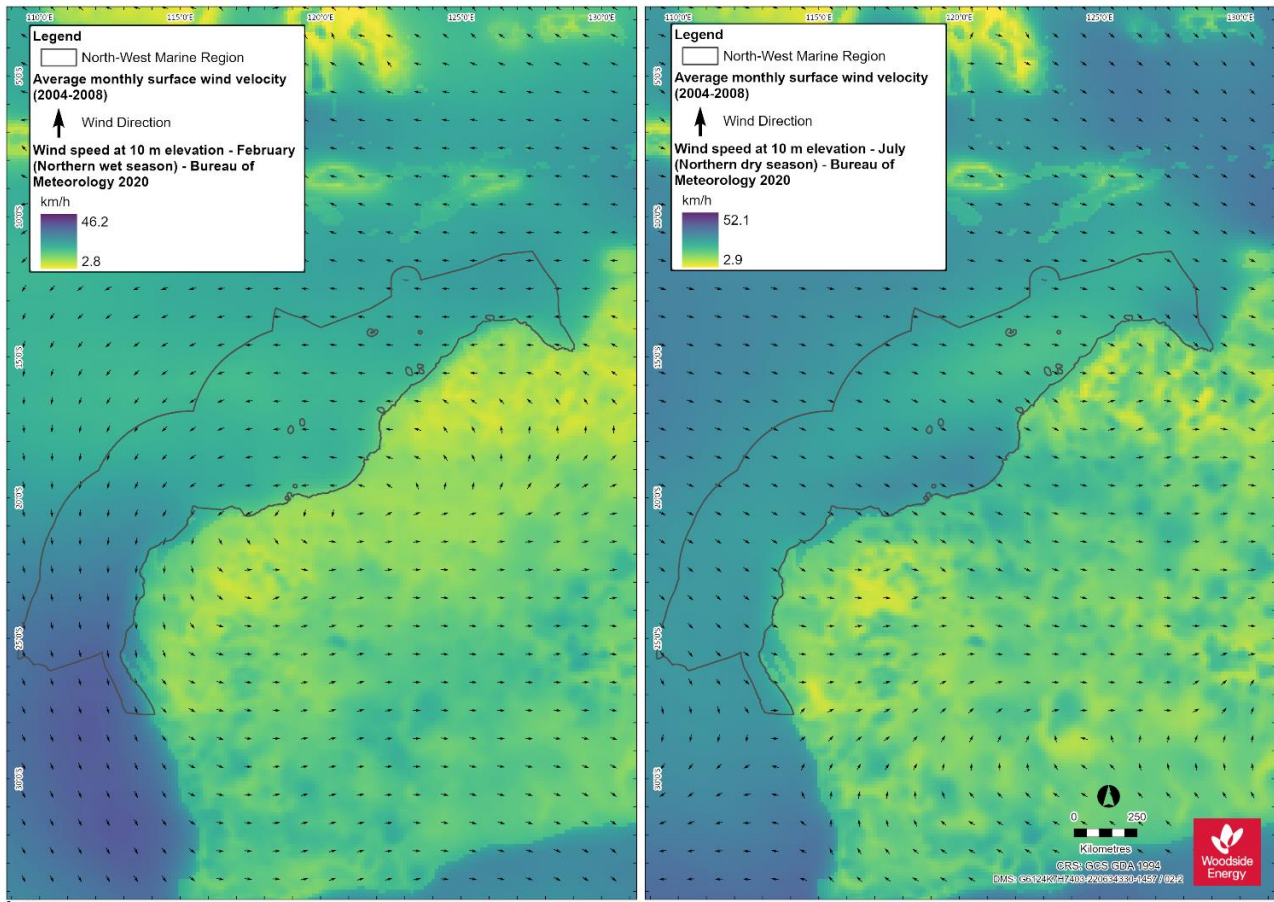
Receptor	Description
<b>Meteorology</b>	
<b>Seasonal patterns</b>	The NWMR associated land mass of the Australian continent is characterised as a hot and humid summer climate zone. The broader NWMR experiences variations of a tropical or monsoon climate. In the far north-west (Kimberley), there is a 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.
<b>Air temperature and rainfall</b>	In summer (between September and March), maximum daily temperatures range from 18°C to 36°C. During winter (May to July), mean daily temperatures range from 12°C to 30°C (BOM, 2023c), refer to Figure 2-2. 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.
<b>Wind</b>	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 <sup>-1</sup> . During winter, high-pressure cells over central Australia produce north-easterly to south-easterly winds with average speeds of between 6 and 8 ms <sup>-1</sup> . Refer to Figure 2-3.
<b>Tropical cyclones</b>	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.
<b>Oceanography</b>	
<b>Ocean temperature</b>	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 ~23°C in winter to ~31°C in summer (Hallenberger et al., 2022), indicative of present-day sea surface temperatures, acquired from the CSIRO Oceans and Atmosphere database. Refer to Figure 2-5, for the seasonal variation across and within the NWMR.
<b>Currents</b>	<p>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.</p> <p>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 et al., 2018).</p> <p>Local physical oceanography is strongly influenced by the large-scale water movements of the Indonesian Throughflow (Liu et al., 2015; Sutton et al., 2019). Typically, a warm and well-mixed oligotrophic surface layer, and a cooler and more nutrient rich deeper water layer (Menezes et al., 2013).</p>
<b>Waves</b>	<p>Sea surface waves within the NWMR generally reflect the direction of the synoptic winds and flow predominantly from the South-west in the summer and East in winter (Pearce et al., 2003).</p> <p>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).</p> <p>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).</p>

Receptor	Description
<b>Tides</b>	<p>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.</p> <p>Tides of the 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.</p> <p>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).</p>



**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)**

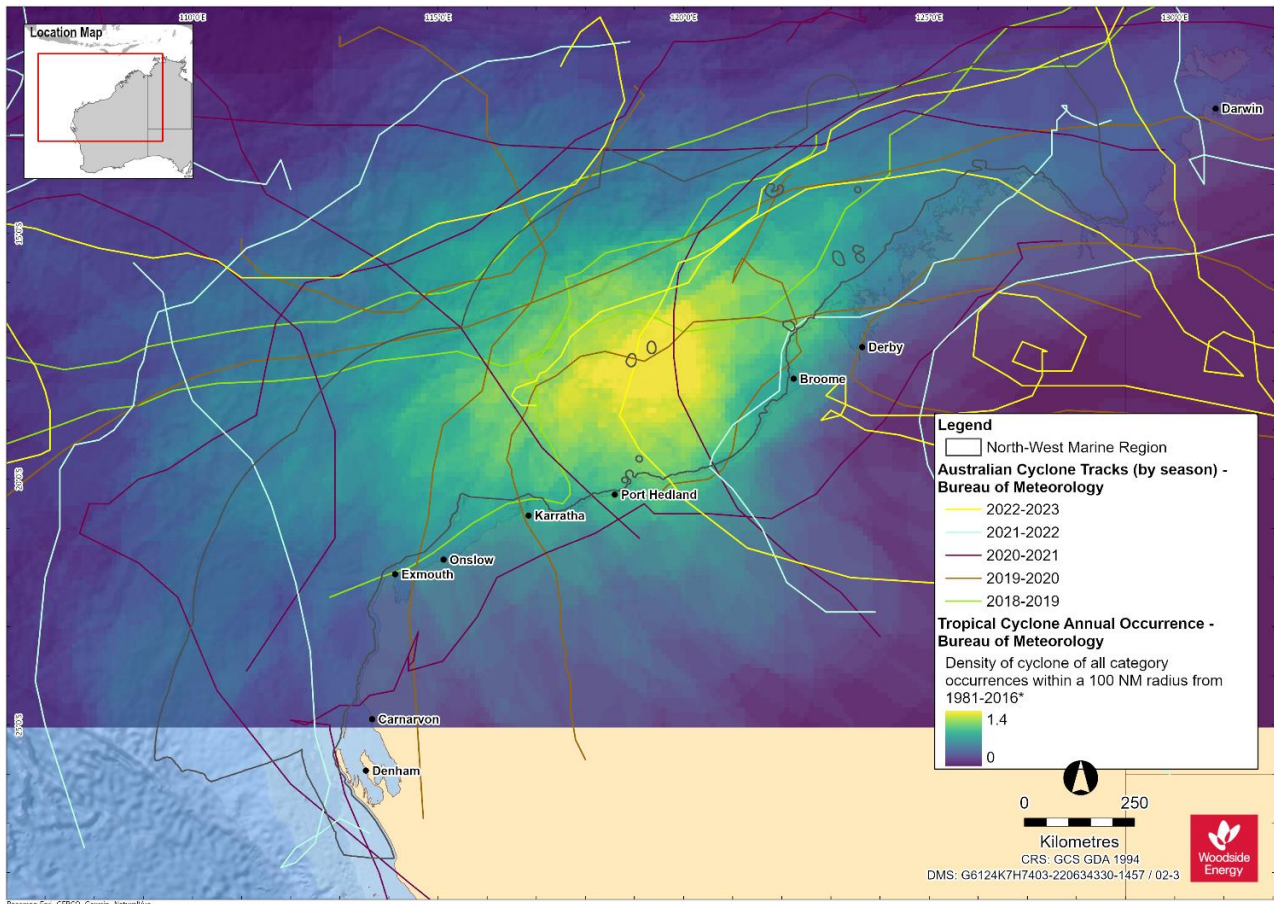
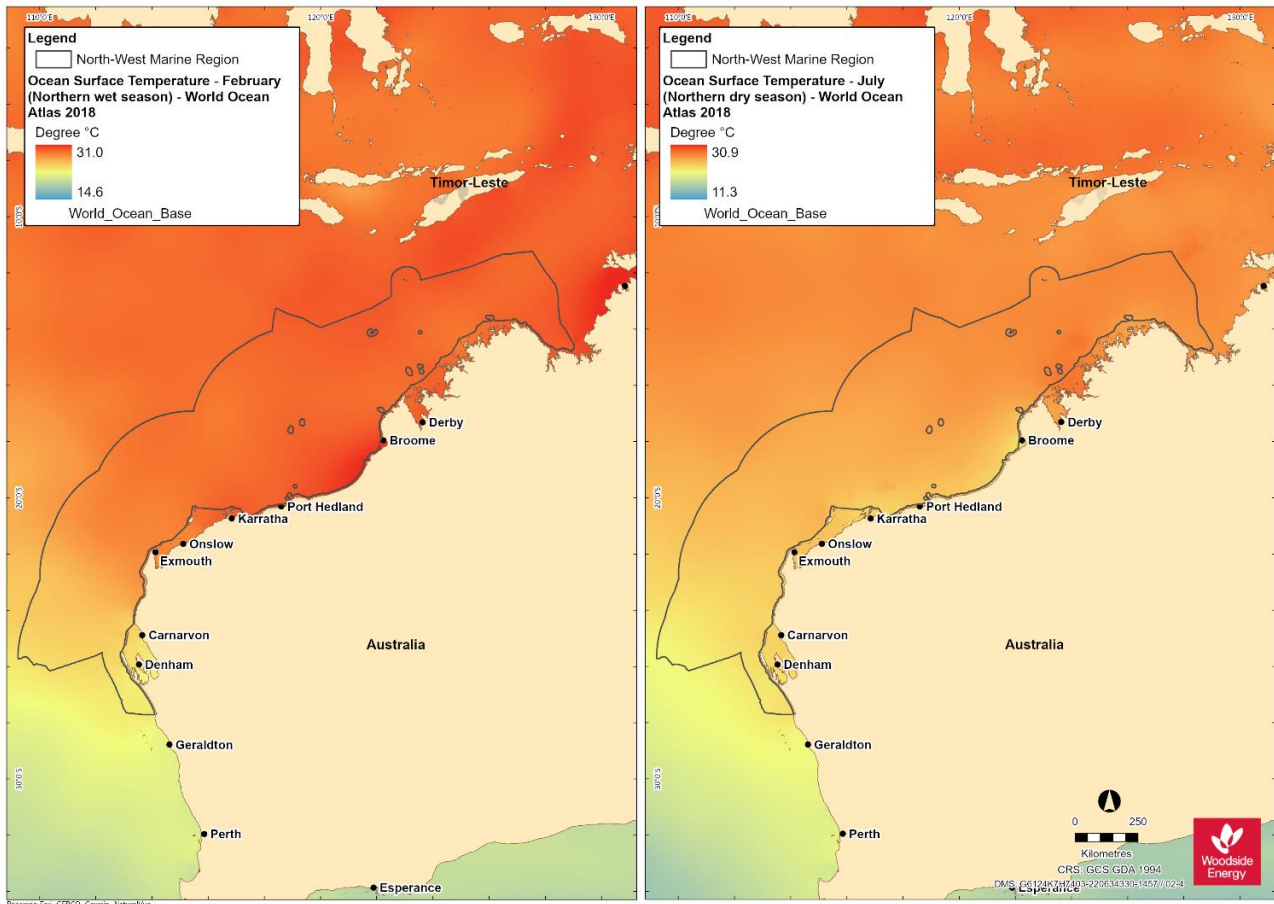
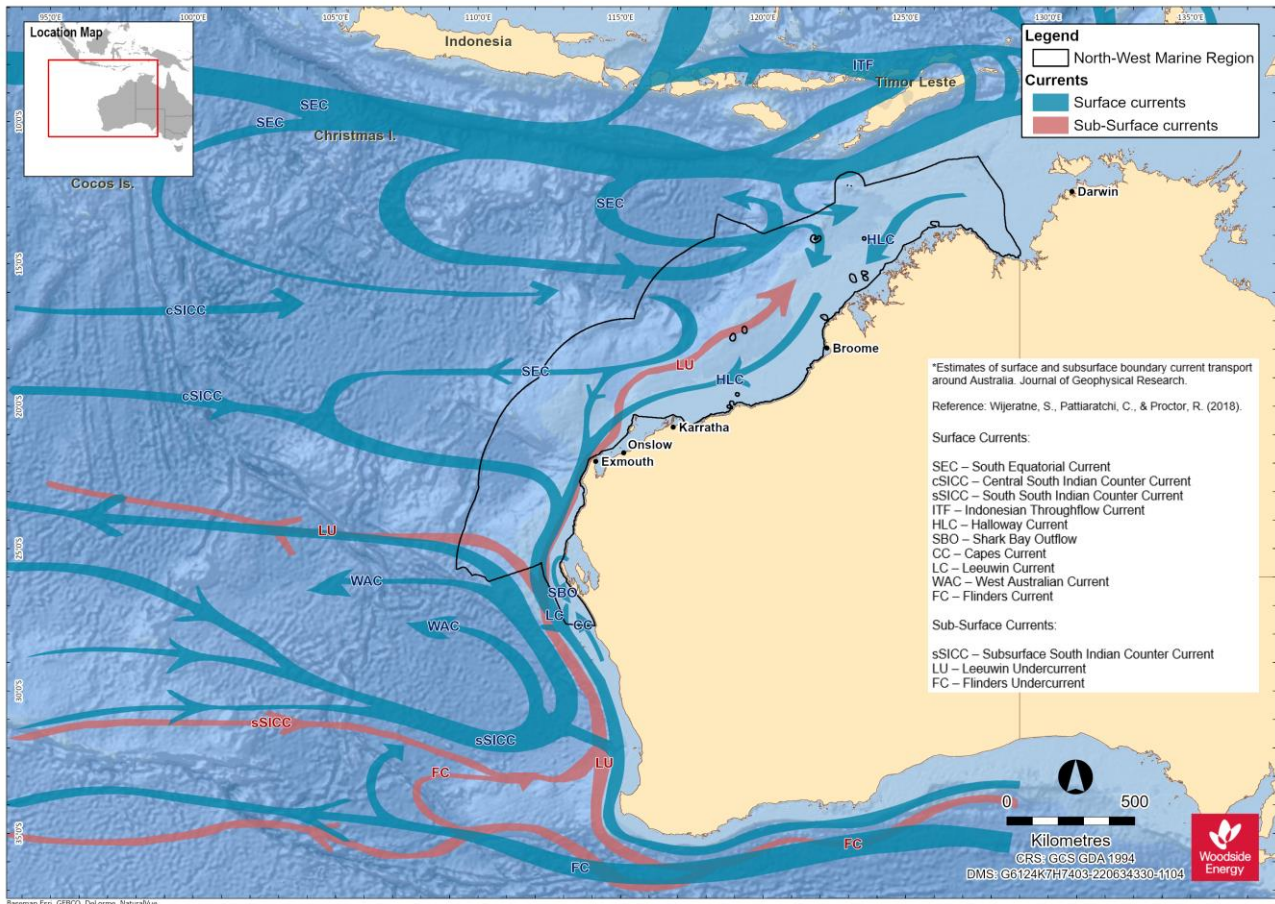


Figure 2-4: Tropical cyclone annual occurrence and cyclone tracks for NWMR







**Figure 2-6: Ocean surface and sub-surface currents of the NWMR and wider region (data source: adopted from Wijeratne et al., 2018)**

### 2.3.1 Browse

**Table 2-4: Summary meteorology and oceanography for Browse (refer to Appendix B for supporting metocean figures and data sources)**

Receptor	Description
<b>Meteorology</b>	
<b>Seasonal patterns</b>	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.
<b>Air temperature</b>	The mean annual air temperature recorded at Troughton Island between 2010 and 2020 ranged from 22.5°C in 2019 to 32.8°C in 2016 and highest mean monthly air temperatures were recorded for the months of November and December (BOM, 2023a).
<b>Rainfall</b>	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, 2023a).
<b>Wind</b>	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/h and maximum wind gusts of 65 km/h. In contrast the wet season brings predominantly westerly winds with average wind speeds approximately 17 km/h and maximum gusts exceeding 100 km/h (generally associated with tropical cyclones (MetOcean Engineers, 2005).
<b>Oceanography</b>	
<b>Currents</b>	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 and data sources)**

Receptor	Description
<b>Meteorology</b>	
<b>Seasonal patterns</b>	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.
<b>Air temperature</b>	Air temperatures as measured at the North Rankin A platform on the NWS ranged from a maximum average of 39.8°C in summer to a minimum average temperature of 15.2°C in winter (Woodside, 2015).
<b>Rainfall</b>	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 et al., 2003) and Appendix B.
<b>Wind</b>	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 et al., 2003) and Appendix B.
<b>Oceanography</b>	
<b>Currents</b>	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 Indonesian Throughflow 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 et al., 2004; Condie et al., 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 and data sources)**

Receptor	Description
<b>Meteorology</b>	
<b>Seasonal patterns</b>	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.
<b>Air temperature</b>	Air temperatures in the North West Cape area range from high summer temperatures (maximum average of 38°C) and mild winter temperatures (minimum average of 11.5°C) as recorded from the Learmonth Airport (BOM, 2023b).
<b>Rainfall</b>	Rainfall typically occurs during the summer, with highest rainfall during later summer and autumn (mean monthly level to >19 mm), with the highest rainfall recorded during June, often associated with the passage of tropical low-pressure systems and cyclones. Rainfall is typically low in winter (<2 mm) (BOM, 2023b).
<b>Wind</b>	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.
<b>Oceanography</b>	
<b>Currents</b>	Surface currents exhibit seasonal directionality, with flow to the south-west during March to June and more variable outside this period (Woodside, 2022). 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 of more than 5 km. 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

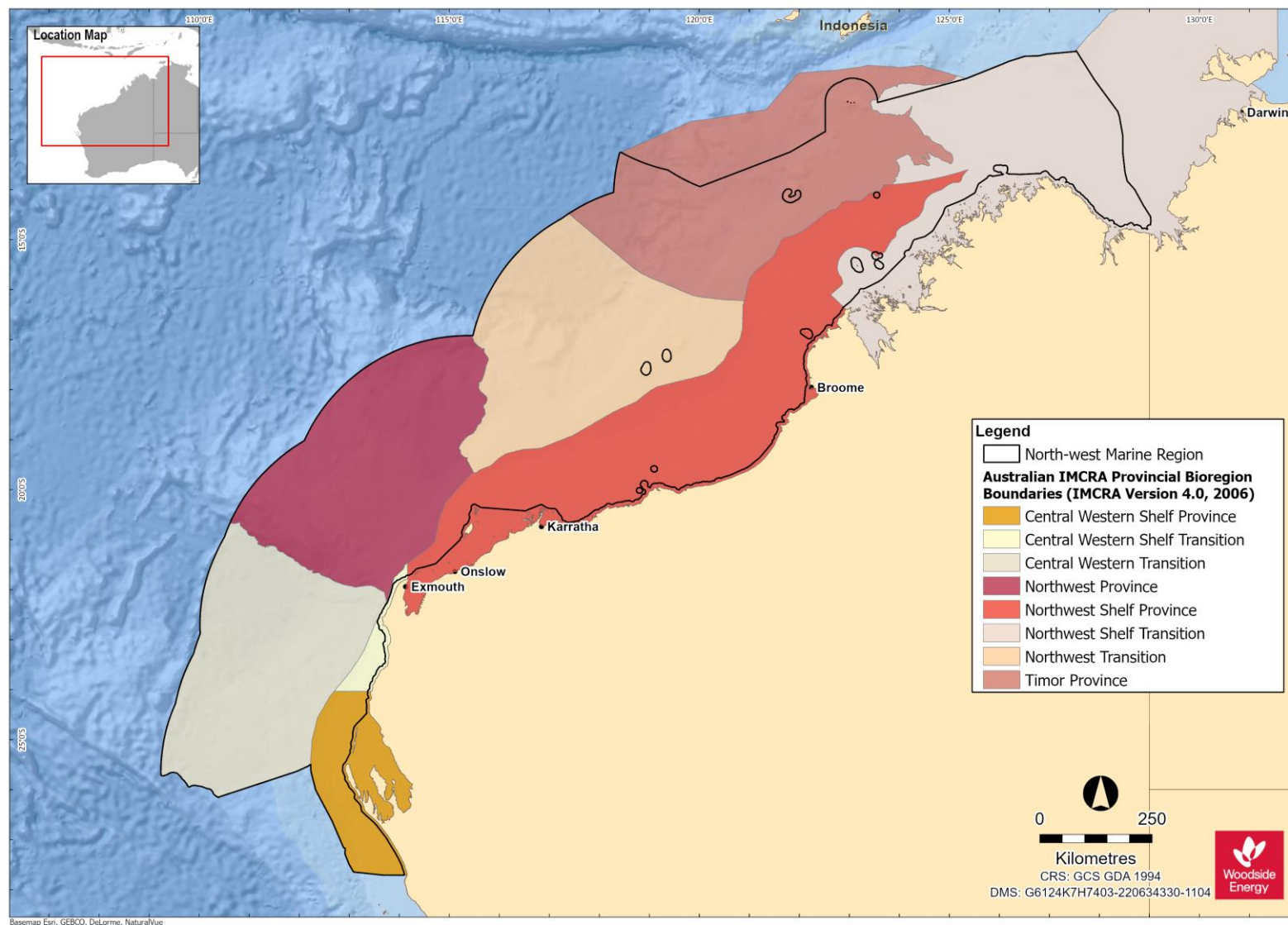
gravel, an outer shelf/slope zone that is dominated by mud and a relatively homogenous rise and abyssal plain/deep ocean floor that is dominated by non-carbonate mud (Baker et al., 2008), Figure 2-9. The distribution and resuspension of sediments on the inner shelf is strongly influenced by the strength 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.

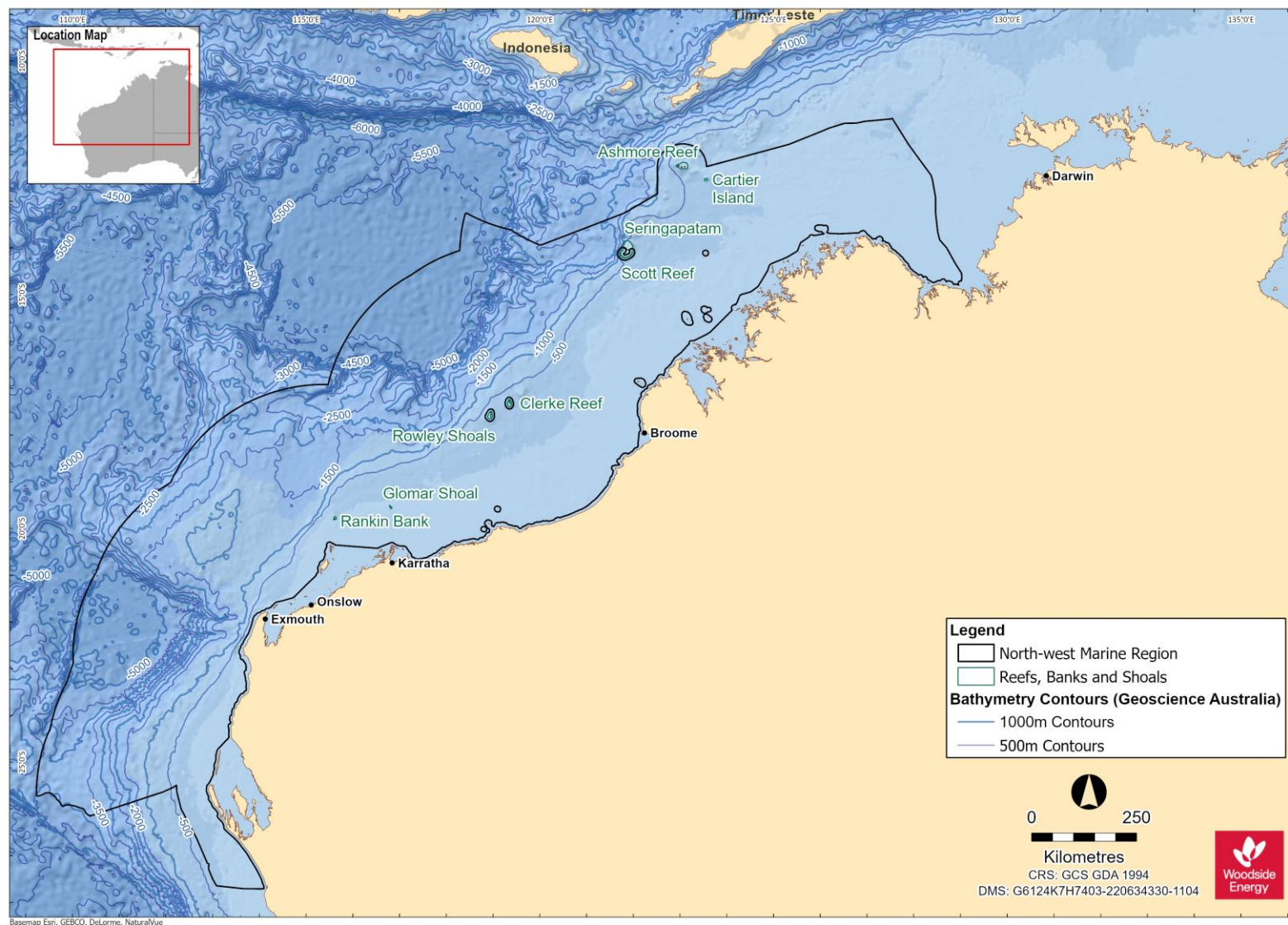
Vessel traffic and existing offshore surface infrastructure are the only likely sources of pollutants in the marine region. Closer to the coast there may be localised and temporary reductions in air quality around areas of high vessel traffic, or due to the occurrence of dust storms and bushfires. International contributors to reduced air quality in the marine region may include 'slash-and-burn' agricultural methods and large forest fires in South-east Asian regions (Vadrevu et al., 2014; Kim Oanh et al., 2018).



**Figure 2-7: The eight Integrated Marine and Coastal Regionalisation of Australia (IMCRA) v4.0 provincial bioregions of the NWMR (GA, 2024)**

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**Figure 2-8: Bathymetry of the NWMR (data source: Geoscience Australia)**

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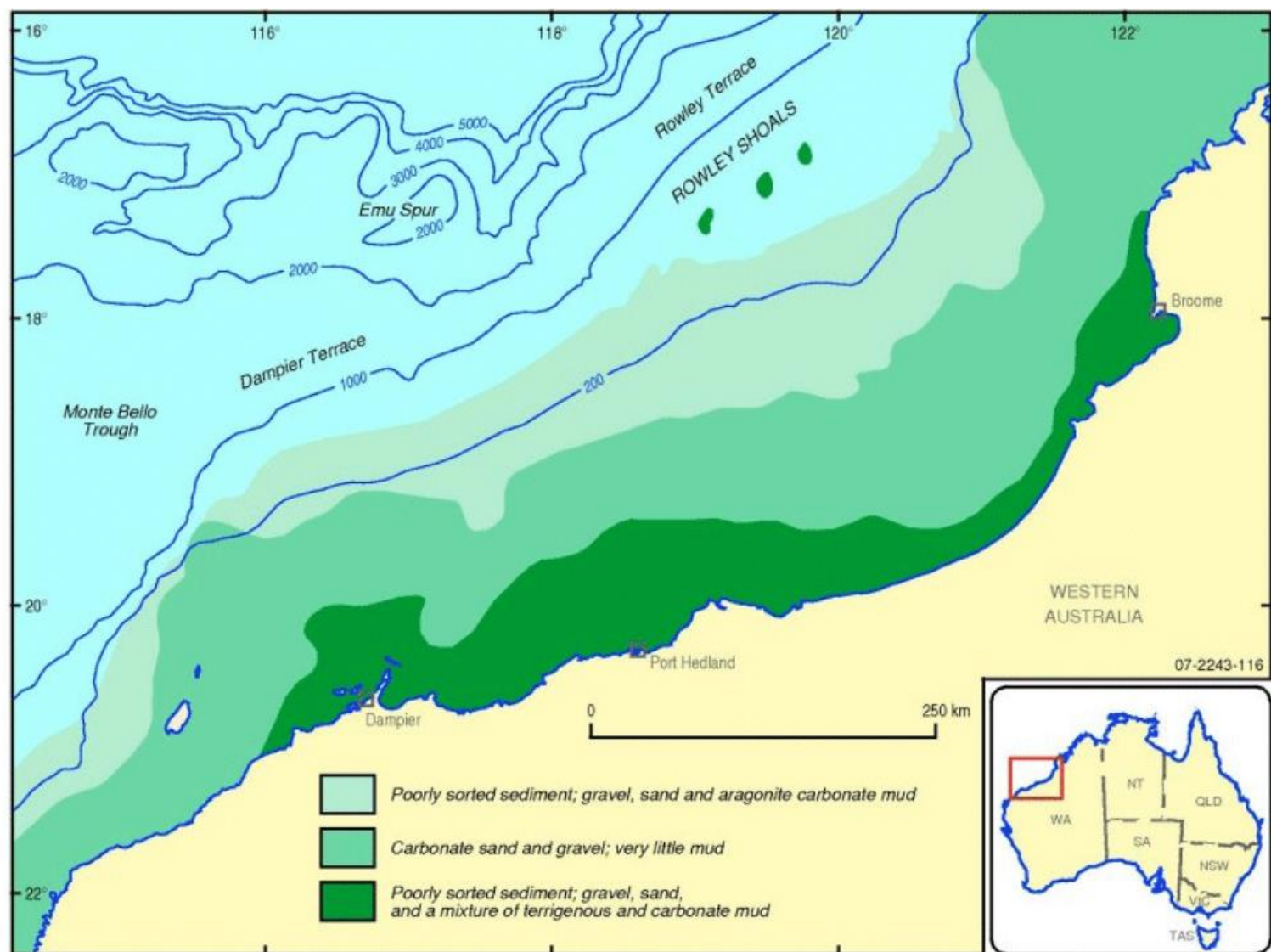
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**Figure 2-9: Overview of the seabed sediments of the NWMR (data source: Baker et al., 2008)**

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### **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 is provided in subsequent sections (referenced in Table 3-1, Table 3-2 and Table 3-3).

**Table 3-1: Summary of MNES identified by the EPBC Act Protected Matters Search Tool (PMST) within and potentially occurring within the NWMR**

<b>MNES</b>	<b>Number</b>	<b>Description</b>	<b>Section of this Document</b>
<b>World Heritage Properties</b>	2	Shark Bay The Ningaloo Coast	Section 11
<b>National Heritage Places</b>	5	Shark Bay The Ningaloo Coast The West Kimberley The Dampier Archipelago (including Burrup Peninsula) Dirk Hartog Landing Site 1616	Section 11
<b>Wetlands of International Importance (Ramsar)</b>	4	Ashmore Reef National Nature Reserve Eighty Mile Beach Ord River Floodplain Roebuck Bay	Section 11
<b>Commonwealth Marine Areas</b>	5	EEZ and Territorial Sea Key Ecological Features (KEFs) Australian Marine Parks (AMPs) Australian Whale Sanctuary Extended Continental Shelf	Section 11
<b>Listed Threatened Ecological Communities</b>	1	Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	Terrestrial community and not considered further
<b>Listed Threatened Species</b>	109	Refer NWMR PMST report (Appendix A)	Section 5 to Section 9
<b>Listed Migratory Species</b>	97	Refer NWMR PMST report (Appendix A)	Section 5 to Section 9

**Table 3-2: Summary of MNES identified by the EPBC Act PMST within and potentially occurring within the SWMR**

<b>MNES</b>	<b>Number</b>	<b>Description</b>	<b>Section of this Document</b>
<b>World Heritage Properties</b>	1	Australian Convict Sites (Fremantle Prison).	Section 11
<b>National Heritage Places</b>	5	Cheetup Rock Shelter Batavia Shipwreck site HMAS Sydney II and HSK Kormoran Fitzgerald River National Park Fremantle Prison (former).	Section 11
<b>Wetlands of International Importance (Ramsar)</b>	6	Becher Point Wetlands Forrestdale and Thomsons Lakes Peel-Yalgorup System Vasse-Wonnerup System Lake Gore Lake Warden System	Section 11
<b>Commonwealth Marine Areas</b>	5	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 11
<b>Listed Threatened Ecological Communities</b>	9	SWMR Subtropical and Temperate Coastal Saltmarsh Terrestrial 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 Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge Thrombolite (microbial) community of coastal freshwater lakes of the Swan Coastal Plain (Lake Richmond) Sedgeland in Holocene dune swales of the southern Swan Coastal Plain Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion Empodisma peatlands of southwestern Australia	Section 11
<b>Listed Threatened Species</b>	166	Refer SWMR PMST report (Appendix A)	N/A
<b>Listed Migratory Species</b>	89	Refer SWMR PMST report (Appendix A)	N/A

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**Table 3-3: Summary of MNES identified by the EPBC Act PMST within and potentially occurring within the NMR**

<b>MNES</b>	<b>Number</b>	<b>Description</b>	<b>Section of this Document</b>
<b>World Heritage Properties</b>	0	N/A	N/A
<b>National Heritage Places</b>	0	N/A	N/A
<b>Wetlands of International Importance (Ramsar)</b>	0	N/A	N/A
<b>Commonwealth Marine Areas</b>	5	EEZ and Territorial Sea KEFs AMPs Australian Whale Sanctuary Extended Continental Shelf	Section 11
<b>Listed Threatened Ecological Communities</b>	0	N/A	N/A
<b>Listed Threatened Species</b>	82	Refer NMR PMST report (Appendix A)	N/A
<b>Listed Migratory Species</b>	82	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, South-west Marine Region (SWMR) and North Marine Region (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. The screening criteria included:

- overlap among the Woodside activity areas with habitat critical for survival (e.g. marine turtles) and with biologically important areas (BIAs) (overlapping the marine environment) for any listed threatened and/or migratory 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 critical life stage behaviours (e.g. breeding, nesting, calving, resting, foraging, migration)
- environmental aspects associated with petroleum activities that 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 EPBC Act threatened and migratory species 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)
<b>Marine Mammals</b>	
Blue whale	Conservation Management Plan for the Blue Whale: A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999 2015–2025 (Commonwealth of Australia, 2015a)
Southern right whale	National Recovery Plan for the Southern Right Whale <i>Eubalaena australis</i> (DCCEEW, 2024a)
Sei whale	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
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) Conservation Advice <i>Neophoca cinerea</i> Australian Sea Lion (Threatened Species Scientific Committee, 2020a) (in effect under the EPBC Act from 23-Dec-2020)
<b>Marine Reptiles</b>	
All marine turtle species (loggerhead, green, leatherback, hawksbill, flatback, olive ridley)	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia, 2017) National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW, 2023d)
Mitchell's water monitor	Conservation Advice for <i>Varanus mitchelli</i> (Mitchell's water monitor) (DCCEEW, 2023c)
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)
<b>Fishes, Sharks, Rays and Sawfishes</b>	
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)

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Species	EPBC Act Part 13 Statutory Instrument
Seabirds	
Migratory seabird species	Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020) National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW, 2023d)
Australian fairy tern	National Recovery Plan for the Australian Fairy Tern <i>Sternula nereis nereis</i> (Commonwealth of Australia, 2020) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (DoEE, 2018)
Australian lesser noddy	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e) EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 hectares (DEWHA, 2009)
Amsterdam petrel	National Recovery Plan for albatrosses and petrels (DCCEEW, 2022) EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (DoEE, 2018)
Brown booby	EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (DoEE, 2018)
Wedge-tailed shearwater	
Flesh-footed shearwater	
Wilson’s storm petrel	
Shorebirds	
Migratory shorebird species	Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c) EPBC Act Policy Statement 3.21—Industry guidelines for avoiding, assessing, and mitigating impacts on EPBC Act listed migratory shorebird species (DoEE, 2017) National Light Pollution Guidelines for Wildlife Including Marine Turtles, Seabirds and Migratory Shorebirds (DCCEEW, 2023d)
Eastern curlew, far eastern curlew	Conservation Advice <i>Numenius madagascariensis</i> Far eastern curlew (DCCEEW, 2023e)
Curlew sandpiper	Conservation Advice <i>Calidris ferruginea</i> curlew sandpiper (DCCEEW, 2023f)
Bar-tailed godwit ( <i>menzbieri</i> )	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia) (DCCEEW, 2024e)
Lesser sand plover	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016)
Australian painted snipe	Conservation Advice <i>Rostratula australis</i> Australian painted snipe (Threatened Species Scientific Committee, 2013a)
Great knot	Conservation Advice <i>Calidris tenuirostris</i> Great knot (DCCEEW, 2024g)

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Species	EPBC Act Part 13 Statutory Instrument
Red knot, knot	Conservation Advice <i>Calidris canutus</i> Red knot (DCCEEW, 2024f)
Greater sand plover	Conservation Advice <i>Charadrius leschenaultii</i> Greater sand plover (DCCEEW, 2023g)
Black-tailed godwit	Conservation Advice for <i>Limosa limosa</i> Black-tailed godwit (DCCEEW, 2024h)
Common greenshank	Conservation Advice for <i>Tringa nebularia</i> (common greenshank) (DCCEEW, 2024i)
Asian dowitcher	Conservation Advice for <i>Limnodromus semipalmatus</i> (Asian dowitcher) (DCCEEW, 2024j)
Ruddy turnstone	Conservation Advice for <i>Arenaria interpres</i> (ruddy turnstone) (DCCEEW, 2024k)
Sharp-tailed sandpiper	Conservation Advice for <i>Calidris acuminata</i> (sharp-tailed sandpiper) (DCCEEW, 2024l)
Terek sandpiper	Conservation Advice for <i>Xenus cinereus</i> (terek sandpiper) (DCCEEW, 2024m)
Grey plover	Conservation Advice for <i>Pluvialis squatarola</i> (grey plover) (DCCEEW, 2024n)

## 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 subsections 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 may include organisms that complete their life cycle 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 life cycle 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 located at the continental shelf edge) play a role in making nutrients available in the photic zone (Sutton et al., 2019). 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. 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 km) 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 oceanic coral reef systems and continental shelf limestone pavement seabed habitat. The NWMR encompasses large seabed areas of deepwater seabed habitats dominated by soft sediments (sandy and muddy substrata with occasional patches of coarser sediments) and sparse benthic biota. Comprehensive surveys and documentation of habitats and biota from the shelf to deep waters (100 m to 1000 m) spanning 13 sites between Barrow Island and Ashmore Reef, running downslope across the continental shelf and slope of NWS were conducted in 2007 (Williams et al., 2010). Sites on the continental slope (approximately 400 m deep) predominantly comprised soft, muddy sediments and epifauna were sparsely distributed and limited to isolated individual sessile biota such as crinoids, anemones, glass sponges and sea pens. Occasional non-sessile biota, characteristic of the deeper water benthic communities was recorded and included: echinoderms (urchins, holothurians and sea stars) and decapod crustaceans (prawns

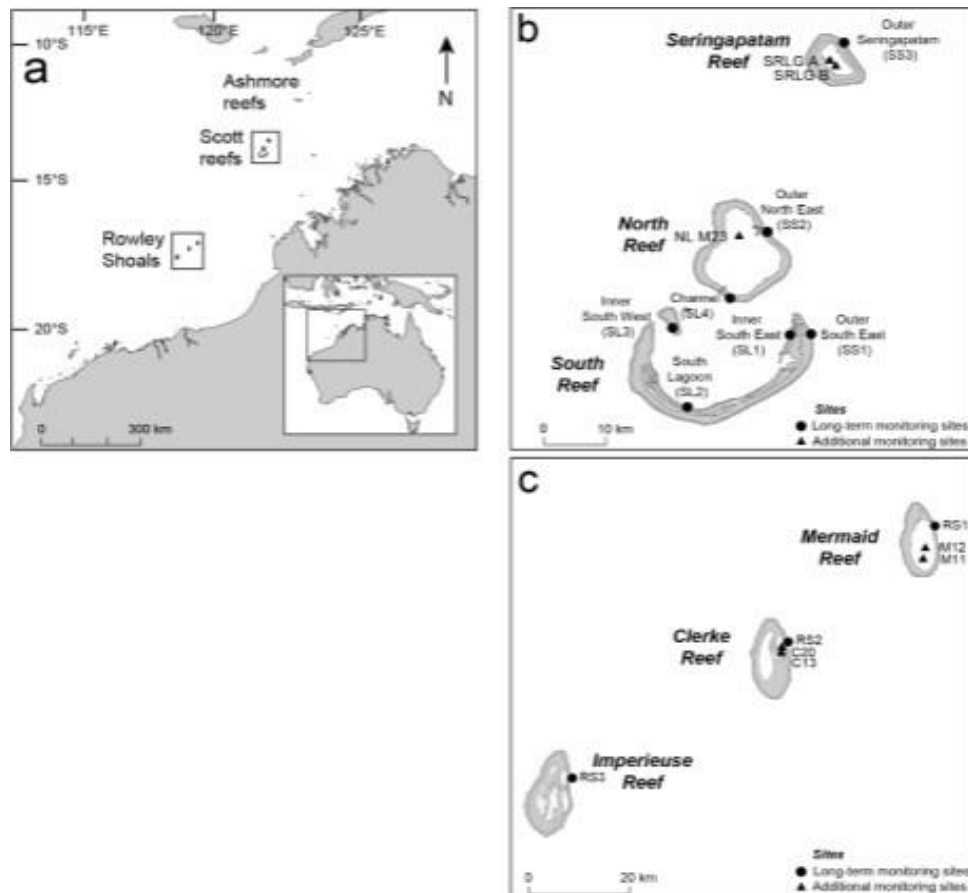
and crabs). Similar benthic biota composition was reported for the continental slope seabed habitats at depths of 700-1000 m (Williams et al., 2010). With reference to the NWS, multiple surveys have documented habitats comprising bare unconsolidated carbonate sediments supporting a sparse assemblage of deposit and filter feeding organisms, including glass sponges, urchins, sea cucumbers, sea stars and crustaceans (URS, 2010). Filter feeding communities documented within the NWS include bryozoans, sponges, gorgonians, and hydroids attached to consolidated substrate; these were interspersed with sand which hosted fewer filter feeders (AIMS, 2014). Infauna associated with soft, unconsolidated sediment habitat such as polychaetes are widespread and well represented along the continental shelf and upper slopes (Brewer et al., 2007; RPS, 2012). The key habitats and biological communities that are 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.

There is a marked biodiversity gradient from high ecological valued coastal (primary producer habitats and associated benthic and mobile biota) to the lower valued deeper offshore habitats comprising soft, unconsolidated sediments and typically sparser biota (epifauna and infauna), with the exception of the submerged shoal features, remote oceanic reef systems of the Rowley Shoals, Scott Reef and Ashmore Reef, as well as the fringing reef habitats of Ningaloo, the Kimberley coastline, the offshore island groups such as Barrow Island, Lowendal and Montebello Islands, and the Dampier Archipelago. A brief overview of the high valued biodiversity reef and mesophotic habitats and associated benthic communities are presented in the following subsections.

#### **4.4.2 Browse**

The most diverse habitats and benthic communities in the Kimberley region of North-western Australia, are where the oceanic reef systems of Ashmore, Cartier, Scott and Seringapatam reefs, and the Rowley Shoals, sit near the edge of the continental shelf hundreds of kilometres from the mainland and from each other (Gilmour et al., 2019 and 2023), refer to Figure 4-1. The long-term monitoring program for Scott Reef and the Rowley Shoals conducted by AIMS since 1994 is now one of the world's longest studies of coral reef ecosystems and provides unprecedented understanding of the background (baseline) changes at oceanic reefs on Australia's North West Shelf, encompassing the physical drivers, and underlying processes of change (impact and recovery) from acute disturbances (heat stress—coral mass-bleaching and cyclones).



**Figure 4-1: The position of Scott Reef, Ashmore and the Rowley Shoals off North-western Australia and location of permanent long-term monitoring sites (source: Gilmour et al., 2023)**

Scott Reef is an annular reef approximately 17 km long and 16 km wide comprising two coral reef atolls rising steeply from depths of approximately 400 to 500 m. These atolls, referred to as South Scott Reef and North Scott Reef, are separated by a deep channel (Figure 4-1). North Scott Reef features an emergent reef flat, outer slope habitats and a shallow lagoon approximately 20 m deep with two small channels linking it to the surrounding ocean. The shallow closed waters of North Scott Reef lagoon contain a range of habitats from bare sand, sand with coral outcrops, and to shallow to deep lagoonal coral dominated habitats (Gilmour et al., 2013). This in contrast to the deeper, more open lagoon of South Scott Reef described as an extensive, unique mesophotic (30–70 m depth) coral dominated habitat comprising hard corals, calcareous algae, soft corals, sponges, bryozoans and other invertebrates (Gilmour et al., 2013; Heyward and Radford, 2019). It is largely protected from the direct influence of major storms by the surrounding horseshoe-shaped emergent reef rim (Heyward and Radford, 2019). South Scott Reef shallow water habitats also include reef flats (of low coral cover) and extensive outer reef slopes with the highest hard coral diversity of any habitat at Scott Reef (Gilmour et al., 2013).

Over the past 30 years the coral communities at Scott Reef have been extensively studied and the Scott Reef long-term monitoring program showed that from 1994 to 2021, the mean cover of hard and soft corals on the reef slopes was 36%, and ranged between 13% to 59%. Decreases in coral cover were caused by damaging waves, generated by storms and cyclones, and recurrent heat stress causing coral bleaching. The most severe heat stress and mass coral bleaching occurred in 1998 and 2016. Recovery from the first mass-bleaching event in 1998 took over a decade. By 2010, coral cover had reached pre-bleaching levels (45%). Despite moderate coral bleaching and cyclone disturbances, cover had increased by 49% in January 2016, after which the reefs were impacted by a second mass bleaching event that reduced mean coral cover to 15%. Five years after the 2016 mass bleaching event, total cover of hard and soft corals had reached 34%, showing a similar rate

of recovery to that following the 1998 mass bleaching (Gilmour et al., 2023). The Rowley Shoals comprise three distinct reef continental shelf atolls of similar dimension, shape and orientation, named Mermaid Reef, Clerke Reef and Imperieuse Reef. The reefs are orientated north–south and are approximately 30 to 40 km apart. Each atoll covers an area approximately 80 to 90 km<sup>2</sup> and extends almost vertically from seafloor depths of approximately 400 m. Each atoll comprises extensive lagoon habitat composed of bare sand, coral dominated patches and coral outcrops, emergent reef crests and outer reef slopes. At high tide only the sandy cays of Clerke Reef and Imperieuse Reef remain visible.

Across the Rowley Shoals, the reef crest and reef slope were most similar and the lagoon most unique in terms of habitat and benthic communities. Hard corals and coralline algae were the most abundant biota (>40%) and other benthic organisms such as sponges, ascidians and macroalgae are rare (<5%). Soft corals were also rare (<1%) at all reefs and habitats, apart from the reef slope (4%) at Mermaid Reef. Across all surveys (1995 to 2019), the mean cover of hard and soft corals at the reef slope was 46% and ranged between 26% and 58%. Decreases in coral cover were primarily due to frequent storms and cyclones. Between 2005 and 2008, three cyclones and moderate heat stress caused a mean reduction in coral cover (52% to 42%) at the reef slope habitat across the Rowley Shoals. Coral bleaching was low (<10%) in January 2016 except for minor to moderate (11 to 30%) bleaching at two lagoon sites at Mermaid Reef. A prolonged heat stress period (45 days) in May 2020 caused the worst coral bleaching on record (approximately 20%) across reef habitats, with the highest heat stress and declines in coral cover at the reef slope for Imperieuse Reef (9%) and minor bleaching and small decreases in coral cover at the reef slope (5%) and lagoon (3%) at Clerke Reef (Gilmour et al., 2023).

The reefs of Seringapatam, Scott Reef, Ashmore Reef and Cartier Island are recognised as key ecological features (KEFs) within NWMR, refer to Table 10-1. Protected Area status (Australian Marine Parks and State Marine Parks and Reserves) is listed and described in Section 11 and includes the Commonwealth Marine Parks of Ashmore Reef, Cartier Island, Kimberley and Mermaid Reef, and the State Marine Parks of the North Kimberley, the Rowley Shoals and Lalang-garram horizontal falls and North Lalang-garram.

#### 4.4.3 North West Shelf / Scarborough

The NWS contains numerous submerged shoal features and as relatively recent surveys have revealed several of these features are of high biodiversity value comprising hard coral and macro-algae communities on upper reaches of the shoals and mesophotic filter-feeding benthic communities in deeper waters on and in proximity to the shoal features, namely, Rankin Bank and Glomar Shoal.

##### 4.4.3.1 Rankin Bank

Rankin Bank comprises three main sedimentary banks rising steeply from between 80 and 120 m below sea level, reaching 20 to 40 m below the sea surface and featuring plateaus and troughs (Abdul Wahab et al., 2018). Rankin Bank is one of only two large, complex bathymetrical features on the outer western shelf of the West Pilbara (the other being Glomar Shoal, about 125 km west-southwest) (Abdul Waheb et al., 2018), Figure 4-1.

Surveys of Rankin Bank were undertaken by the Australian Institute of Marine Science (AIMS) in 2013 and in 2017 to better understand the habitats and complexity of the submerged shoal ecosystems, and associated fish assemblages (AIMS, 2014; Abdul Waheb et al., 2018 and 2017; Jones et al., 2021). The surveys were undertaken using various methods, including multibeam survey, towed video, stereo baited underwater video survey (SBRUVS) and beam transmissions (to measure turbidity), at depths between 20 and 115 m (Abdul Waheb et al., 2018). Water column data were also collected in January 2017 to examine potential temporal variation in these parameters (Abdul Waheb et al., 2018).



Seabed sediments at Rankin Bank were primarily carbonate with a grain size of mostly sand, with finer muds found at the deeper sample sites (AIMS, 2014). Sand was also found to increase with depth and unconsolidated reef exceeded 30% at all depths (Abdul Waheb et al., 2018). Hydrocarbon and trace metal concentrations in sediments indicated the bank was unaffected by anthropogenic pollution (AIMS, 2014). Turbidity was lower at Rankin Bank than Glomar Shoal during the survey, with beam transmissions remaining above 95% at all depths (Abdul Waheb et al., 2018). Turbidity was slightly lower in 2017, whereas temperature and salinity were slightly higher at all depths (Abdul Waheb et al., 2018).

Proportion of cover by benthic taxa was highest for macroalgae and hard corals, particularly at depths less than 40 m, and decreased with increasing depth. Other benthic taxa included soft corals and sponges which were present in lower proportions at all depths. Encrusting corals were common, reaching cover of about 12.5% at depths less than 40 m. Solitary corals were also present (about 10% cover) primarily at depths between 40 and 60 m. Foliose and submassive / columnar corals were also present (Abdul Waheb et al., 2018).

Fish abundance and diversity at Rankin Bank were found to be comparable with other reefs in north-west Australia, and notably twice as abundant and 1.5 times more diverse than those fishes identified in a comparable survey at Glomar Shoal (Abdul Waheb et al., 2018). A total of 205 fish species were recorded at Rankin Bank, 100 of which were common to both Glomar Shoal and Rankin Bank. Depth, location, sand, sponges and hard coral were all found to contribute to the fish communities present. Specifically, fish communities were primarily associated with hard coral and shallow depths at Rankin Bank (Abdul Waheb et al., 2018).

#### 4.4.3.2 Glomar Shoal

Glomar Shoal is a large (215 km<sup>2</sup>) and complex bathymetrical feature situated on the outer continental shelf off the Pilbara. Glomar Shoal is about 8.5 times wider than Rankin Bank at the 60 m contour. Glomar Shoal rises from 80 m depth on its south-west side and 70 m depth on its north-eastern side to form a single plateau at 40 m depth (Abdul Waheb et al., 2018). Together with Rankin Bank, these remote shallow water areas represent regionally unique habitats and are considered likely to play an important role in the productivity of the Pilbara region (AIMS, 2014; Abdul Wahab et al., 2018). Refer to Figure 4-1.

Baseline biodiversity and habitat mapping surveys of the benthic habitats and communities at Glomar Shoal and Rankin Bank were undertaken in 2013 and 2017 by AIMS (2014) as detailed in Abdul Waheb et al. (2018) and Jones et al. (2021), respectively. Salinity and temperature were found to be slightly higher in 2017 compared with the 2013 values (Abdul Wahab et al., 2018), most likely due to seasonality. Substrates at Glomar Shoal were found to vary with depth, from coarse unconsolidated sediment at depths greater than 60 m and hard substrate (i.e. consolidate reef) supporting benthic communities comprising hard and soft corals, sponges and macroalgae at depths <40 m (Abdul Wahab et al., 2018). Total cover of benthic taxa (hard coral, soft coral, sponges and other benthic biota) was highest at depths <40 m and decreased with depth (Abdul Wahab et al., 2018). At depths of 60 to 80 m benthic cover was low (about 2%) and at depths greater than 80 m benthic cover was barely present (Abdul Wahab et al., 2018).

A total of 170 fish species were identified at Glomar Shoal and fish abundance and diversity of the demersal fish communities of Glomar Shoal were found to vary with seabed habitat type; sand, hard coral and sponge coverage influenced fish communities, with higher abundance and diversity of fish associated with shallow hard coral habitats. (Abdul Wahab et al., 2018). In general, the fish abundance and diversity of Glomar Shoal are considered comparable with other reefs and the submerged shoals and banks in the region, although less diverse and abundant than fish assemblages at Rankin Bank (Abdul Wahab et al., 2018).

Glomar Shoal is recognised as a KEF within NWMR, refer to Table 10-1. Protected Area status (Australian Marine Parks and State Marine Parks and Reserves) is described in Section 11 and

includes the Commonwealth Marine Park of Montebello, and the State Marine Parks of Montebello Islands and Barrow Island and the Barrow Island marine management area.

#### 4.4.4 North West Cape

Ningaloo Reef and Shark Bay are among Australia's iconic marine areas, and the significance of these ecosystems is recognised through their inclusion in State and Commonwealth Marine Parks and the World Heritage Register. Ningaloo Reef is the only example in the world of an extensive fringing reef on the West coast of a continent and is host to over 200 coral species and more than 500 reef fish species. Shark Bay is the most westerly point of Australia and represents a transition zone between temperate and tropical marine fauna, resulting in high species diversity (Miller et al., 2015), including fringing coral communities on the leeside of the barrier islands of Dirk Hartog, Bernier and Dorre. Ningaloo Reef is one of the longest (approximately 300 km) and most pristine fringing reefs in the world, with an unusually narrow continental shelf. Deep oceanic waters, the reef and coastline habitats and benthic communities are in proximity, resulting in a huge array of internationally significant marine life coexisting. More than 200 hard coral, 500 fish, 650 mollusc, 600 crustacean, 1000 marine algae, 155 sponge and 25 echinoderm species have been recorded from the shelf, slope and deepwater habitats<sup>2</sup>. Refer to the CSIRO Ningaloo Outlook program for further information and publications relating to the shallow and deep-water reef systems, and megafauna species (marine turtles and whale sharks)<sup>3</sup>.

The extensive reef system has been classified by topography and benthic cover using airborne hyperspectral surveys and much of the area was allocated as shallow, flat lagoons intersected by narrow, deeper channels that facilitate water circulation. Five distinct geomorphic/benthic classes of coral-algae mosaics in different topographic settings: coral and algal communities (reef flat and very shallow areas), coral and algal communities (backreef and shallow forereef), coral and algal communities (deep forereef and other deep areas), sand or limestone pavement (lagoonal slopes and flat lagoon areas) (Kobryn et al., 2022).

Ningaloo and the Muiron Islands fringing reef habitat supports benthic communities dominated by algae and consolidated reef in the shallow reef environment. Surveys conducted by AIMS in 2024 documented hard coral cover averaged approximately 13% across the Ningaloo Marine Park area (Miller et al., 2015). A notable pattern in the benthos recorded by Miller et al. (2015) was an increase in coral cover with latitude, with the highest coral cover recorded around Coral Bay and the reef areas in southern Ningaloo. Coral cover was the lowest at the East Ningaloo Province (northern Exmouth Gulf) (<6%). Relative to Scott Reef and the Rowley Shoals, the Ningaloo benthic communities are distinct in that they are characterised by high biotic cover overall, but dominated by algal cover and with less than half the cover of key biota including hard corals, soft corals and sponges as recorded on offshore reefs (Miller et al., 2015).

Ningaloo Reef is vulnerable to storm damage and marine heat stress events that have resulted in past localised coral damage and moderate coral bleaching. Coral bleaching occurred in 2022 due to warm ocean temperatures driven by the 2021–22 La Niña. The region's last severe marine heatwave was driven by the 2010–11 La Niña, which resulted in bleaching being recorded for the first time on Ningaloo<sup>4</sup>. Also of note is the recurrent deoxygenation events at Bills Bay (Coral Bay) following coral spawning events. In March 2022, the deoxygenation event was triggered by a combination of weather and oceanographic conditions that led to a prolonged trapping of coral spawn in Bills Bay and this in turn caused mass coral mortality and a large but localised fish kill. The 2022 deoxygenation event was the seventh such event recorded in documented history (Richards et al., 2024).

<sup>2</sup> <https://www.dbca.wa.gov.au/management/world-heritage-areas/ningaloo-coast-world-heritage-area#:~:text=One%20of%20the%20longest%20and,life%20coexisting%20in%20one%20area> [accessed on 18/08/2024]

<sup>3</sup> <https://research.csiro.au/ningaloo/outlook/research-outputs/publications/>

<sup>4</sup> <https://www.csiro.au/en/research/environmental-impacts/climate-change/state-of-the-climate>

The Shark Bay region is renowned for its terrestrial and marine biodiversity including seagrass cover extending over 4000 km<sup>2</sup> of the bay and the 1.030 km<sup>2</sup> Wooramel Seagrass Bank is the largest structure of its type in the world. Baseline surveys conducted in 2014 by AIMS specifically targeted the outer Shark Bay area and the habitats and benthic communities surrounding the barrier islands of Dirk Hartog, Bernier and Dorre. Sand was a dominant feature of the benthos (>60%), particularly in areas inside the bay and in deep water outside the bay. Benthic communities in relatively sheltered areas of outer Shark Bay were characterised by seagrass and turf algae, whereas in more exposed locations, benthos was dominated by macroalgal and turf algal communities. Corals and sponges made up <1% of the cover in outer Shark Bay, although due to inclement weather during surveys shallow areas where coral species are more likely to occur could not be surveyed. Observations of patchy but high coral cover in shallow parts of some towed video transects suggests coral cover across outer Shark Bay may have been underestimated. The highest coral cover was recorded in the channel between Dirk Hartog and Dorre Islands, indicating this area may be particularly favourable for coral growth (Miller et al., 2015).

Commonwealth waters adjacent to Ningaloo Reef is recognised as a KEF within NWMR, refer to Table 10-1. Protected Area status (Australian Marine Parks and State Marine Parks and Reserves) is described in Section 11 and includes the Commonwealth Marine Parks of Ningaloo and Shark Bay, and the State Marine Parks of Ningaloo Reef, the Muiron Islands marine management area, Shark Bay marine park and Hamelin Pool nature reserve.

#### **4.4.5 Shoreline, Coastal Habitats and Biological Communities**

The NWMR encompasses offshore and coastal waters, islands and mainland shoreline habitats typified by mangroves, tidal flats, saltmarshes, coral reefs (remote, offshore reef systems to extensive fringing reef systems such as Ningaloo), 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,) 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.

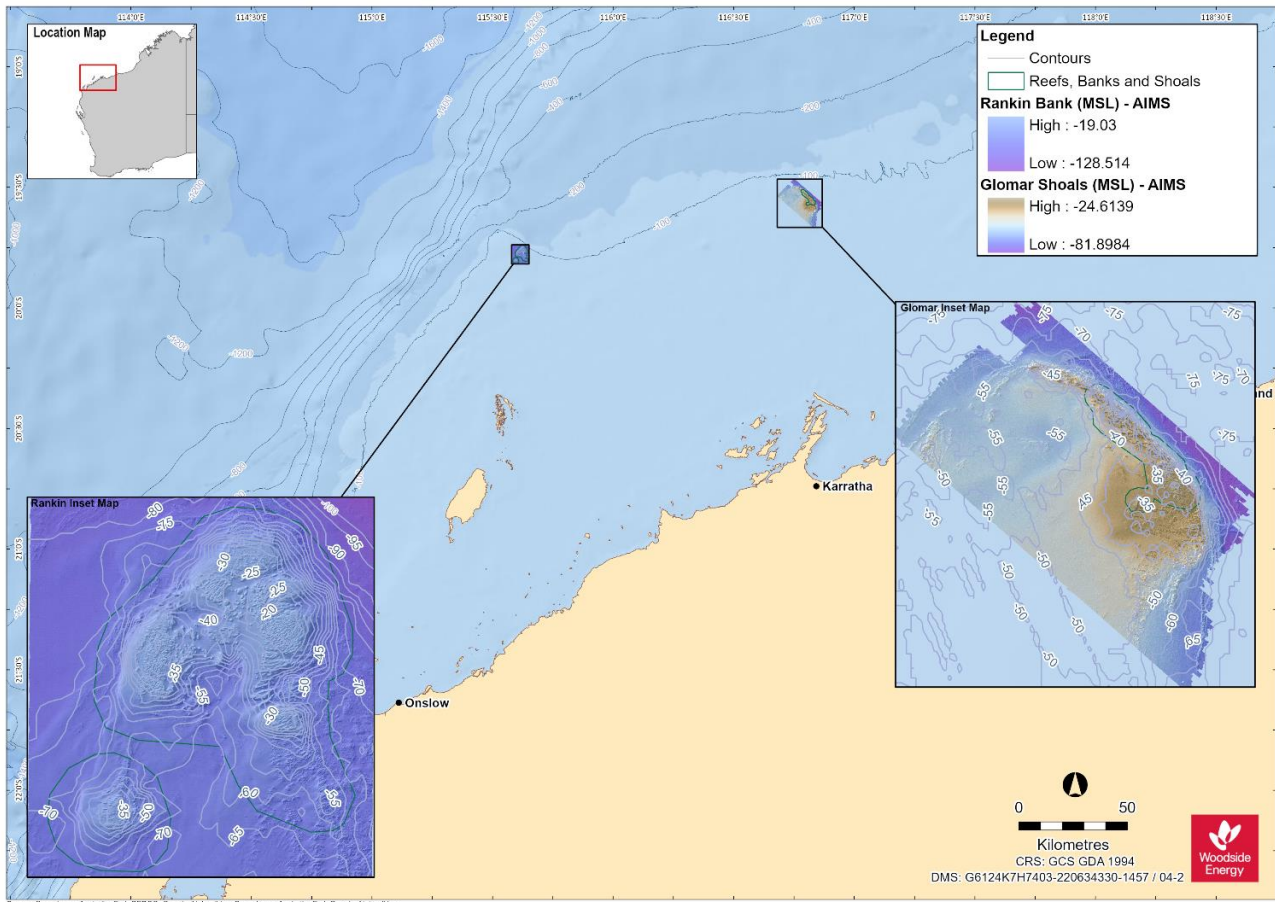


Figure 4-2: Habitat maps of Rankin Bank and Glomar Shoal (source: AIMS, 2014)

Table 4-1: Habitats and biological communities within the NWMR

Habitat / Community	Browse	NWS / Scarborough	North West Cape	Reference
<b>Offshore habitats and biological communities</b>				
<b>Soft sediment with infauna</b>	The offshore environment of the NWMR comprises predominantly 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.			
<b>Soft sediment with hard substrate outcropping</b>	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 10
	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 10
<b>Coral reef</b>	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 4.4.1 Section 10 Section 11
<b>Seagrass and macroalgae communities</b>	Seagrass beds and benthic macroalgae reefs are a main food source for many marine species and also provide key habitats and nursery grounds (Heck et al., 2003; Wilson et al., 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 11

Habitat / Community	Browse	NWS / Scarborough	North West Cape	Reference
<b>Filter feeders/ heterotrophic</b>	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 systems such as Scott Reef	Glomar Shoal Rankin Bank Ancient coastline at 125 m depth contour KEF	Cape Range canyon system	Section 4.4.1 Section 10 Section 11
<b>Sandy beaches</b>	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 11
<b>Nearshore/coastal habitats and biological communities</b>				
<b>Coral reef</b>	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 11
<b>Seagrass and macroalgae communities</b>	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. et al., 2003; Wilson et al., 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 11

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Habitat / Community	Browse	NWS / Scarborough	North West Cape	Reference
<b>Filter feeders/ heterotrophic</b>	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 is 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	
<b>Mangroves</b>	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie et al., 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 et al., 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	Section 11
<b>Saltmarshes</b>	Saltmarsh 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	Section 11
<b>Sandy beaches</b>	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	Section 11

Table 4-2: Habitats within the SWMR

Habitat / Community	Location
<b>Offshore</b>	
<b>Soft sediment with infauna</b>	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).
<b>Soft sediment with hard substrate outcropping</b>	<p>A unique seafloor feature combining both soft sediment and hard substrates, including outcrops, terraces, continental slope, and escarpments.</p> <p>Perth Canyon Marine Park Ancient coastline at 90 to 120 m depth contour KEF Diamantina Fracture Zone Naturaliste Plateau</p>
<b>Coral reef</b>	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.
<b>Filter feeders/ heterotrophic</b>	<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 (DEWR, 2007). Filter feeders generally inhabit deeper habitat (below the photic zone) that have strong currents and hard substratum.</p> <p>Ancient coastline at 90 to 120 m depth Diamantina Fracture Zone Naturaliste Plateau Perth Canyon Marine Park South-west Corner Marine Park</p>
<b>Nearshore</b>	
<b>Coral reef</b>	<p>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.</p> <p>Houtman Abrolhos Islands Rottnest Island</p>



Habitat / Community	Location
<b>Seagrass and macroalgae communities</b>	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 Rottnest Island 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
<b>Filter feeders/ heterotrophic</b>	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
<b>Mangroves</b>	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie et al., 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 et al., 2006). Mangroves are confined to shoreline habitats, in nearshore areas of the SWMR.
	Houtman Abrolhos Islands
<b>Sandy beaches</b>	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
<b>Offshore Habitats and Biological Communities</b>	
<b>Soft sediment with infauna</b>	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.
<b>Soft sediment with hard substrate outcropping</b>	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
<b>Coral reef</b>	Offshore coral reefs within the NMR are 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 et al., 1997).
	Pinnacles of the Bonaparte Basin KEF Evans Shoal Tassie Shoal Blackwood Shoal
<b>Filter feeders/heterotrophic</b>	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

Habitat / Community	Location
<b>Nearshore</b>	
<b>Coral reef</b>	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
<b>Seagrass and macroalgae communities</b>	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
<b>Filter feeders/ heterotrophic</b>	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 inhabit areas that have strong currents and hard substratum.
	Cape Helveticus
<b>Mangroves</b>	Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie et al., 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.
	Tiwi Islands Darwin Harbour The mainland coastline adjacent to the Daly River
<b>Sandy beaches</b>	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.
	Tiwi Islands Cobourg Peninsula Joseph Bonaparte Gulf

## 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 NWMR supports a wide diversity of global fish species. 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 12.

Table 5-1 outlines the threatened and migratory fish species that may or are known to occur within the NWMR, with their conservation status and relevant recovery plans and/or conservation advice.

Table 5-2 includes fish species listed as conservation dependent that may occur within the NWMR, NMR and SWMR.

**Table 5-1: Fish species (including sharks and rays) identified by the EPBC Act PMST that may occur within the NWMR**

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>5</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>6</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Rhincodon typus</i>	Whale shark	Vulnerable	Migratory	Marine	Migratory	Endangered	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	Critically Endangered	Recovery Plan for the Grey Nurse Shark ( <i>Carcharias taurus</i> ) (DOE, 2014)
<i>Carcharodon carcharias</i>	White shark	Vulnerable	Migratory	Marine	Vulnerable	Vulnerable	Recovery Plan for the White Shark ( <i>Carcharodon carcharias</i> ) (DSEWPAC, 2013b)
<i>Isurus oxyrinchus</i>	Shortfin mako	N/A	Migratory	Marine	Migratory	Endangered	N/A
<i>Isurus paucus</i>	Longfin mako	N/A	Migratory	Marine	Migratory	Endangered	N/A
<i>Lamna nasus</i>	Porbeagle shark, mackerel shark	N/A	Migratory	Marine	Migratory	Vulnerable	N/A
<i>Carcharhinus longimanus</i>	Oceanic whitetip shark	N/A	Migratory	Marine	N/A	Critically Endangered	N/A
<i>Anoxypristis cuspidata</i>	Narrow sawfish	N/A	Migratory	Marine	Migratory	Critically Endangered	N/A
<i>Pristis clavata</i>	Dwarf sawfish	Vulnerable	Migratory	Marine	Priority	Critically Endangered	Sawfish and River Sharks Multispecies Recovery Plan (Commonwealth of Australia, 2015b)
<i>Pristis pristis</i>	Largetooth (freshwater) sawfish	Vulnerable	Migratory	Marine	Priority	Critically Endangered	

<sup>5</sup> Threatened and Priority Fauna List – April 2024 - <https://www.dbca.wa.gov.au/management/threatened-species-and-communities> (accessed on 13/08/2024).<sup>6</sup> IUCN, 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org> (accessed on 13/08/2024).

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>5</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>6</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Pristis zijsron</i>	Green sawfish	Vulnerable	Migratory	Marine	Vulnerable	Critically Endangered	
<i>Glyphis garricki</i>	Northern river shark	Endangered	N/A	Marine	Priority	Vulnerable	
<i>Manta alfredi</i>	Reef manta ray	N/A	Migratory	Marine	Migratory	Vulnerable	N/A
<i>Manta birostris</i>	Giant manta ray	N/A	Migratory	Marine	Migratory	Endangered	N/A

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. Managed under AFMA's Orange Roughy Stock Rebuilding Strategy (AFMA, 2014).
<i>Sphyrna lewini</i>	Scalloped hammerhead	NWMR, NMR and SWMR <sup>7</sup>	Threatened Species Scientific Committee, 2018.
<i>Galeorhinus galeus</i>	School shark, eastern school shark, snapper shark, tope, soupfin shark	SWMR	Threatened Species Scientific Committee, 2009.
<i>Centrophorus uyato</i>	Little gulper shark	NWMR and SWMR	No conservation listing advice for this species. Refer to listing advice (Threatened Species Scientific Committee, 2013).

<sup>7</sup> A recurrent aggregation of scalloped hammerheads has been recorded within the Shoalwater Islands Marine Park (32° S; 115° E), 240 km south of Jurien Bay, observed from drone footage collected during the 2019 and 2020 Austral summers. The species has rarely been recorded south of Jurien Bay previously (López et al., 2022).

## 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 (Table 5-3).

### 5.2.1 Sharks and Sawfishes

The shark species that may or are known to occur within the NWMR include: the whale shark, grey nurse shark, white shark, shortfin mako and longfin mako (Table 5-3).

Five species of river shark or sawfish that may or are known to occur in the NWMR include: the narrow sawfish, northern river shark, freshwater sawfish, green sawfish and dwarf sawfish (Table 5-3).

There are identified biologically important areas (BIAs) within the NWMR for the whale shark, freshwater sawfish, green sawfish and dwarf sawfish (Table 5-5).

**Table 5-3: Information on the EPBC-listed threatened shark, fish and sawfish species that may or are known to occur within the NWMR**

Species	Preferred Habitat and Diet	Habitat Location
<b>Whale shark</b>	Preferred habitat: They have a widespread distribution in tropical and warm temperate seas, throughout oceanic and coastal Australian waters (Last and Stevens, 2009). Diet: Whale sharks are planktivorous and feed on a variety of planktonic species 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). Acoustically tagged whale sharks have been detected on the NWS in June, July and October–January (Thomson et al., 2021). Satellite tagging and sightings of whale sharks off the Western Australian coast indicate that while whale sharks aggregate in higher numbers at Ningaloo Reef seasonally, they may be present year-round (Norman et al., 2017). Refer to Table 5-5 for the BIA summary for the whale shark.
<b>Grey nurse shark (west-coast population)</b>	Preferred habitat: Most 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; Kyne et al., 2021). Diet: A variety of teleost and elasmobranch fishes and some cephalopods (Gelsleichter et al., 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 et al., 2006). The NWMR represents the northern limit of the West-coast population. Sighting and bycatch data have indicated grey nurse sharks are present near Exmouth and Shark Bay between May to December (Hoschke et al., 2023).
<b>White shark</b>	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 et al., 2006; Bruce, 2008). Diet: Smaller white sharks (less than 3 m length) feed primarily on teleost and elasmobranch fishes, broadening their diet as larger sharks to include marine mammals (Last and Stevens, 2009).	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). Given the migratory nature of the species, it most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.

Species	Preferred Habitat and Diet	Habitat Location
<b>Shortfin mako</b>	<p>Preferred habitat: The shortfin mako shark is a pelagic species with a circumglobal, wide-ranging oceanic distribution in tropical and temperate seas (Mollet et al., 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 et al., 2011; Stevens et al., 2010). Satellite telemetry data suggest shortfin makos have multiple movement phases, displaying both high connectivity between Australian populations and periods of residency (Corrigan et al., 2018).</p> <p>Diet: Feeds on a variety of prey, such as teleost fishes, other sharks, marine mammals, and marine turtles (Campana et al., 2005).</p>	<p>Given the migratory nature of the species, it most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>
<b>Longfin mako</b>	<p>Preferred habitat: A pelagic species with a wide-ranging, patchy, oceanic distribution in tropical and temperate seas (Mollet et al., 2000; Kyne et al., 2021). They have been recorded at depth ranges of 0–1752 m (Kyne et al., 2021).</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 et al., 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>
<b>Mackerel/ porbeagle shark</b>	<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 et al., 2002). The porbeagle shark is known to dive to depths exceeding 1300 m (Campana et al., 2010; Saunders et al., 2011). Depth range records are 0–370 m (Kyne et al., 2021).</p> <p>Diet: Primarily teleost fish, elasmobranchs, and cephalopods (primarily squid) (Joyce et al., 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 within the NWS (Atlas of Living Australia (ALA)).</p>
<b>Oceanic whitetip shark</b>	<p>Preferred habitat: The oceanic whitetip shark is globally distributed in warm-temperate and tropical oceans (Andrzejczek et al., 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 et al., 2013; D'Alberto et al., 2017). The species is highly migratory, travelling large distances between shallow reef habitats in coastal waters and oceanic waters (Howey-Jordan et al., 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. Targets pelagics such as tuna in open ocean as noted by the large bycatch numbers in the longline fisheries.</p>	<p>Given the migratory nature of the species, it most likely has a broad distribution within the NWMR. No BIAs identified for NWMR.</p>



Species	Preferred Habitat and Diet	Habitat Location
<b>Narrow sawfish</b>	Preferred habitat <sup>1</sup> : Shallow coastal, estuarine, and riverine habitats; however, it may occur in waters up to 40 m deep (D'Anastasi et al., 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).
<b>Northern river shark</b>	Preferred habitat <sup>1</sup> : Rivers, tidal sections of large tropical estuarine systems and macrotidal embayments, as well as inshore and offshore marine habitats (Pillans et al., 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 et al., 2009). Depth range of up to 23 m (Kyne et al., 2021). Diet: Variety of fish and crustaceans (Stevens et al., 2005).	The northern river shark has a relatively restricted northern Australian range (although with an extent of occurrence >20,000 km <sup>2</sup> ) (Kyne et al., 2021). 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 et al., 2005; Thorburn, 2006; Field et al., 2008; Pillans et al., 2008, Whitty et al., 2008; Wynen et al., 2008).
<b>Largetooth (freshwater) sawfish</b>	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).	The largetooth sawfish has a wide Northern Australia range (Kyne et al., 2021). The Kimberley region, particularly the Fitzroy River, is identified as an important nursery site (Bateman et al., 2024). The Exmouth Gulf represents the approximate southern limit for the largetooth (freshwater) sawfish, although there are a few historical records further south (Bateman et al., 2024). Refer to Table 5-5 for the BIA summary for the largetooth (freshwater) sawfish.
<b>Green sawfish</b>	Preferred habitat <sup>1</sup> : Inshore coastal environments including estuaries, river mouths, embayments, and along sandy and muddy beaches, as well as offshore marine habitat (Stevens et al., 2005; Thorburn et al., 2003). They are found at depths of up to 70 m (Kyne et al., 2021). Diet: Schools of baitfish and prawns (Pogonoski et al., 2002), molluscs and small crustaceans (Cliff and Wilson, 1994).	An aggregation of green sawfish ( <i>Pristis zijsron</i> ) has been identified in the Garig Gunak Barlu National Park (Cobourg Peninsula, NMR). Davies et al. (2022) suggests this may be a nursery area. The Ashburton River Estuary (Onslow region) has been recorded as a nursery site, with juveniles also observed along the Pilbara coast and Exmouth Gulf (Bateman et al., 2024). Refer to Table 5-5 for the BIA summary for the green sawfish.
<b>Dwarf sawfish</b>	Preferred habitat <sup>1</sup> : Shallow (up to 20 m) silty coastal waters and estuarine habitats, occupying relatively restricted areas and moving only small distances (Stevens et al., 2008; Kyne et al., 2015). Diet: Shoaling fish such as mullet, molluscs, and small crustaceans (Cliff and Wilson, 1994).	Literature indicates the most southern range for the dwarf sawfish is Port Hedland (Bateman et al., 2024). Refer to Table 5-5 for the BIA summary for the dwarf sawfish.

<sup>1</sup>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 are 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 5-4: Information on migratory ray species within the NWMR**

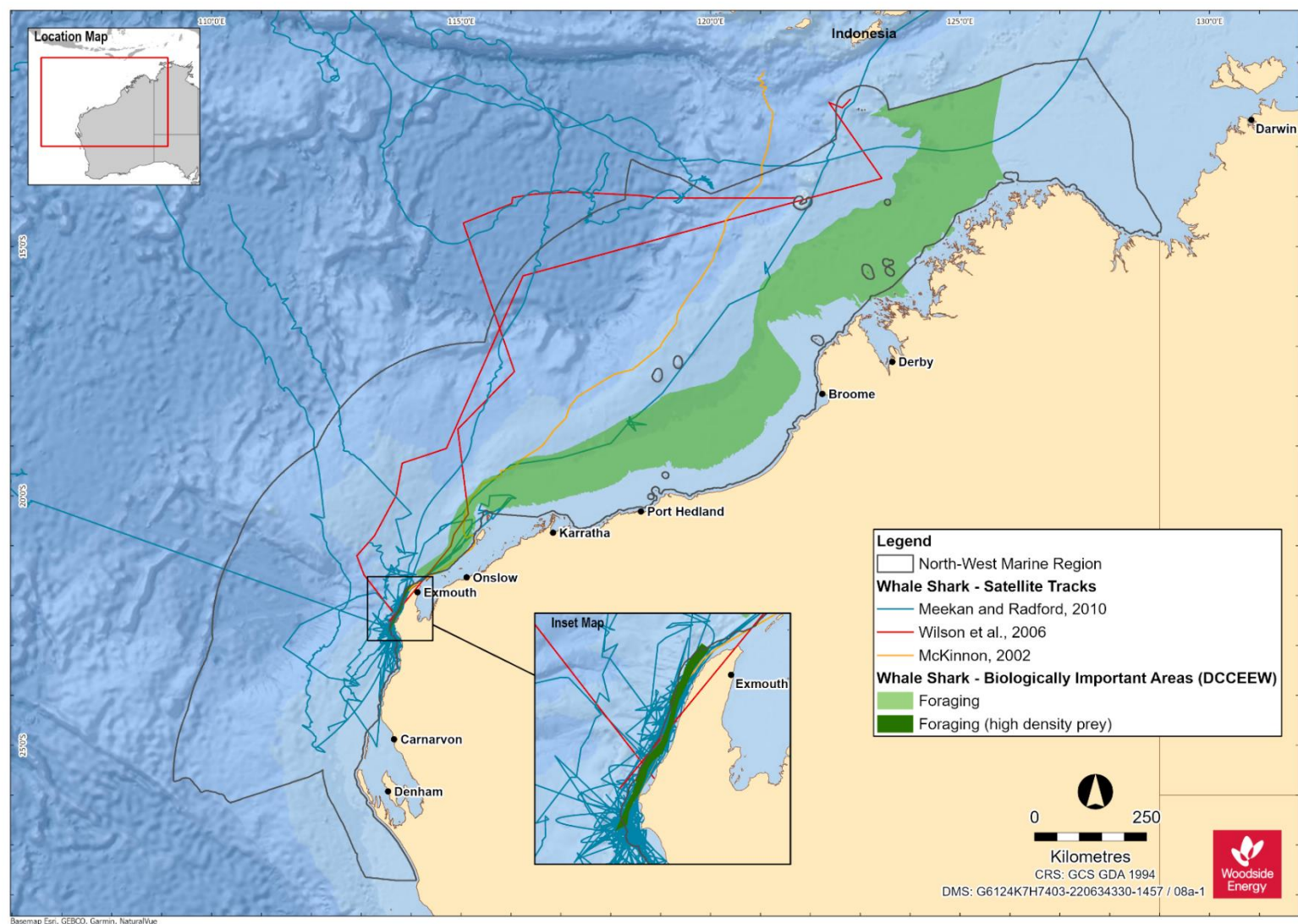
Species	Preferred Habitat and Diet	Habitat Location
<b>Reef manta ray</b>	Preferred habitat: The reef manta ray is commonly sighted within productive nearshore environments, such as island groups, atolls or continental coastlines. However, the species has also been recorded at offshore coral reefs, rocky reefs, and seamounts (Marshall et al., 2009). Recorded depth range of 0–432 m (Kyne et al., 2021).  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.
<b>Giant manta ray</b>	Preferred habitat: The species primarily inhabits near-shore environments along productive coastlines with regular upwelling, but they appear to be seasonal visitors to coastal or offshore sites including offshore island groups, offshore pinnacles and seamounts (Marshall et al., 2011). Recorded depth range of up to 1000 m (Kyne et al., 2021).  Diet: Feed on planktonic organisms including krill and crab larvae.	The Ningaloo coast is an important area for giant manta rays from March to August (Preen et al., 1997).  No BIAs identified for NWMR.

### 5.3 Fish, Shark and Sawfish Biological Important Areas in the NWMR

A review of the Australian Marine Spatial Information System (GA, 2024) identified biologically important areas (BIAs) for four species of fish, shark and sawfish (whale shark, largetooth (freshwater) sawfish, green sawfish and dwarf sawfish) within the NWMR. The BIAs for the whale shark and the sawfish species include foraging, nursing, juvenile and pupping areas. These are described in Table 5-5.

**Table 5-5: Fish, whale shark and sawfish BIAs within the NWMR (source: AMSIS, accessed 14/08/2024)**

	Woodside Activity Area			BIAs			
	Browse	NWS	NWC	Reproduction—Pupping	Reproduction—Nursing	Juvenile	Foraging
<b>Whale shark</b>	✓	✓	✓	No pupping BIA identified within the NWMR	No nursing BIA identified within the NWMR	N/A	Foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (Mar–Jul) Foraging northward from Ningaloo along the 200 m isobath (Jul–Nov)
<b>Green sawfish</b>	✓	✓	-	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	No juvenile BIA identified within the NWMR.	Foraging in Cape Keraudren Foraging in Roebuck Bay Foraging in Cape Leveque Foraging in Camden Sound
<b>Large-tooth (freshwater) sawfish</b>	✓	✓	-	Pupping in the mouth of the Fitzroy River (Jan–May) Roebuck Bay (Jan–May) Pupping likely in waters adjacent to Eighty Mile Beach (Jan–May)	Nursing (likely) in King Sound	Waters adjacent to Eighty Mile Beach Roebuck Bay	Foraging in the mouth of the Fitzroy River (Jan–May) Foraging in King Sound Roebuck Bay (Jan–May) Foraging in waters adjacent to Eighty Mile Beach
<b>Dwarf sawfish</b>	✓	✓	-	Pupping in King Sound Pupping in waters adjacent to Eighty Mile Beach	Nursing in King Sound Nursing waters adjacent to Eighty Mile Beach	King Sound	Foraging in King Sound Foraging in Camden Sound Foraging in waters adjacent to Eighty Mile Beach



**Figure 5-1: Whale shark biologically important areas (BIAs) for the NWMR and tagged whale shark satellite tracks (data source for BIAs: DCCEEW, 2024b)**

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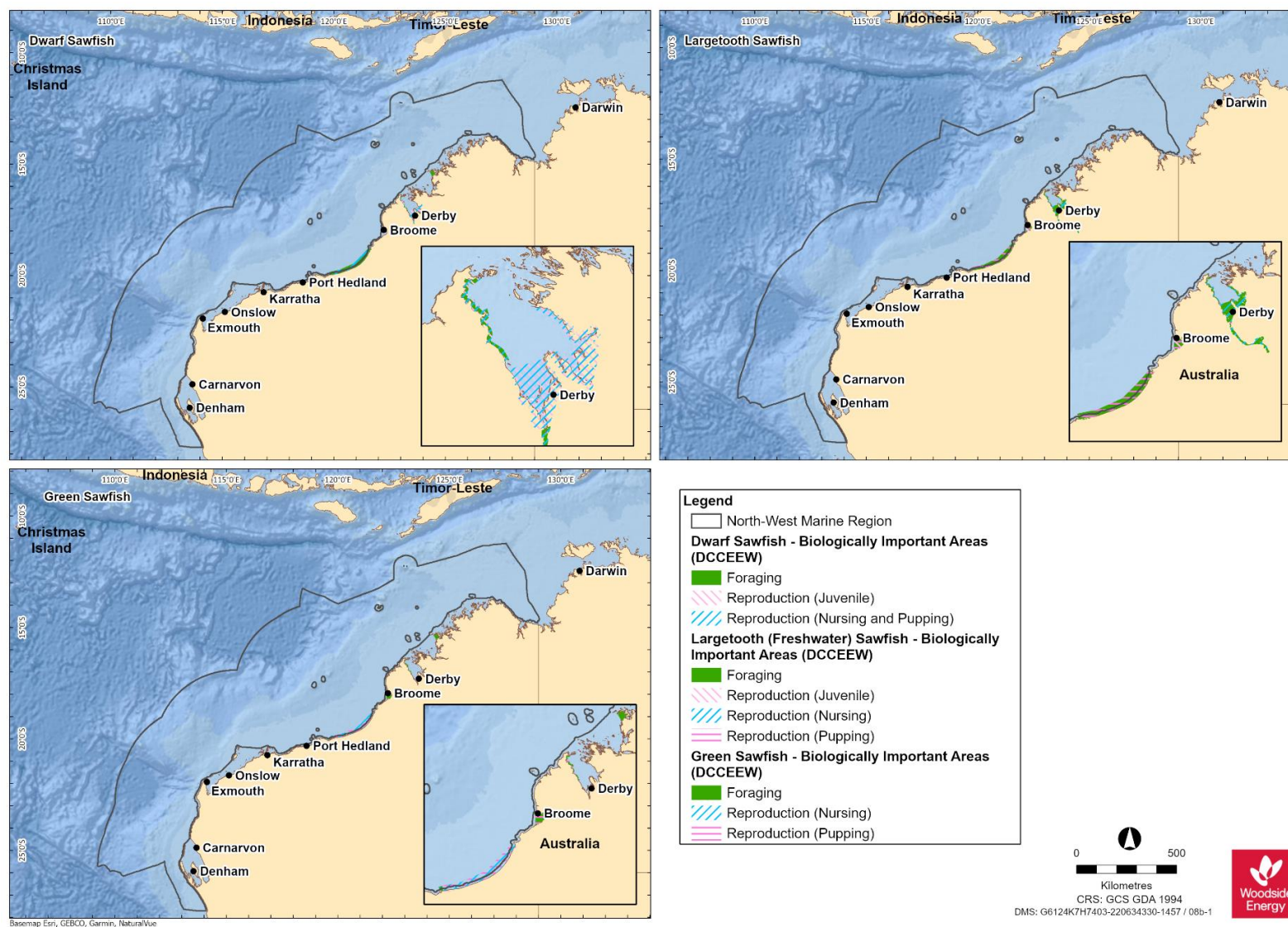
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**Figure 5-2: Sawfish BIAs for the NWMR (data source: DCCEEW, 2024b)**

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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. A study of fish assemblages of the Dampier Archipelago found habitat type and complexity influenced fish abundance, with significantly higher abundance in mangrove and coral habitats (Moustaka et al., 2024).

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 with 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 10.

The ancient coastline at 125 m depth contour KEF within the NWMR is thought to support enhanced diversity. Drivers of fish species richness, biodiversity and assemblage composition have been assessed, finding that depth, seafloor complexity and habitat type explain richness and abundance of fish assemblages (Currey-Randall et al., 2021). This study also found that fish communities along the ancient coastline KEF are similar to other mesophotic areas on the NWS. Most of the surveyed feature was characterised by soft sediment and highly mobile fish species (Currey-Randall et al., 2021).

The NWMR also features a diversity of pelagic fishes (those living in the pelagic zone) and benthopelagic fishes, including tuna, billfish, bramid, 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).

#### 5.4.1.1 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 55 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.

#### 5.4.2 Browse

The proposed Browse activity area includes biologically important habitat for the whale shark and three sawfish species, being:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July–November) (Table 9-1)
- largetooth (freshwater) sawfish (pupping, nursing and foraging areas)
- green sawfish (pupping, nursing and foraging areas)
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the shark and sawfish species are outlined in Table 5-5 and Figure 5-1.

The proposed Browse activity area has partial overlap with the continental slope demersal fish communities KEF.

#### 5.4.3 North West Shelf / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for the whale shark and three sawfish species, being:

- whale shark (foraging northward from Ningaloo along the 200 m isobath (July–November) (Table 9-1)
- freshwater sawfish (pupping, nursing and foraging areas)
- green sawfish (pupping, nursing and foraging areas)
- dwarf sawfish (pupping, nursing and foraging areas).

BIAs for the whale shark and sawfish species are outlined in Table 5-5 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).

#### 5.4.4 North West Cape

The North West Cape activity area includes biologically important foraging habitat for the whale shark, being:

- foraging (high density) in Ningaloo Marine Park and adjacent Commonwealth waters (March–July) (Table 9-1)
- foraging northward from Ningaloo along the 200 m isobath (July–November) (Table 9-1).

BIAs for the whale shark are outlined in Table 5-5 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, with four species of marine turtles occurring in the SWMR (see Protected Matters reports in Appendix A).

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 (see NWMR Protected Matters report in Appendix A).

There are significantly fewer marine reptile species that frequently occur within the SWMR and presently include four species of listed marine turtle and six sea snake species. Other species of sea snake may occur because of the southward-flowing Leeuwin Current as vagrants in the region (DSEWPAC, 2012b) (see SWMR Protected Matters report in Appendix A).

Twenty-eight listed sea snake species 'may' occur in the NMR, as reported in the Protected Matters report in Appendix A).

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 may or are known to 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 that may occur within or utilise habitats in the NWMR for key life cycle stages**

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>8</sup>	IUCN <sup>1</sup> Red List of Threatened Species (non-statutory) <sup>9</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Caretta caretta</i>	Loggerhead turtle	Endangered	Migratory	Marine	Endangered	Vulnerable	Recovery Plan for Marine Turtles in Australia 2017–2027 (Commonwealth of Australia, 2017)
<i>Chelonia mydas</i>	Green turtle	Vulnerable	Migratory	Marine	Vulnerable	Endangered	
<i>Dermochelys coriacea</i>	Leatherback turtle	Endangered	Migratory	Marine	Vulnerable	Vulnerable	
<i>Eretmochelys imbricata</i>	Hawksbill turtle	Vulnerable	Migratory	Marine	Vulnerable	Critically Endangered	
<i>Natator depressus</i>	Flatback turtle	Vulnerable	Migratory	Marine	Vulnerable	Data Deficient	
<i>Lepidochelys olivacea</i>	Olive ridley turtle	Endangered	Migratory	Marine	Endangered	Vulnerable	Conservation Advice for <i>Varanus mitchelli</i> (Mitchell's water monitor) (DCCEEW, 2023c)
<i>Varanus mitchelli</i>	Mitchell's water monitor	Critically Endangered	N/A	N/A	N/A	Critically Endangered	
<i>Aipysurus apraefrontalis</i>	Short-nosed sea snake	Critically Endangered	N/A	Marine	Critically Endangered	Data Deficient	
<i>Aipysurus foliosquama</i>	Leaf-scaled sea snake	Critically Endangered	N/A	Marine	Critically Endangered	Data Deficient	
<i>Aipysurus fuscus</i>	Dusky sea snake	Endangered	N/A	Marine	N/A	Endangered	
<i>Crocodylus porosus</i>	Salt-water crocodile	N/A	Migratory	Marine	Migratory	Least Concern	N/A

<sup>8</sup> Threatened and Priority Fauna List – April 2024. <https://www.dbca.wa.gov.au/management/threatened-species-and-communities> (accessed on 13/08/2024).

<sup>9</sup> IUCN. 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org> (accessed on 13/08/2024).

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## 6.2 Marine Turtles in the NWMR, SWMR and NMR Bioregions

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*) turtles (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.

Four marine turtle species; the green, loggerhead, flatback, 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. The majority of their lives are spent in the ocean, with only adult female marine turtles coming 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).

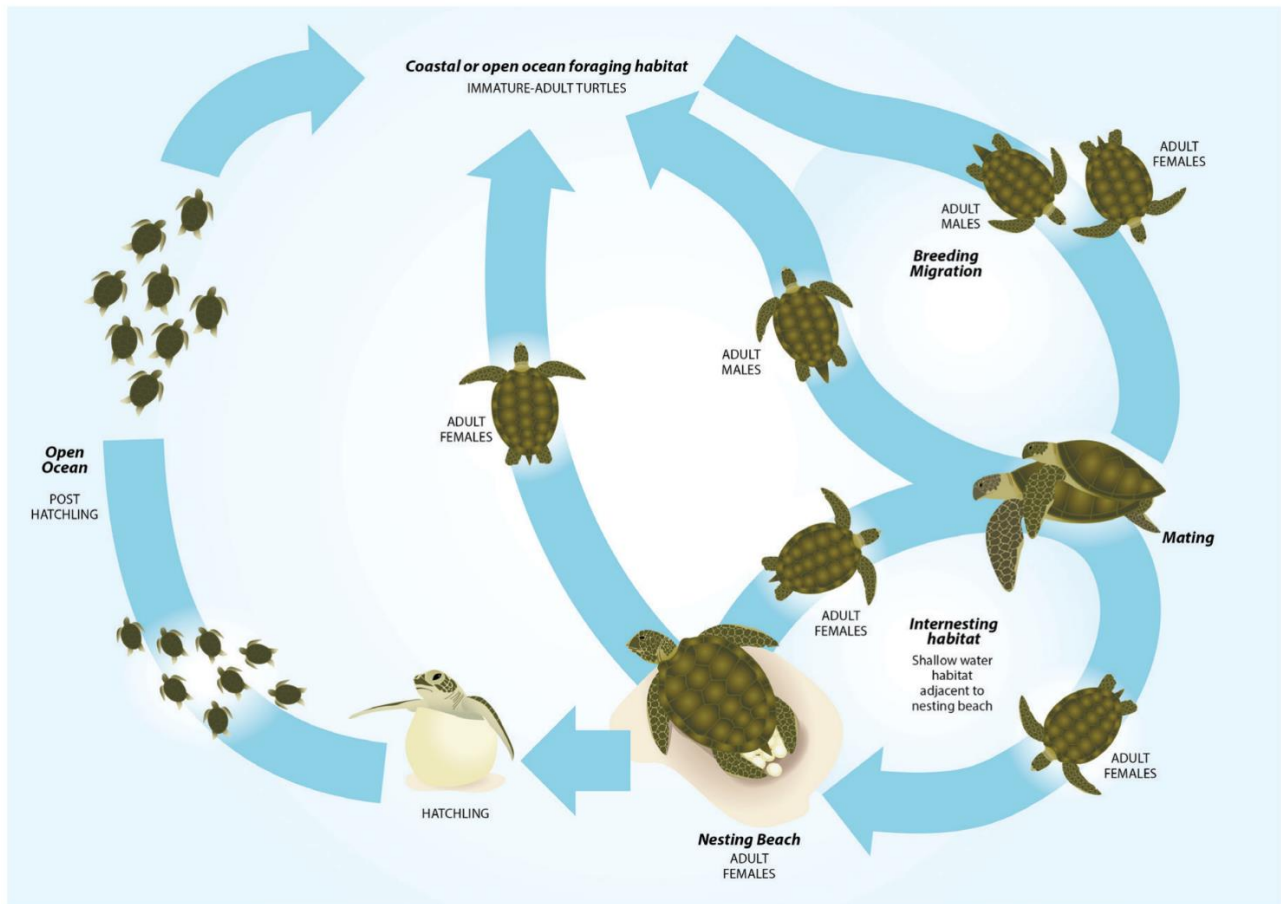


Figure 6-1: Generalised life cycle of marine turtles (Commonwealth of Australia, 2017)

### 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
- 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 internesting 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 <sup>1</sup> )	Internesting Buffer	Seasonality Nesting	Preferred Habitat <sup>2</sup>
<b>Green Turtle</b>							
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	

Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (*Major Rookery <sup>1</sup> )	Internesting Buffer	Seasonality Nesting	Preferred Habitat <sup>2</sup>
<b>Hawksbill Turtle</b>							
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.
<b>Flatback Turtle</b>							
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	

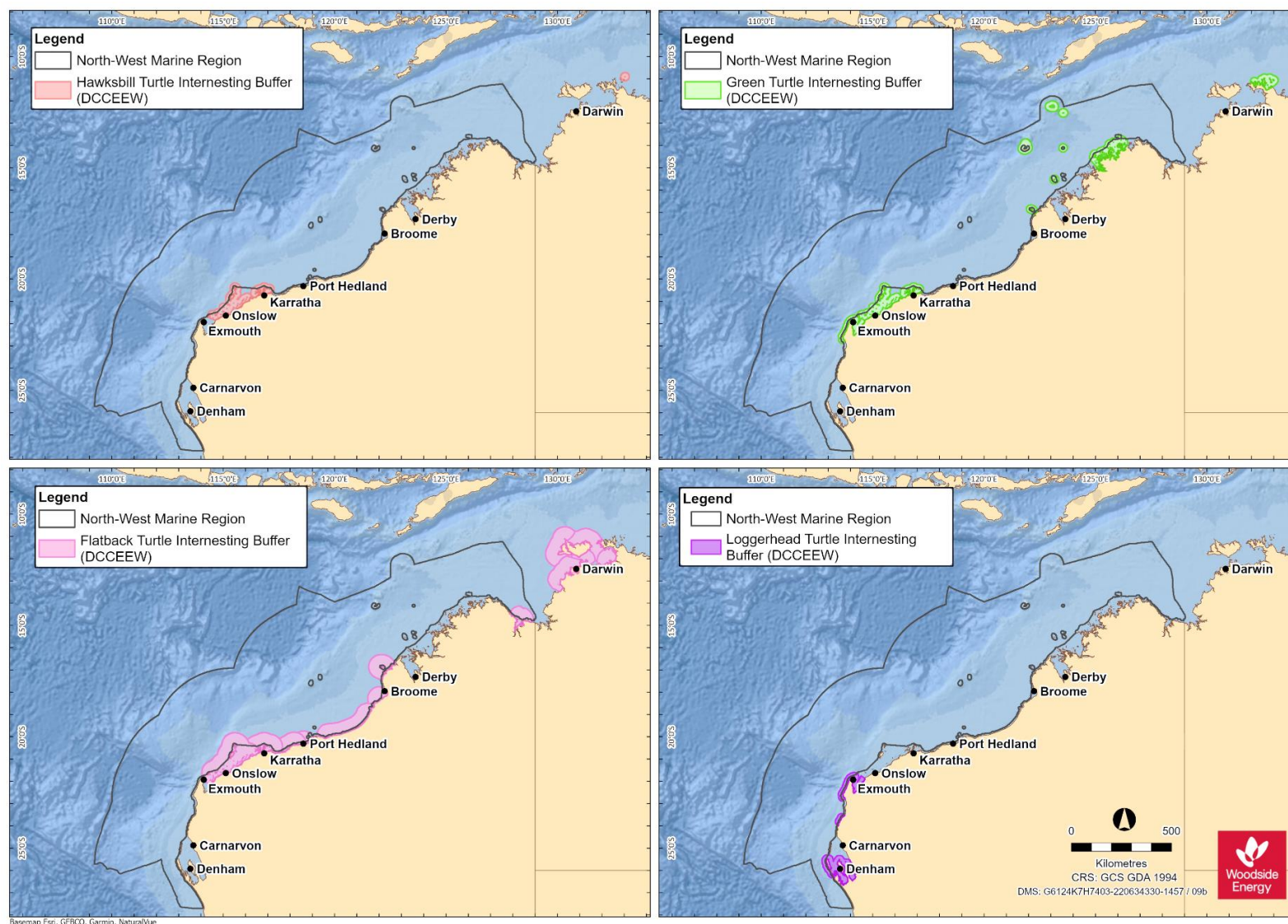
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Species	Woodside Activity Area			Habitat Critical to Survival			
	Browse	NWS/S	NWC	Nesting (*Major Rookery <sup>1</sup> )	Internesting Buffer	Seasonality Nesting	Preferred Habitat <sup>2</sup>
Unknown genetic stock Kimberley, Western Australia	✓	✓	-	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	
<b>Loggerhead Turtle</b>							
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.

<sup>1</sup> Major rookeries as outlined in the Recovery Plan (Commonwealth of Australia, 2017).

<sup>2</sup> 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 internesting buffers) for the NWMR (data source: DCCEW, 2024b)**

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### 6.3 Marine Turtle Biological Important Areas in the NWMR

A review of the Australian Marine Spatial Information System (GA, 2024), the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a) and the Recovery Plan for Marine Turtles in Australia (CoA, 2017) identified BIAs for the four marine turtle species that occur within the NWMR. These are described in Table 6-3.



Table 6-3: Marine turtle BIAs within the NWMR

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Mating	Nesting	Internesting	Foraging	Migration <sup>10</sup>
Green turtle	✓	✓	✓	Barrow Island Montebello Islands (including Hermite Island, North West Island, Trimouille Island) Dampier Archipelago (islands to the west of the Burrup Peninsula) Ashmore Reef	Barrow Island Montebello Islands (including Hermite Island, North West Island, Trimouille Island) Middle Island Dampier Archipelago (islands to the west of the Burrup Peninsula) North and South Muiron Islands North West Cape Delambre Island Legendre Island and Huay Island Lacepede Islands Scott Reef—Sandy Island Ashmore Reef Cartier Island Cassini Island	Locations of 20 km internesting buffer BIAs for green turtles are described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a).  Year round and seasonal 20 km internesting buffer BIAs are located around nesting sites. Habitat critical to survival internesting buffer (Table 6-2) is the legally recognised area of protection under the EPBC Act.	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	Migration corridor at Dampier Archipelago (islands to the west of the Burrup Peninsula).  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 et al., 1992).  Ferreira et al. (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,

<sup>10</sup> Migration BIA included in AMSIS (GA, 2024). General information for migratory behaviours also provided.

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Mating	Nesting	Internesting	Foraging	Migration <sup>10</sup>
							Foraging in waters adjacent to James Price Point	including the NT and Queensland.
Hawksbill turtle	✓	✓	✓	Montebello Islands Barrow Island Lowendal Island Group Dampier Archipelago (to the west of the Burrup Peninsula)	Lowendal Island Group Montebello Islands (including Ah Chong and South East islands) Rosemary Island Delambre Island Barrow Island Varanus Island and Thevenard Island Dampier Archipelago (to the west of the Burrup Peninsula) Ningaloo Coast and Jurabi Coast Sandy Islet at Scott Reef	Locations of 20 km internesting buffer BIAs for hawksbill turtles are described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a). Year round and seasonal 20 km internesting buffer BIAs are located around nesting sites. Habitat critical to survival internesting buffer (Table 6-2) is the legally recognised area of protection under the EPBC Act.	Recent data shows foraging ranges from the north of Exmouth Gulf to offshore Broome (Fossette et al., 2021a). 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 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	Migration corridor at Dampier Archipelago (islands to the west of the Burrup Peninsula). Individuals may migrate up to 2400 km between their nesting and foraging grounds (DSEWPAC, 2012a), although reproductive migration distances over 1000 km appear less common in hawksbill turtles than other species (Fossette et al., 2021a). Recent satellite tracking data shows turtles migrating from WA rookeries remained on the continental shelf, with the majority following the coastline and dispersing in a north-easterly direction, with some turtles from the Montebello Archipelago and Lowendals moving in a south-westerly direction and some stopping around Barrow Island. A migratory corridor was observed from

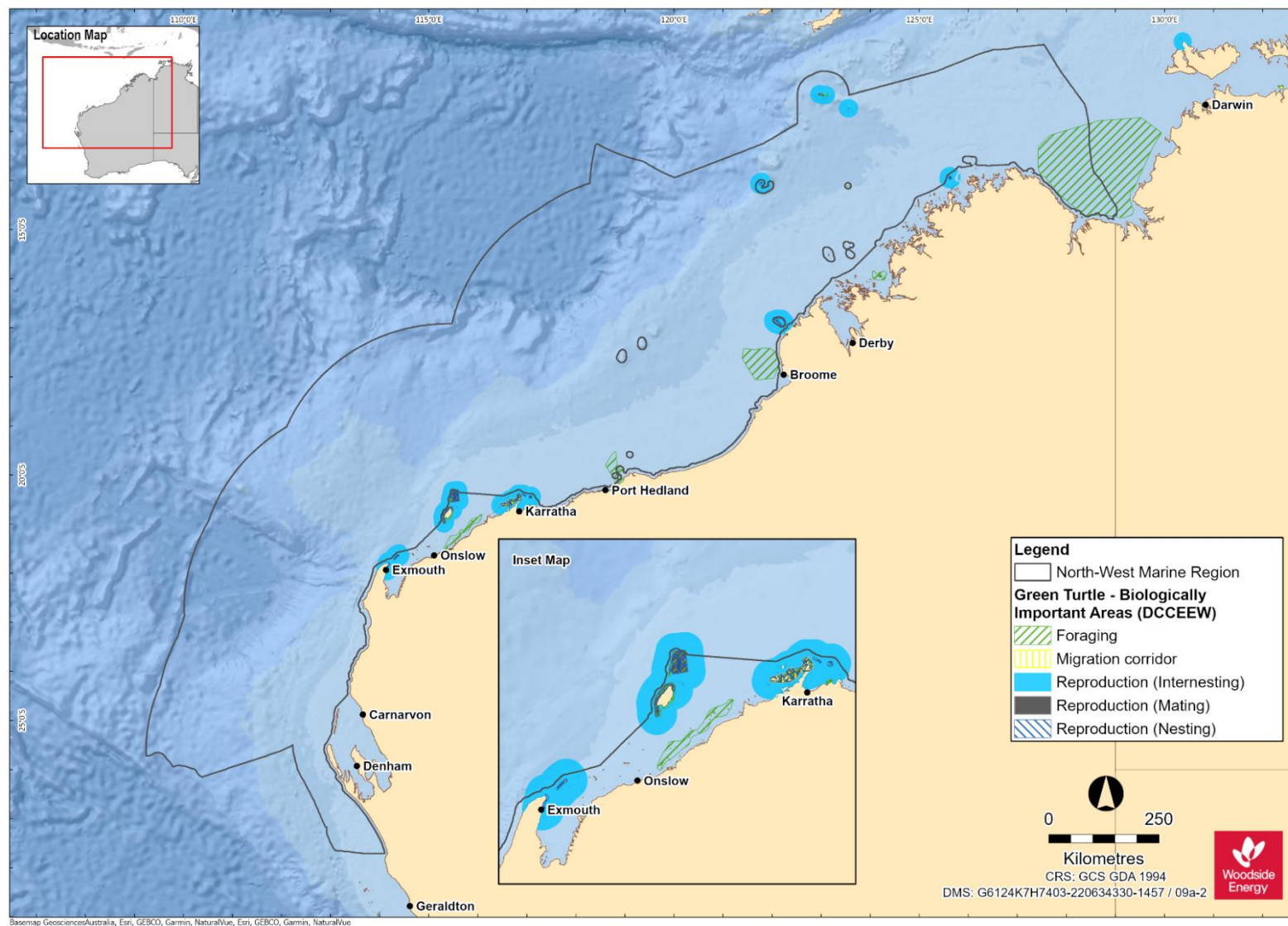
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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Mating	Nesting	Interesting	Foraging	Migration <sup>10</sup>
								Cape Preston to De Grey River (Fossette et al., 2021a).
Flatback turtle	✓	✓	-	Lacepede Islands Montebello Islands Dampier Archipelago (islands to the West of the Burrup Peninsula) Mating at Barrow Island	Thevenard Island—South Coast (summer) high use on beaches with high dune height Barrow Island Montebello Islands (including Hermite Island, North West Island, Trimouille Island) Dampier Archipelago (islands to the west of the Burrup Peninsula) Delambre Island Legendre Island and Huay Island Dixon Island Intercourse Island West of Cape Lambert Various locations along the Pilbara coast between Karratha and Broome, including Cape Thouin, Mundabullangana, Cowrie Beach, Port Hedland (Cemetery Beach, Paradise	Locations of 80 km interesting buffer BIAs for flatback turtles are described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a). Year-round and seasonal internesting buffer BIAs of 80 km are located around nesting sites, extending 20 km further than the habitat critical to survival. Habitat critical to survival internesting buffer (Table 6-2) is the legally recognised area of protection under the EPBC Act.	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	Migration corridor at Dampier Archipelago (islands to the west of the Burrup Peninsula). The flatback turtle is a resident to Australian waters and spends 99% of its time within the Australian EEZ. A migratory corridor connects the coastlines between the Kimberley and Pilbara (Peel et al., 2024). There is evidence that some flatback turtles undertake long-distance migrations between breeding and feeding grounds (Limpus et al., 1983). However, flatback turtles generally do not have a pelagic phase to their life cycle. Instead, hatchlings grow to maturity in shallow coastal waters thought to be close to their natal beaches (DSEWPAC, 2012a). A study predicting the dispersal of flatback

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Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Mating	Nesting	Interesting	Foraging	Migration <sup>10</sup>
					Beach) and 80 Mile Beach Lacepede Islands			turtle hatchlings found that core areas were predominantly on the continental shelf (<200 m depth contour) during all dispersal phases, indicating that flatback turtles remain in neritic areas (Wilson et al., 2023).
Loggerhead turtle	✓	✓	-	No mating BIA identified within the NWMR	Dirk Hartog Island Muiron Islands Ningaloo and Jurabi coasts  Montebello Islands Lowendal Island Rosemary Island Gnaraloo Station	Locations of 20 km interesting buffer BIAs for loggerhead turtles are described in the Marine Bioregional Plan for the North-west Marine Region (DSEWPAC, 2012a).  Year-round and seasonal 20 km interesting buffer BIAs are located around nesting sites. Habitat critical to survival interesting buffer (Table 6-2) is the legally recognised area of protection under the EPBC Act.	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	No migration BIA identified within the NWMR.  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, 2012a).

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Mating	Nesting	Interesting	Foraging	Migration <sup>10</sup>
Olive ridley turtle	✓	✓	-	No mating BIA identified within the NWMR	No nesting BIA identified within the NWMR	No interesting BIA identified within the NWMR.	No foraging BIA identified within the NWMR; however, may forage at: <ul style="list-style-type: none"> <li>• Western Joseph Bonaparte Depression and Gulf</li> <li>• Dampier Archipelago (islands to the West of the Burrup Peninsula)</li> </ul>	No migration BIA identified within the NWMR.  Migration routes and distances between nesting beaches and foraging areas are not known for Australian olive ridley turtles.



**Figure 6-3: Green turtle BIAs within the NWMR (data source: DCCEEW, 2024b)**

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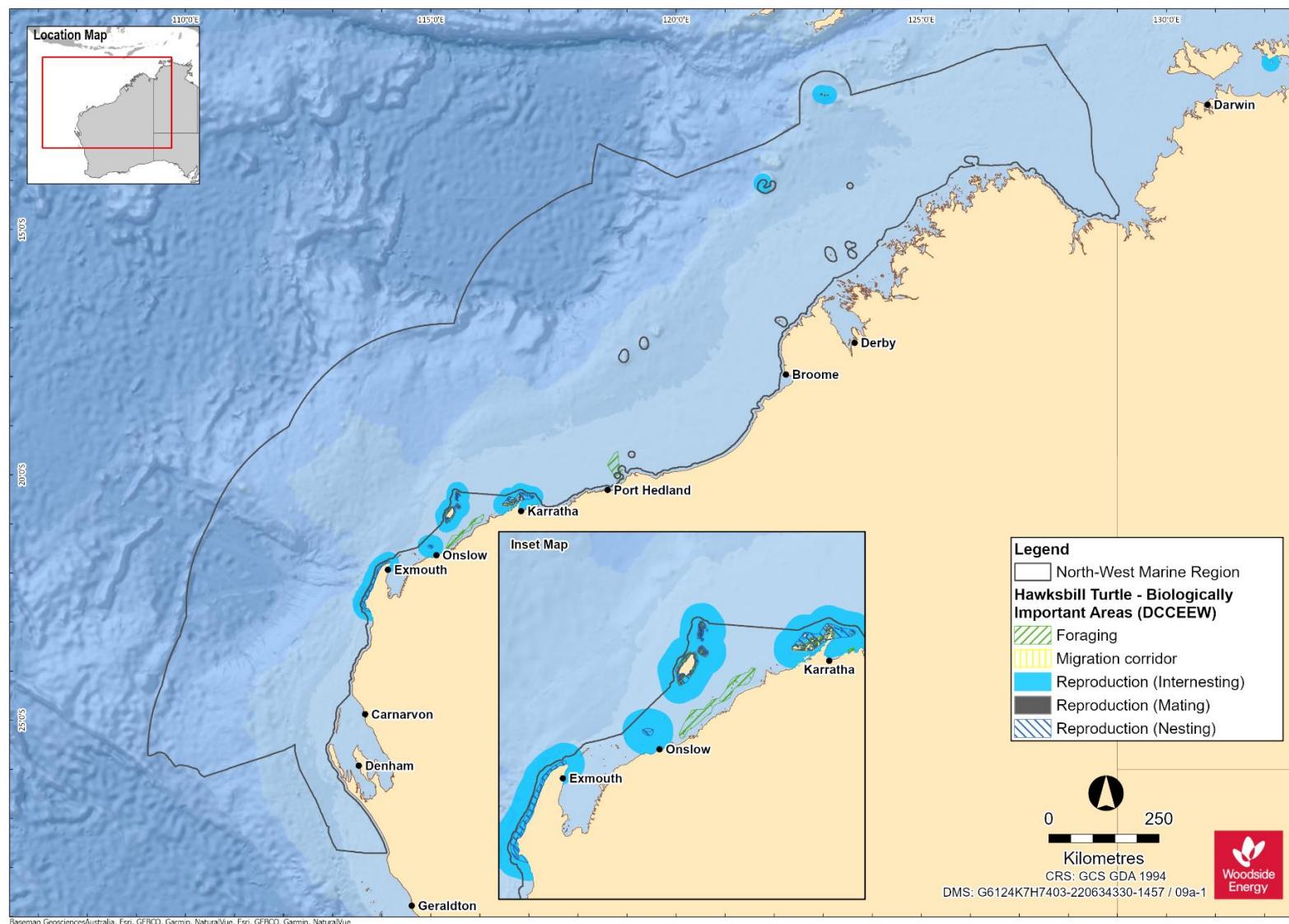
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**Figure 6-4: Hawksbill turtle BIAs within the NWMR (data source: DCCEW, 2024b)**

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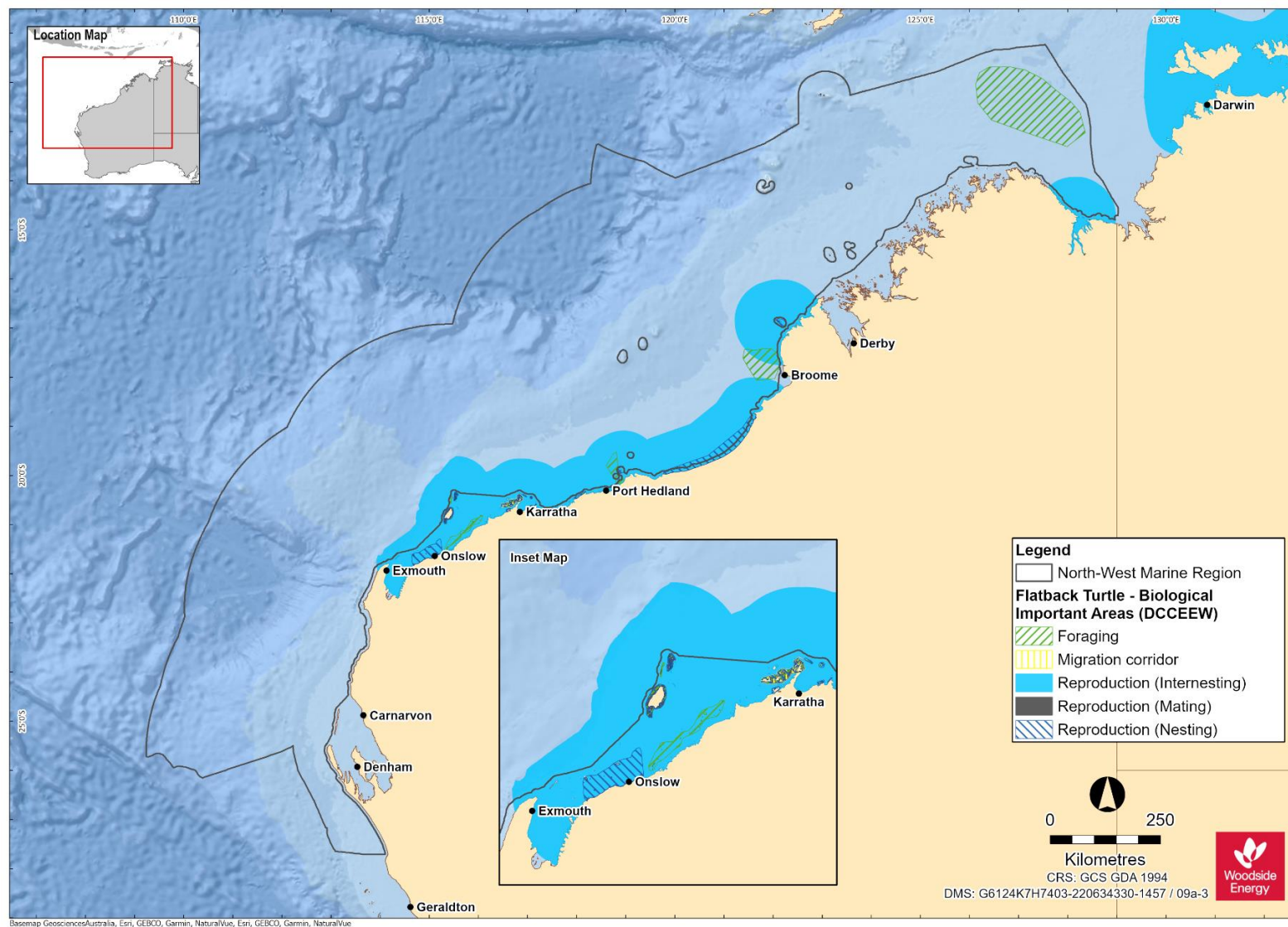
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**Figure 6-5: Flatback turtle BIAs within the NWMR (data source: DCCEEW, 2024b)**

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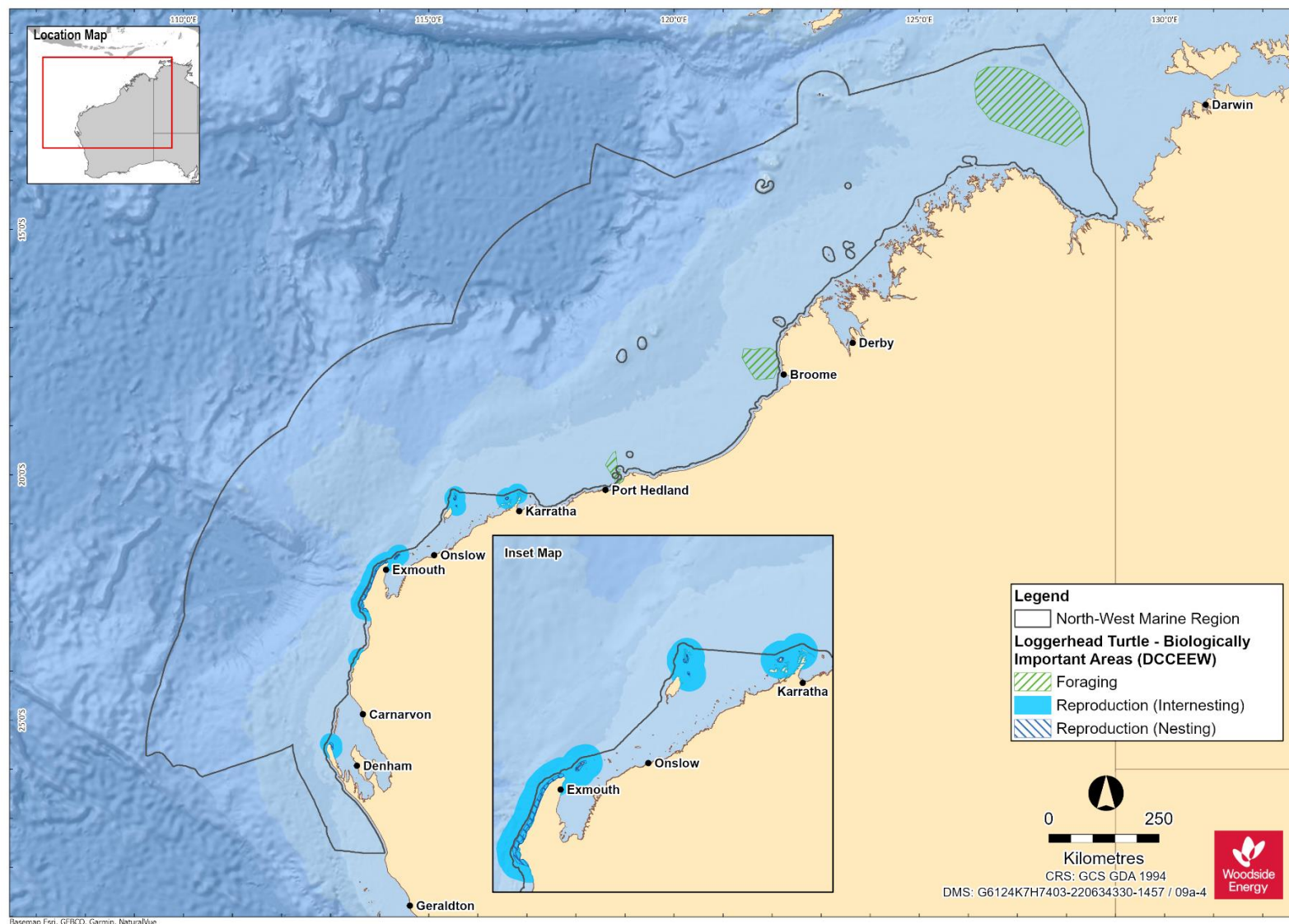
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**Figure 6-6: Loggerhead turtle BIAs within the NWMR (data source: DCCEW, 2024b)**

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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 the 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)
- 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
<b>Green Turtle</b>	
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 Australian Marine Park (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 et al., 2021).</p>
<b>Flatback Turtle</b>	
Cape Domett Stock (F-CD)	<p>Cape Domett is an important high density nesting area (Tucker et al., 2021). 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 et al., 2008).</p> <p>Designated habitat critical for the F-CD stock are the nesting locations of Cape Domett and Lacrosse Island, and an internesting buffer of 60 km radius around these rookeries, year-round with peak internesting activity occurring July to September.</p> <p>Extending further than the habitat critical internesting buffer, an internesting 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 discrete genetic stocks:

- the green turtle, NWS genetic stock
- the hawksbill turtle, WA genetic stock
- the flatback turtle, South-west Kimberley stock and Pilbara genetic stock.

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 turtles 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
<b>Green Turtle</b>	
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 NWS stock within the NWS / Scarborough activity area are located at Lacepede Islands, Montebello Islands, Barrow Island (Tucker et al., 2021), Bells Beach, Delambre Island, Mundabullangana, Port Hedland, and Thevenard Island. These areas are designated habitat critical for survival of the stock and include an internesting buffer of 20 km radius around these rookeries from November to March.</p>
<b>Hawksbill Turtle</b>	
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 to 1000 females nest on the island annually, more than at any other WA rookery (Pendoley, 2005; Pendoley et al., 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 internesting buffer of 20 km radius around these rookeries from October to February.</p>
<b>Flatback Turtle</b>	
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 internesting buffer of 60 km radius around these rookeries from October to March.</p>
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.</p> <p>This stock nests on many islands in the Pilbara and southern Kimberley, with major rookeries at Mundabullangana Beach, Delambre Island, Rosemary Island and Barrow Island. These areas are designated habitat critical for the F-Pil stock and include an internesting buffer of 60 km radius around these rookeries from October to March. A study using aerial photogrammetry showed nesting beaches were spread across the Pilbara from Y Island (Exmouth Gulf) in the southwest, to Bedout Island in the north and Mulla Mulla Downs Creek in the east (Fossette et al., 2021b).</p> <p>Other large flatback rookeries include Legendre Island and Thevenard Island. The Dampier Archipelago has been identified as a high-use area for flatback nesting (i.e. &gt;50% of the stock) (Fossette et al., 2021b).</p> <p>Extending further than the habitat critical internesting buffer, a year-round internesting 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 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>.</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). Flatbacks exhibit high fidelity to nesting beaches during periods of nesting attempts (Peel et al., 2024).</p>

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### 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 discrete genetic stocks:

- the green turtle, NWS genetic stock
- the loggerhead turtle, Western Australia genetic stock.

Locations of habitat critical for each of the two species are outlined in Table 6-2, Figure 6-2 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
<b>Green Turtle</b>	
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 from November to March.</p> <p>For the 2022–23 Ningaloo Turtle Program season, green turtles were the most active species in the NW Cape division, with 91.2% of total turtle activity (DBCA, 2023a). The number of green turtle nests has varied largely among years since commencement of the program in 2002 (range of 1.06 to 18.13 nests per subsection per day) with an average of 5.69. The average number of green turtle nests in the 2022–23 peak season were below average, with 4.07 nests per subsection per day (DBCA, 2023a). There have been two clear peaks (2011–12 and 2020–21) in activity since the beginning of the Ningaloo Turtle Program, where activity has been approximately 2.5 to 11 times greater than other seasons (DBCA, 2023a). Both seasons coincided with La Niña weather patterns (DBCA, 2021a).</p>
<b>Loggerhead Turtle</b>	
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 Gnarlaloo Bay. These areas are designated habitat critical for the stock and include an interesting buffer of 20 km radius around these rookeries from 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 et al., 2019).</p> <p>The standardised level of loggerhead turtle nesting along the North West Cape was above the long-term average (0.36) for the 2022–23 season and the third highest since the Ningaloo Turtle Program began (2002), with 0.46 nests per subsection per day (DBCA, 2021a).</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*)
- leaf-scaled sea snake (*Aipysurus foliosquama*).

The short-nosed sea snake, the leaf-scaled sea snake, and the dusky sea snake are listed as threatened species (Critically Endangered or Endangered) under the EPBC Act (Table 6-7).

The Kimberley coast has the world's highest diversity of sea snakes, supporting over one third of all known species (Somaweera and Saunders, 2015). 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 km<sup>2</sup> 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 6-5).

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 threatened sea snake species within the NWMR**

Species	Preferred Habitat and Diet	Habitat Location
<b>Short-nosed sea snake</b>	Preferred habitat: Primarily on reef flats or in shallow waters of outer reef edges to depths of 10 m (Minton et al., 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 and coral habitat fringing the Muiron Islands and the Montebello Islands (Udyawer et al., 2020).
<b>Leaf-scaled sea snake</b>	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 et al., 2020).
<b>Dusky sea snake</b>	Preferred habitat: The dusky sea snake is a reef specialist that is only known to occur on complex hard coral reefs and shoals—both emergent and subsurface. Has only been recorded at depths of 0–20 m; however, may occur in deeper areas with less survey effort (DCCEEW, 2024o). Diet: Stomach content analyses have identified benthic gobies, wrasses and occasionally fish eggs (DCCEEW, 2024o).	The dusky sea snake has been recorded sparsely and patchily from reefs and shoals at the outer margin and mid-shelf of the Australian continental shelf, specifically at the Scott Reef complex (Scott Reef, North Scott Reef and Sandy Islet) and nearby Seringapatam Reef, Heywood Shoal, and at Ashmore Reef, Cartier Island and Hibernia Reef. The dusky sea snake has not been detected at Ashmore Reef, Cartier Island or Hibernia Reef since the early 2000s. The species may occur undetected at mid-shelf shoals which comprise the shallowest of sea mounts and banks that occur along a north-easterly crescent from south of Heywood Shoal, past Cartier Island, to Ashmore Reef (DCCEEW, 2024o).

## 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.

## 6.7 Water Monitor

Mitchell's water monitor (*Varanus mitchelli*) is listed as critically endangered under the EPBC Act. The species is known to occur in wetlands and coastal floodplains in the northern extent of the NWMR, with distribution from Yampi Sound Training Area, across the Kimberley and into the Top End of the Northern Territory and far northwest Queensland (DCCEEW, 2023c). The species inhabits freshwater and saline wetlands that range from seasonal gorges in upper catchments to large rivers and coastal floodplains. It has been recorded in rivers, creeks, riffle zones, gorges, springs, lagoons, swamps, mangroves, and foreshores (DCCEEW, 2023c).

Habitat critical to the survival of the species has not been mapped; however, includes all areas where the species persists following the establishment of cane toads and areas within known distribution where habitat occurs or can be restored (terrestrial) (DCCEEW, 2023c). No BIAs for Mitchell's water monitor 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, calving, 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 support globally significant dugong populations (DSEWPAC, 2012a, 2012c).

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 is known to utilise the region 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 (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 that may occur within the NWMR**

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>11</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>12</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
Cetaceans—Mysticeti							
<i>Balaenoptera musculus</i>	Blue whale	Endangered	Migratory	Cetacean	Endangered	Endangered	Conservation Management Plan for the Blue Whale—A Recovery Plan under the EPBC Act 1999 2015–2025 (Commonwealth of Australia, 2015a)
<i>Eubalaena australis</i>	Southern right whale	Endangered	Migratory	Cetacean	Vulnerable	Least Concern	National Recovery Plan for the Southern Right Whale <i>Eubalaena australis</i> (DCCEEW, 2024a)
<i>Balaenoptera borealis</i>	Sei whale	Vulnerable	Migratory	Cetacean	Endangered	Endangered	Conservation Advice <i>Balaenoptera borealis</i> sei whale (Threatened Species Scientific Committee, 2015a)
<i>Megaptera novaeangliae</i>	Humpback whale	N/A	Migratory	Cetacean	Conservation dependent	Least Concern	Listing Advice <i>Megaptera novaeangliae</i> Humpback Whale (DAWE, 2022)
<i>Balaenoptera physalus</i>	Fin whale	Vulnerable	Migratory	Cetacean	Endangered	Vulnerable	Conservation Advice <i>Balaenoptera physalus</i> fin whale (Threatened Species Scientific Committee, 2015c)

<sup>11</sup> Threatened and Priority Fauna List – April 2024 - <https://www.dbca.wa.gov.au/management/threatened-species-and-communities> (accessed on 13/08/2024)<sup>12</sup> IUCN, 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org> (accessed on 13/08/2024)

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>11</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>12</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Balaenoptera edeni</i>	Bryde's whale	N/A	Migratory	Cetacean	Migratory	Least Concern	N/A
<i>Balaenoptera bonaerensis</i>	Antarctic minke whale	N/A	Migratory	Cetacean	Migratory	Near Threatened	N/A
<i>Balaenoptera omurai</i>	Omura's whale	N/A	Migratory	Cetacean	N/A	Data Deficient	N/A
<b>Cetaceans—Odontoceti</b>							
<i>Physeter macrocephalus</i>	Sperm whale	N/A	Migratory	Cetacean	Vulnerable	Vulnerable	N/A
<i>Orcinus orca</i>	Killer whale	N/A	Migratory	Cetacean	Migratory	Data Deficient	N/A
<i>Orcaella heinsohni</i>	Australian snubfin dolphin	N/A	Migratory	Cetacean	Priority	Vulnerable	N/A
<i>Sousa chinensis</i>	Indo-Pacific humpback dolphin (Australian humpback dolphin)	N/A	Migratory	Cetacean	Priority	Vulnerable	N/A
<i>Tursiops aduncus</i>	Spotted bottlenose dolphin (Arafura/ Timor Sea populations)	N/A	Migratory	Cetacean	N/A	N/A	N/A

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>11</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>12</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
Sirenians and Pinnipeds							
Dugong dugon	Dugong	N/A	Migratory	Marine	Migratory	Vulnerable	N/A
Neophoca cinerea	Australian sea lion	Endangered	N/A	Marine	Endangered	Endangered	Recovery Plan for the Australian Sea Lion (Neophoca cinerea) 2013 (DSEWPAC, 2013a) Conservation Advice Neophoca cinerea 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 and breeding areas, characterised by high productivity, and migration routes associated with reproductive patterns. The NWMR is 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. Cleguer and Marsh (2023) present the most contemporary data on dugongs and population estimates via an inventory of dugong aerial surveys of Australia, including northwest Australia (Shark Bay, Ningaloo, Exmouth Gulf and Pilbara, the Kimberley region).

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.

## 7.5 Marine Mammals in the NWMR

Marine mammal descriptions within the NWMR including baleen whales, toothed whales, dolphins and dugongs are presented in Table 7-2.

**Table 7-2: Information on the threatened/migratory marine mammal species within the NWMR**

Species	Key Information
<b>Baleen Whales (Mysticeti)—Low Frequency Hearing</b>	
<b>Humpback whale</b>	<p>In Australian waters, there are two genetically distinct populations of humpback whales that migrate annually along the west (Group IV / Group D) and east (Group V) coasts between May and November (Jenner et al., 2001). The population of humpback whales (<i>Megaptera novaeangliae</i>) known as Group IV/D migrate annually from Antarctic feeding grounds passing along the coast of Western Australia to warm tropical waters including the Kimberley, North West Cape, and Exmouth Gulf for breeding and calving (Russell et al., 2024). The biannual migration of humpback whales through the NWMR occurs in winter (June to August) for northbound migrating whales and southbound in early spring (September to November). Population data for the West Australian sub-population is considerably variable (DAWE, 2022). The population has been increasing in size at a rate of approximately 10% per annum since the cessation of whaling in Western Australian waters by 1963 (Thums et al., 2018) and population numbers have increased from approximately 2000 to 3000 individuals in 1991 to between 19,200–33,850 individuals in 2008 (Bannister and Hedley, 2001; Bejder et al., 2019; Hedley et al., 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 (Salgado Kent et al., 2012) and the predicted increasing trend in abundance predicted by modelling (Thums et al., 2018). The International Whaling Commission (IWC) estimated that in 2012 the Western Australian subpopulation had recovered to 90% (74–98% 90% PI) of its pre-whaling levels and projected that by 2020 it would have reached 98% (88–100% PI) (IWC 2015 cited in DAWE, 2022). Due to the unprecedented population recovery the humpback whale was removed from the EPBC Act threatened species list as it was deemed no longer eligible for inclusion (DAWE, 2022) after a previous listing as Vulnerable for many decades.</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, after time for breeding and calving (typically within August and 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) and as far south as Gourdon Bay in the Kimberley (Thums et al., 2018). There are reports of neonates present further south, suggesting that the calving areas may be poorly defined, expanding or returning to pre-whaling patterns as the population recovers. Aerial photogrammetric surveys in 2013 and 2015 recorded large numbers of humpback whale calves along the North West Cape, with estimated minimum relative calf abundance of 463–603 in 2013 and 557–725 in 2015 (Irvine et al., 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 the 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 et al., 2017) and further south, as reported for Geographe Bay and Flinders Bay (in July and August) in south-west, Western Australia (Jolliffe et al., 2024).</p> <p>The seasonal presence of humpback whales is presented in Table 9-1.</p> <p>Migration, breeding and calving BIAs for the humpback whale within the NWMR are presented in Table 7-3 and Figure 7-2.</p>
<b>Blue whale</b>	<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 brevicauda</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, it is reasonably assumed all blue whales sighted in the NWMR are likely to be pygmy blue whales.</p>

Species	Key Information
	<p>The migratory population, known as the East Indian Ocean (EIO) pygmy blue whale population, migrate biannually through the NWMR. This 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; McCauley et al., 2018). 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 et al. (2018) describe three migratory stages around Australia for the EIO pygmy blue whale population, based on collated passive acoustic data: 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 (with movement as far south as the Southern Subtropical Convergence Zone); and a 'northbound migratory stage' (April to August) where animals travel north back to Indonesia again.</p> <p>Extensive passive acoustic monitoring throughout the NWMR indicates migratory timing and distribution of pygmy blue whales (noting this survey method detects vocalising whales):</p> <ul style="list-style-type: none"> <li>Acoustic monitoring conducted by McCauley and Jenner (2010) in the Exmouth and northern Montebello Islands region identified a peak period in the northern migration of pygmy blue whales from April to August, and from November through to late December during the southern migration.</li> <li>Northbound migration between mid-April and early August and southbound migration between October to December and possibly into January for the Scott Reef area 2006–2009 (McCauley, 2011) (noting the absence of any southbound detection in 2007).</li> <li>Noise loggers deployed for a full year period in 2019 detected pygmy blue whales on their northern and southern migration. The noise loggers were located at various locations ~40–50 km west of the project area, and in ~1300 m water depth. The majority of pygmy blue whales detected on their northern migration occurred from mid-April to the end July, then again on their southern migration in November through to early December (Chevron Australia, 2019).</li> <li>Gavrilov et al. (2018) analysed acoustic data from an array of ocean bottom seismographs (recorded in December 2014) to detect pygmy blue whales and showed the southbound migration was over an extended offshore corridor traversing an area up to 400 km to the northwest of the North West Cape.</li> <li>A targeted passive acoustic monitoring program to detect southbound migratory pygmy blue whales ran from late October 2021 to March 2022 with a deepwater ALTO lander (900 m depth) to the west of the Montebello Trough and C-lander (190 m depth) at the outer edge of the NWS (Warren et al., 2023). Despite vessel noise dominating low frequencies throughout the recording periods at both recording locations, pygmy blue whale song vocalisations and D-calls were detected from the start of the recording period through November and early December 2021.</li> <li>An offshore trial of Distributed Acoustic Sensing (DAS) using fibre optic cables (submarine telecommunications cable) to detect low-frequency whales recorded vocalising pygmy blue whales within 12 km detection range within a 50 km long area on the outer edge of NWS (Debens et al., 2024). Pygmy blue whale detections were made from mid-November (commencement of the trial) through to mid-December 2023 and a couple of detections in early January 2024.</li> </ul> <p>The first satellite tracks of pygmy blue whales for this population documented northbound migration between Western Australia and Indonesia (Double et al., 2014) and identified areas where whales had highest occupancy, such as Perth Canyon, Naturalist Plateau, North West Cape region and the Banda Sea. Pygmy blue whales tagged in the Bonney Upwelling region of South Australia in 2015 showed that most of the tagged whales remained in South Australian waters during the tracking period but one documented the migration to Indonesia via Western Australian waters and a return journey (albeit via intermittent data) of the southbound migration to the southern coast of Western Australia (Möller et al., 2020).</p> <p>Thums et al. (2022) used passive acoustic monitoring and satellite telemetry data (a combination of existing data and tag tracking data collected for Western Australia 2019–2022) to assess the spatial extent of the distribution, migration and foraging areas for pygmy blue whales in the South-east</p>

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Species	Key Information
	<p>Indian Ocean associated with the northbound migration. The tag tracking results highlighted extensive use of slope habitat off Western Australia and minimal use of shelf habitat by pygmy blue whales. Additionally, pygmy blue whales off Western Australia were mostly engaged in migration, with short periods of foraging. Whale density was highest in the southern part of the North-west Australian coast and whales were there between April–June, and November–December. This study also compared foraging and migration areas to described areas of importance (BIAs), some aligned such as migratory BIA for northbound pygmy blue whales whilst some had less than 10% overlap (Thums et al., 2022). The timing, distribution and behaviour of southbound pygmy blue whales is less well documented with reference to satellite tagging. Limited tagged whale data from Double et al. (2014), Möller et al. (2020) and Thums et al. (2022) indicated connectivity of migrating pygmy blue whales from South Australia through Western Australia to and back from Indonesia. Mustika et al. (2024), satellite tag tracking data for two southbound pygmy blue whales (tagged in Indonesia) suggest varying migratory pathways from the Savu Sea to subantarctic waters as well as extended time in the Southern Subtropical Convergence Zone. One tagged whale traversed a migratory path through offshore waters of Western Australia towards Heard and McDonalds islands covering a distance of almost 6000 km and travelling at 100 km per day. In contrast a second tagged whale took a migratory journey similar to the documented northbound route to the North West Cape before heading out into offshore waters and spending time in the Subantarctic Front before looping back up through the Perth Canyon, North West Cape and towards Savu Sea (Mustika et al., 2024).</p> <p>There is 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 et al. (2008) (based on photographic mark and recapture) calculated between 712 and 1754 individuals, but both estimates did not account for animals travelling further west into the Indian Ocean (McCauley et al., 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 off south-eastern Australia and may not reflect the full population but does imply an increasing population (McCauley et al., 2018).</p> <p>Thums et al., (2022) identified the most important foraging (and/ or resting/ breeding) areas from south to north as: (1) the Perth Canyon and vicinity; (2) the shelf edge off Geraldton; (3) the shelf edge from Ningaloo Reef to the Rowley Shoals (not continuous) and including a couple of small areas near the shelf edge off approx. 25°S; and (4) the Banda Sea. The Foraging BIA off the south-west of Western Australia encompassed 83% of the most important areas in that region (Thums et al., 2022).</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 et al., 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>The seasonal presence of pygmy blue whales is presented in Table 9-1.</p> <p>Refer Table 7-3 and Figure 7-4 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>



Species	Key Information
<b>Bryde's whale</b>	<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 et al., 1996). The species is known to exhibit inshore and offshore forms varying in morphology and migratory behaviours in other international locations (Bannister et al., 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 et al., 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 (2011b) 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, 2011a).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
<b>Southern right whale</b>	<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 et al., 1996). Two populations of southern right whale occur in Australian waters: the western and eastern (DCCEEW, 2024a). Southern right whales in Australian waters predominantly occur in aggregations in coastal water reproductive areas where they calve and nurse their young from May to October, primarily occupying shallow waters (&lt; 10m depth) within 1 km of the coastline (Charlton et al., 2019; Smith et al., 2022, cited in DCCEEW, 2024a). Peak period of abundance is late July to August, with seasonal variability. Females accompanied by a calf generally occupy the calving ground for two to three months between June and September (DCCEEW, 2024a). For the western population, breeding occurs in Exmouth Gulf and in calving areas along the south coast of WA outside of the NWMR (DCCEEW, 2023). A stranding record exists for the far north Kimberley coast (ALA, 2006). Known females have rarely been observed on the Australian coastline in the year prior to calving, suggesting mating and conception may predominantly occur away from calving grounds, potentially on feeding grounds (Watson et al., 2021 cited in DCCEEW, 2024a). There is a significant energetic cost to the mother in the late stages of gestation (i.e. last trimester) and calf growth rate has been found to be dependent on the maternal body size and condition of the mother (Christiansen et al., 2018; Christiansen et al., 2022; both cited in DCCEEW, 2024a). Foraging ecology of southern right whales is poorly understood and observations of foraging whales are rare (DCCEEW, 2024a). There is evidence of a population increase of the western population, whereas there is greater uncertainty of the population status and trends of the eastern population (DCCEEW, 2024a). Southern right whale abundance in Australian waters is still far below estimated historic abundance (&gt;20%) (DCCEEW, 2024a).</p> <p>There is a reproduction BIA and habitat critical to survival (HCTS) for the southern right whale located within Exmouth Gulf (DCCEEW, 2024a). A migration BIA extends 3 NM out from the coastline from Ningaloo and spans down the Western Australian coastline and across the south and south-east coast of Australia (DCCEEW, 2024a). Nursing and calving behaviours are known to occur within reproductive BIAs. HCTS for the southern right whale has been identified as all reproductive BIAs across the species range (DCCEEW, 2024a). Refer Figure 7-1 and Section 7.6 for HCTS for southern right whale in the NWMR. Refer to Table 7-3 and Figure 7-5 for BIAs for southern right whales in the NWMR.</p>

Species	Key Information
<b>Antarctic minke whale</b>	<p>The Antarctic minke whale have a circumpolar distribution south of 60°S during summer (Risch et al., 2019) and has been recorded off all Australian States (apart from the NT) in winter (refer to DCCWE SPRAT profile). Their seasonal distribution and migration patterns are poorly understood (Risch et al., 2019). The species is highly associated with sea ice and feeds in cold Antarctic waters over the summer. It is thought that the Antarctic minke whale migrates through offshore waters of Western Australia to about 20°S to feed and possibly breed (Bannister et al., 1996). Information about timing and distribution, behaviour (migration and breeding) within the NWMR, however, is presently not 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. Acoustic detection has been recorded for the Perth Canyon and Exmouth Plateau (McCauley, 2011) and more recently acoustic detection indicated presence in offshore waters of NWS in late October and all of November and was absent (based on no vocalisation and detection) in December 2021 to March 2022 (over a monitoring period from October 2021 to March 2022) (Warren et al., 2023).</p> <p>There are no identified BIAs for this species in the NWMR.</p>
<b>Sei whale</b>	<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 et al., 1996; Prieto et al., 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 et al., 2012), and exhibits a migration pathway influenced by seasonal feeding and breeding patterns. Sei whales have been infrequently recorded in Australian waters (Bannister et al., 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 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 NWMR.</p>
<b>Fin whale</b>	<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 et al., 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 et al., 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 is from stranding events.</p> <p>Fin whales have been recorded vocalising off the Perth Canyon, WA, between January and April 2000 (McCauley et al., 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 (Aulich et al., 2022). A recent study by Aulich et al. (2022) 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 from Antarctica 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 feeding zone for migratory whales (Aulich et al., 2022). Some whales were found to continue migrating northwards along the WA coastline with vocalisation presence recorded as far north as Dampier between August and late October (Aulich et al., 2022).</p> <p>There are no identified BIAs for this species in the NWMR.</p>

Species	Key Information
<b>Omura's whale</b>	<p>Omura's whale is a species of baleen whale that was first described in 2003. Previously specimens of Omura's whale were identified as pygmy/dwarf Bryde's whales; however, morphological and molecular evidence identified Omura's whale as a distinct species not closely related to Bryde's whale in 2003 (Ottewell et al., 2016).</p> <p>It was believed that the range of Omura's whale was restricted to the eastern Indo-Pacific; however, recent discoveries suggest the species may have a more widespread distribution (Ottewell et al., 2016; Cerchio et al., 2019). In Australia, presence of this species was confirmed in 2015 when, what was later determined to be an Omura's whale, was stranded on the northwest coast of Australia, near Exmouth (Ottewell et al., 2016). An in-depth review conducted by Cerchio et al. (2019) concluded that Omura's whale can primarily be found in tropical and warm-temperate waters and is currently known from all ocean basins excluding the central and eastern Pacific. Further, a strong tendency toward a coastal and neritic water distribution was found, although there were several pelagic water records, the majority of which were on the continental shelf and within shallow seas throughout the documented range (Cerchio et al., 2019).</p> <p>Omura's whales were detected by passive acoustic monitoring:</p> <p>Warren et al. (2023) targeted passive acoustic monitoring program to detect southbound migratory pygmy blue whales ran from late October 2021 to March 2022 with a deepwater ALTO lander (900 m depth) to the west of the Montebello Trough and C-lander (190 m depth) at the outer edge of the NWS. Calls of the Omura's whales were detected at both recording locations throughout the recording period. Detections were, however, more common at the deeper water location, in terms of both number of detection days and number of detection hours per day (Warren et al., 2023). The shelf edge location showed Omura's present primary in December; however, this lander malfunctioned and stopped recording in mid-January 2022.</p> <p>An offshore trial of distributed acoustic sensing (DAS) using fibre optic cables (submarine telecommunications cable) to detect low-frequency whales recorded vocalising Omura's whales within 12 km detection range along a 50 km long area on the outer edge of NWS (Debens et al., 2024). Omura's whale detections were made from at the beginning of December 2023 through to mid-January 2024 (and the end of the trial).</p> <p>Currently little is known about the ecology and life history characteristics of Omura's whale resulting in an IUCN listing of Data Deficient. There are no identified BIAs for this species in the NWMR.</p>

Species	Key Information
<b>Toothed Whales (Odontoceti)—High Frequency Hearing</b>	
<b>Sperm whale</b>	<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 et al., 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 et al., 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 et al., 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 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>Recent studies such as acoustic detection indicated sperm whale presence in deep, offshore waters but not at the edge of the NWS (over a monitoring period of October 2021 to March 2022, for the deepwater location). However, while sperm whales were detected every month, occurring in bouts, there was no evidence for lasting use of the area around this recording location (Warren et al., 2023). Ferriera et al. (2024) reported sperm whale sightings off the North West Cape in May 2023. A total of 26 individual sperm whales were sighted about 30 km offshore in groups up to ten individuals. The sperm whales were observed displaying surface logging behaviour with frequent and numerous blows prior to flukes up dives (indicative of deep feeding behaviour). Such aggregations appear to be an annual occurrence and at the same time as migratory pygmy blue whale feed and move through the same area, to the west and offshore of Ningaloo and North West Cape.</p> <p>There are no identified BIAs for this species in the NWMR.</p>
<b>Orca (killer whale)</b>	<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 et al., 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 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 et al., 1996). Killer whales are known to target humpback whales, particularly calves, off Ningaloo Reef during the humpback southern migration season (Pitman et al., 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.</p> <p>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).</p> <p>There are no identified BIAs for this species in the NWMR.</p>

Species	Key Information
<b>Australian snubfin dolphin</b>	<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 et al., 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 et al., 2006; Parra et al., 2002). Within the NWMR, this 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 et al., 2012). Roebuck Bay supports one of the largest known populations of Australian snubfin dolphins (D'Cruz et al., 2022). A first comprehensive catalogue of snubfin dolphin sightings has been compiled for the Kimberley, north-west Western Australia (Bouchet et al., 2021) and documented that snubfin dolphins are consistently encountered in shallow water (&lt;21 m depth) close to (&lt;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.</p> <p>Refer Table 7-3 and Figure 7-6 for the location and type of BIAs for Australian snubfin dolphins in the NWMR.</p>
<b>Indo-Pacific humpback dolphin (Australian humpback dolphin)</b>	<p>Previously included with <i>Sousa chinensis</i>, the Australian humpback dolphin (<i>S. sahuensis</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. sahuensis</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 the 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 et al., 2016). Allen et al. (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 et al., 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 et al., 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 et al., 2017). Humpback dolphins do not appear to undergo large-scale seasonal migrations, although seasonal shifts in abundance have been observed (Parra and Cagnazzi, 2016 cited in DCCEEW, 2023a).</p> <p>Aerial transect surveys conducted in the Kimberley region show the abundance for humpback dolphins was estimated to be 1546 in 2016 and 2690 in 2017 (Raudino et al., 2023). Dolphin densities were greatest in inshore waters, with greatest densities in Exmouth Gulf, Dampier Archipelago, and Great Sandy Islets (Raudino et al., 2023). 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. &lt;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 et al., 2018). Over the past 10 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 et al., 2016).</p> <p>Refer Table 7-3 and Figure 7-7 for the location and type of BIAs for Indo-Pacific humpback dolphins in the NWMR.</p> <p>It is also noted that findings reported by Brown et al. (2014) indicated there was evidence of hybridisation of the Australian snubfin and humpback dolphin populations in north-western Australia.</p>

Species	Key Information
<b>Indo-Pacific bottlenose dolphin (spotted bottlenose dolphin)</b>	<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 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. Aerial transect surveys conducted in the Kimberley region showed the abundance for the bottlenose dolphins has been declining with estimated abundance of 3713 in 2015, 2638 in 2016 and 1635 in 2017. Dolphin densities were greatest in inshore waters, with greatest densities in Exmouth Gulf, Dampier Archipelago, and Great Sandy Islets (Raudino et al., 2023). A study at North West Cape found that during winter months, presence in coastal lagoons west of the North West Cape was more likely than other seasons. In spring, probability of spotted bottlenose dolphin occurrence was higher outside of the Ningaloo Marine Park (noting summer data was not included in this study) (Haughey et al., 2021).</p> <p>Refer Table 7-3 and Figure 7-8 for the location and type of BIAs for spotted bottlenose dolphins in the NWMR.</p>
<b>Sirenians</b>	
<b>Dugong</b>	<p>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 et al., 2002]); and Eighty Mile Beach and the Kimberley coast, including Roebuck Bay (Bayliss and Hutton, 2017). 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 et al., 1997; Preen, 2004). Dugongs are known to migrate between seagrass habitats (hundreds of kilometres) (Sheppard et al., 2006), and in Shark Bay they exhibit seasonal movements as a behavioural thermoregulatory response to winter water temperatures (Holley et al., 2006; Marsh et al., 2011). Abundance aerial surveys have been conducted in Australian dugong habitat areas since the early 1980s. These surveys indicate that dugong populations are now stable at a regional scale in Shark Bay and in the Exmouth and Ningaloo Reef area. The entire Kimberley region has only been surveyed in 2015 and 2017, so only baseline information on dugong distribution and abundance is available for the Ningaloo and Shark Bay areas (Cleguer and Marsh, 2023).</p> <p>Refer Table 7-3 and Figure 7-9 for the location and type of BIAs for dugong in the NWMR.</p>



Species	Key Information
<b><i>Pinnipeds</i></b>	
<b>Australian sea lion</b>	<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 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 7-10 shows the foraging BIAs for the Australian sea lion to the south of the NWMR in the northern extent of the SWMR.</p>

## 7.6 Habitat Critical to the Survival for Marine Mammals in the NWMR

The southern right whale is the only marine mammal which has habitat critical to the survival (HCTS) of a species defined.

The National Recovery Plan for the Southern Right Whale (DCCEEW, 2024a) identifies HCTS under the EPBC Act. The *EPBC Act Significant Impact Guidelines 1.1—Matters of National Environmental Significance 2013* state that “An action is likely to have a significant impact on a threatened species if there is a real chance or possibility that it will: adversely affect habitat critical to the survival of a species.” The definition of HCTS for a species are areas necessary:

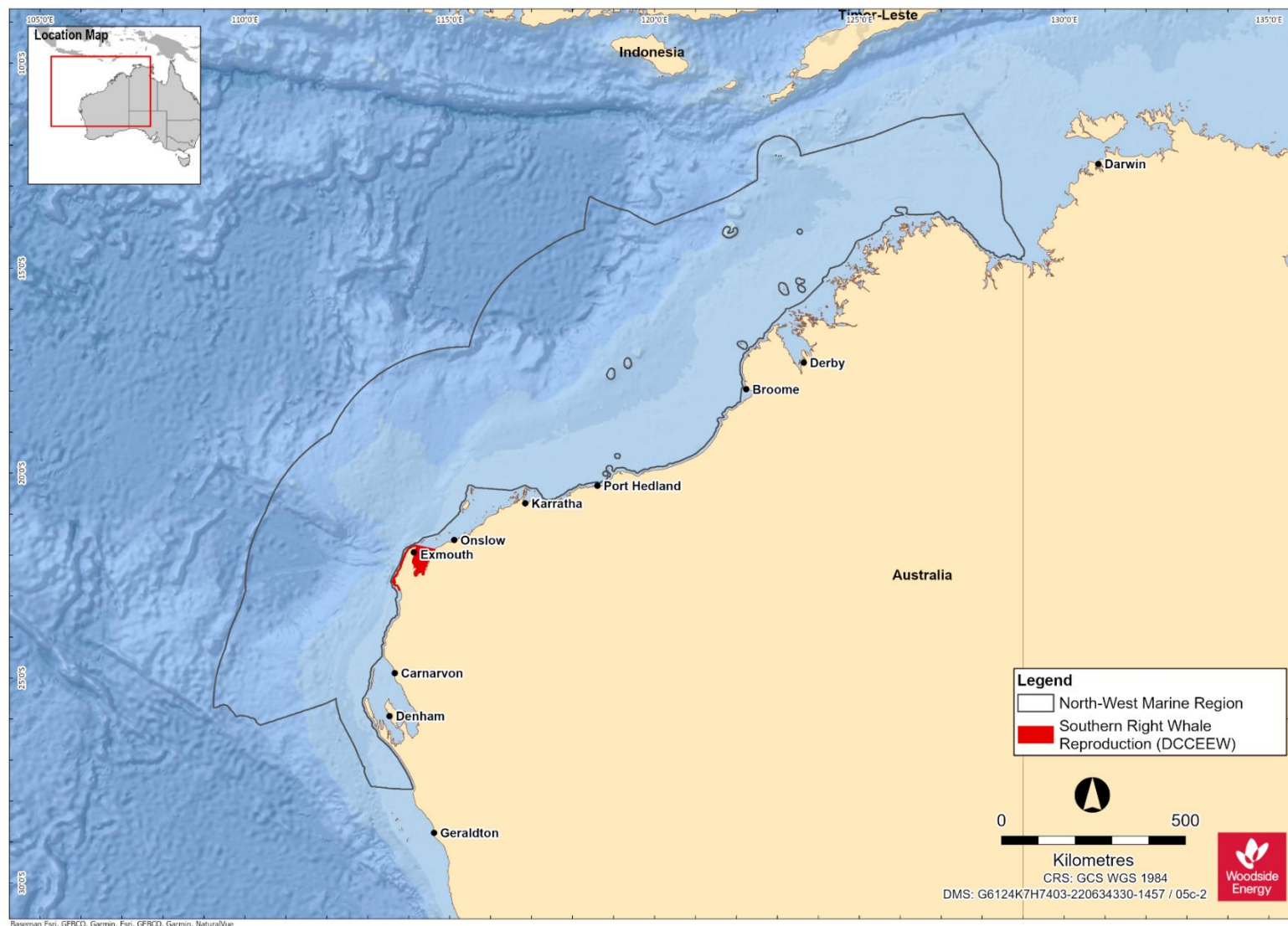
- for activities such as foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species or ecological community (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators)
- to maintain genetic diversity and long-term evolutionary development, or
- for the reintroduction of populations or recovery of the species or ecological community.

HCTS for the southern right whale has been identified as all reproductive BIAs across the species range (Figure 7-1). The identification of HCTS reflects that southern right whales display strong site fidelity to calving areas in Australian coastal waters, within and between years, over decadal time spans (Bannister, 2001; Charlton et al., 2021; Watson et al., 2021 cited in DCCEEW, 2024a). Reproductive areas have been identified as HCTS for the species, because:

- they meet the species' essential life cycle requirements for reproduction (e.g. mating, calving, nursing) and reproduction is known to occur at that location
- there is a level of occupancy by individual breeding females at these locations of multiple days in any given year, and across multiple years, for long-term maintenance of the species
- they are critical for recovery of the southern right whale in terms of expanding habitat occupancy and contributing to the maintenance of genetic diversity as site fidelity may lead to small-scale genetic differences.

No ‘Critical Habitat’ as defined under section 207A of the EPBC Act has been identified for the southern right whale (DCCEEW, 2024a).





**Figure 7-1: Habitat critical to the survival for the southern right whale in the NWMR (DCCEEW, 2024a)**

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## 7.7 Biologically Important Areas in the NWMR

A review of the Australian Marine Spatial Information System (GA, 2024) identified 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 <sup>13</sup>	Reproduction		Migration
						Breeding	Calving	
Humpback whale <sup>11</sup>	✓	✓	✓	Shark Bay Exmouth Gulf (north migration—early June) (south migration—late Aug to Oct) Southern Kimberley region	No foraging BIA identified within the NWMR	Nursing 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 <sup>14 15</sup>	✓	✓	✓	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). Potentially still present January (McCauley et al., 2018).
Southern right whale <sup>16</sup>	-	-	✓	No resting BIA identified within the NWMR	No foraging BIA identified within the NWMR	Exmouth Gulf	No calving BIA identified within the NWMR	Migration along Australian coastline between April to October extending up to the Exmouth Gulf breeding BIA.

<sup>13</sup> Includes areas defined as 'foraging', 'foraging likely' and 'foraging (high density prey)' as per AMSIS (GA, 2024). These areas are shown in the BIA figures.

<sup>14</sup> DSEWPAC (2012a).

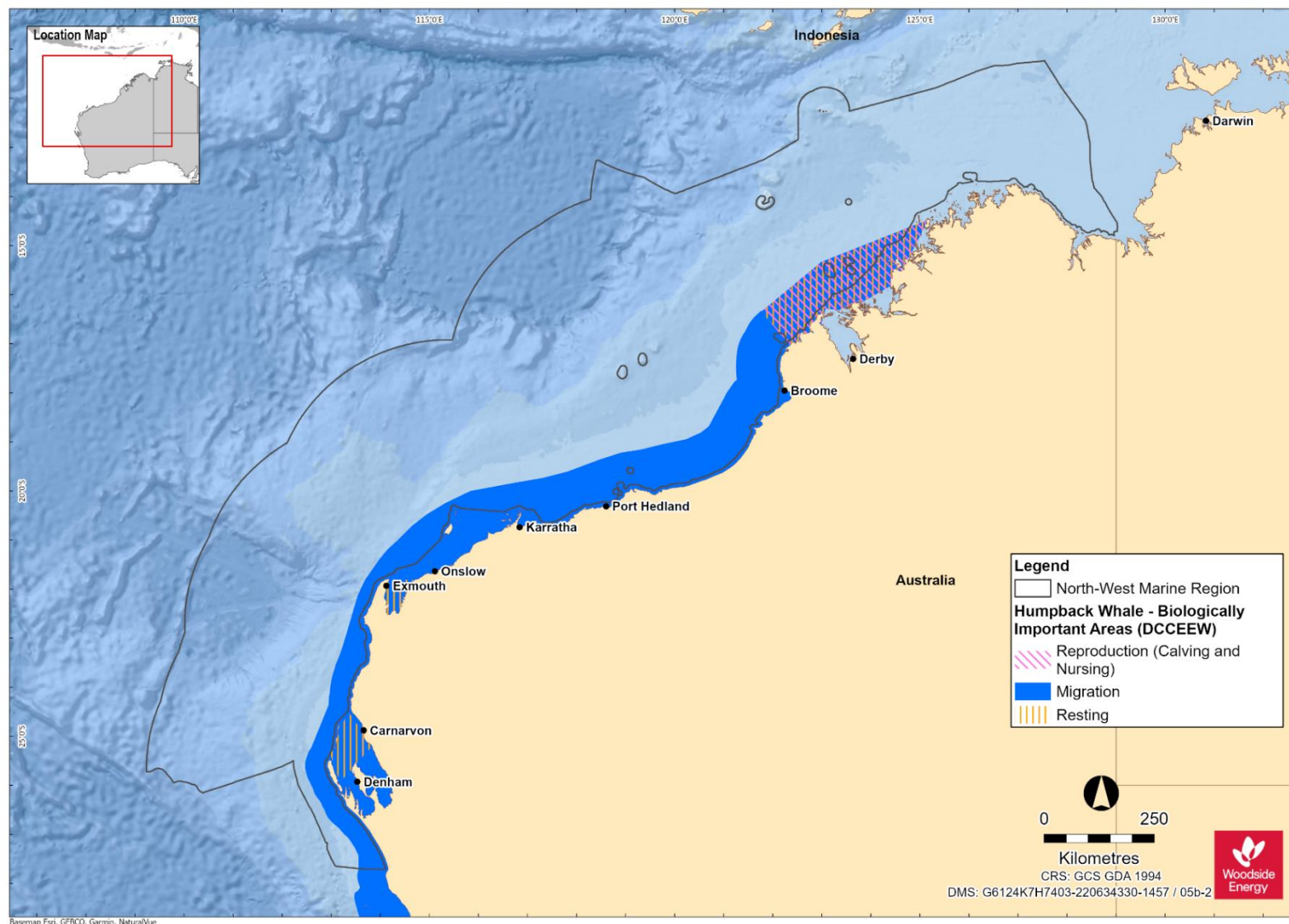
<sup>15</sup> Commonwealth of Australia (2015a).

<sup>16</sup> Revised BIAs (October 2023) - <https://www.dcceew.gov.au/environment/marine/bias>.

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging <sup>13</sup>	Reproduction		Migration
						Breeding	Calving	
Australian snubfin dolphin <sup>11</sup>	✓	✓	-	Cambridge Gulf Camden Sound area Prince Regent River Admiralty Gulf Parry Harbour Bougainville Peninsula Vansittart Bay Anjo Peninsula Napier Broome Bay Deep Bay King George River Cape Londonderry Ord River	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 Ord River	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 Ord River	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 Ord River	No migration BIA identified within the NWMR.

Species	Woodside Activity Area			BIAs				
	Browse	NWS/S	NWC	Resting	Foraging <sup>13</sup>	Reproduction		Migration
						Breeding	Calving	
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 Camden Sound area King Sound (south) King Sound (north) Yampi Sound	Roebuck Bay King Sound (south) King Sound (north) Yampi Sound	Roebuck Bay Camden Sound area King Sound (south) King Sound (north) Yampi Sound	Dampier Peninsula.
Dugong <sup>11</sup>	✓	✓	✓	No resting BIA identified within the NWMR	Exmouth Gulf Ningaloo Reef Shark Bay Roebuck Bay Dampier Peninsula	Eastern side of Dirk Hartog Island May–September Exmouth Gulf and Ningaloo year-round	Exmouth Gulf Ningaloo Reef Shark Bay	Within Shark Bay June–November and within Roebuck Bay year-round.

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**Figure 7-2: Humpback whale BIAs for the NWMR (data source: DCCEEW, 2024b)**

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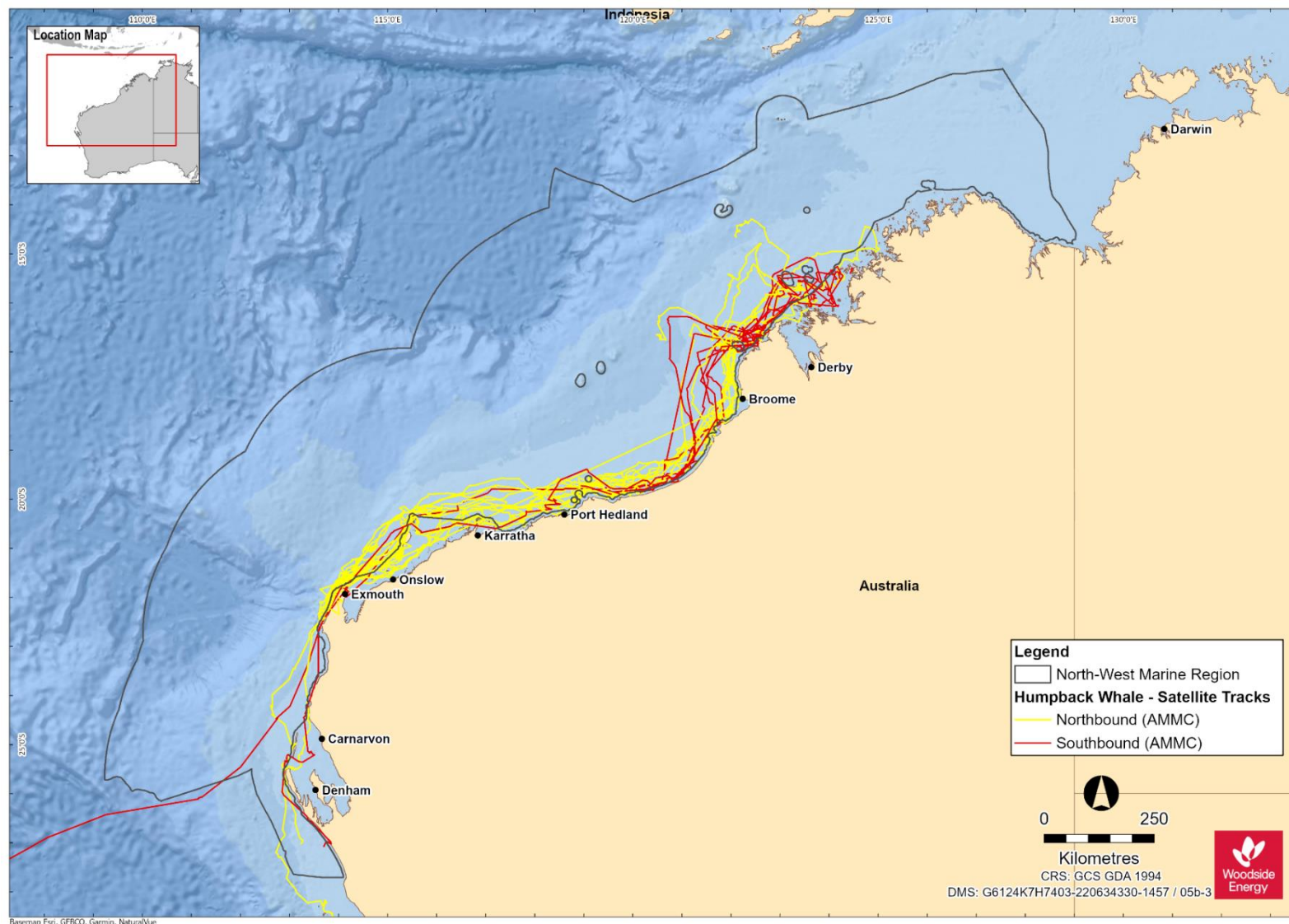
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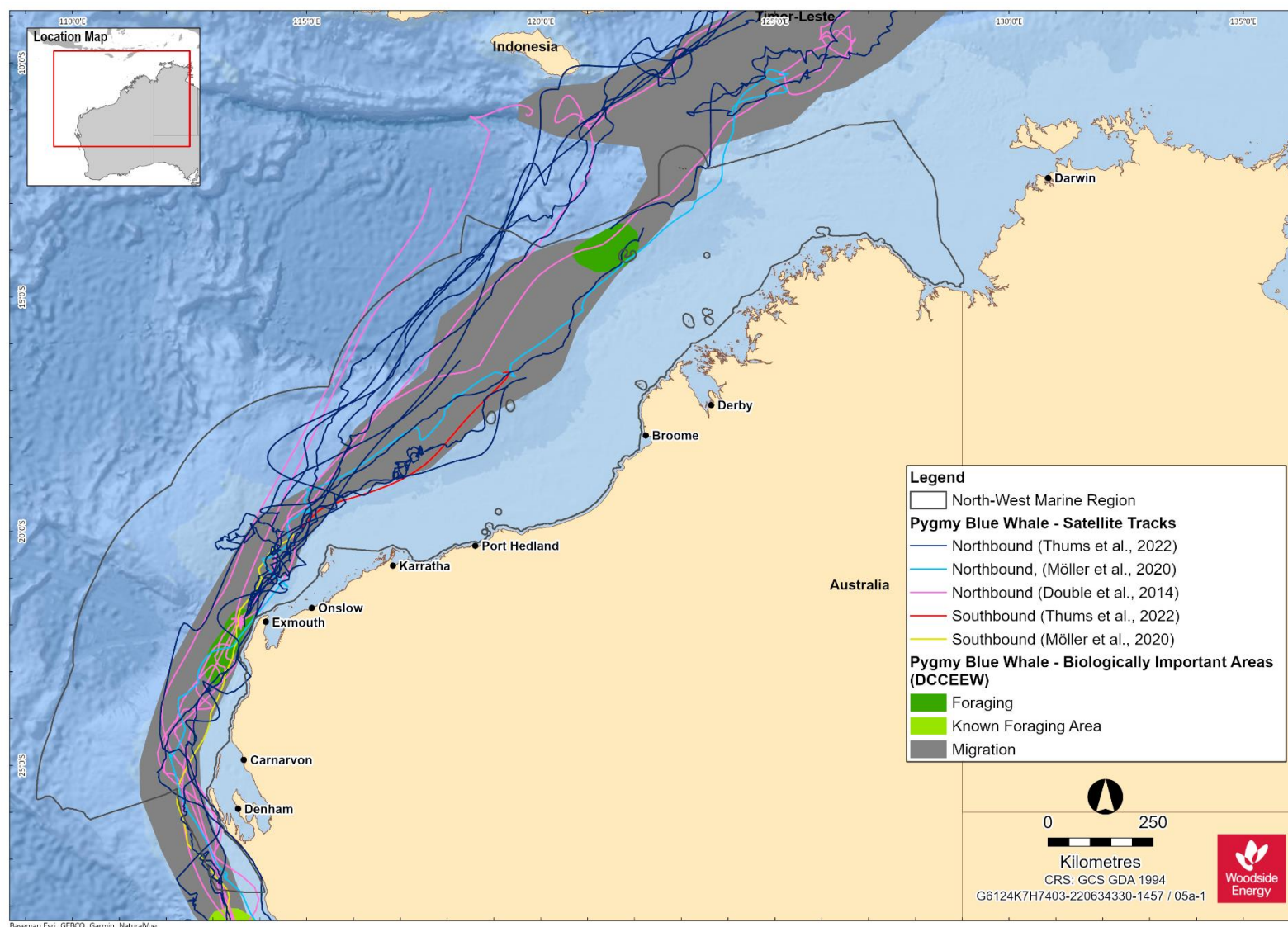
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**Figure 7-3: Humpback whale tagged tracks for north and south bound migrations (AMMC as published in Double et al., 2010 and 2012)**

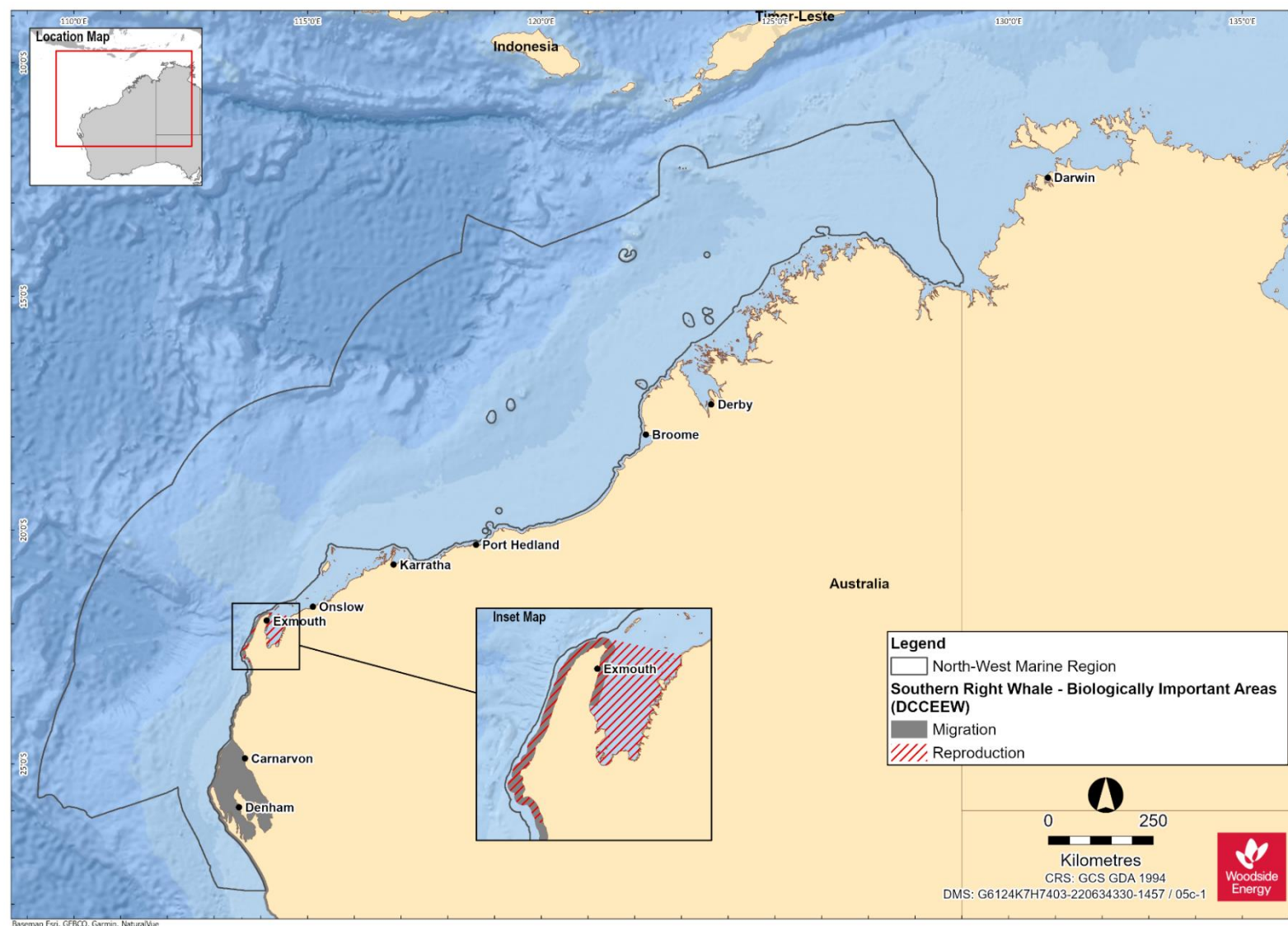
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**Figure 7-4: Pygmy blue whale BIAs for the NWMR and tagged whale tracks for northbound migration (data source for BIAs: DCCEEW, 2024b)**

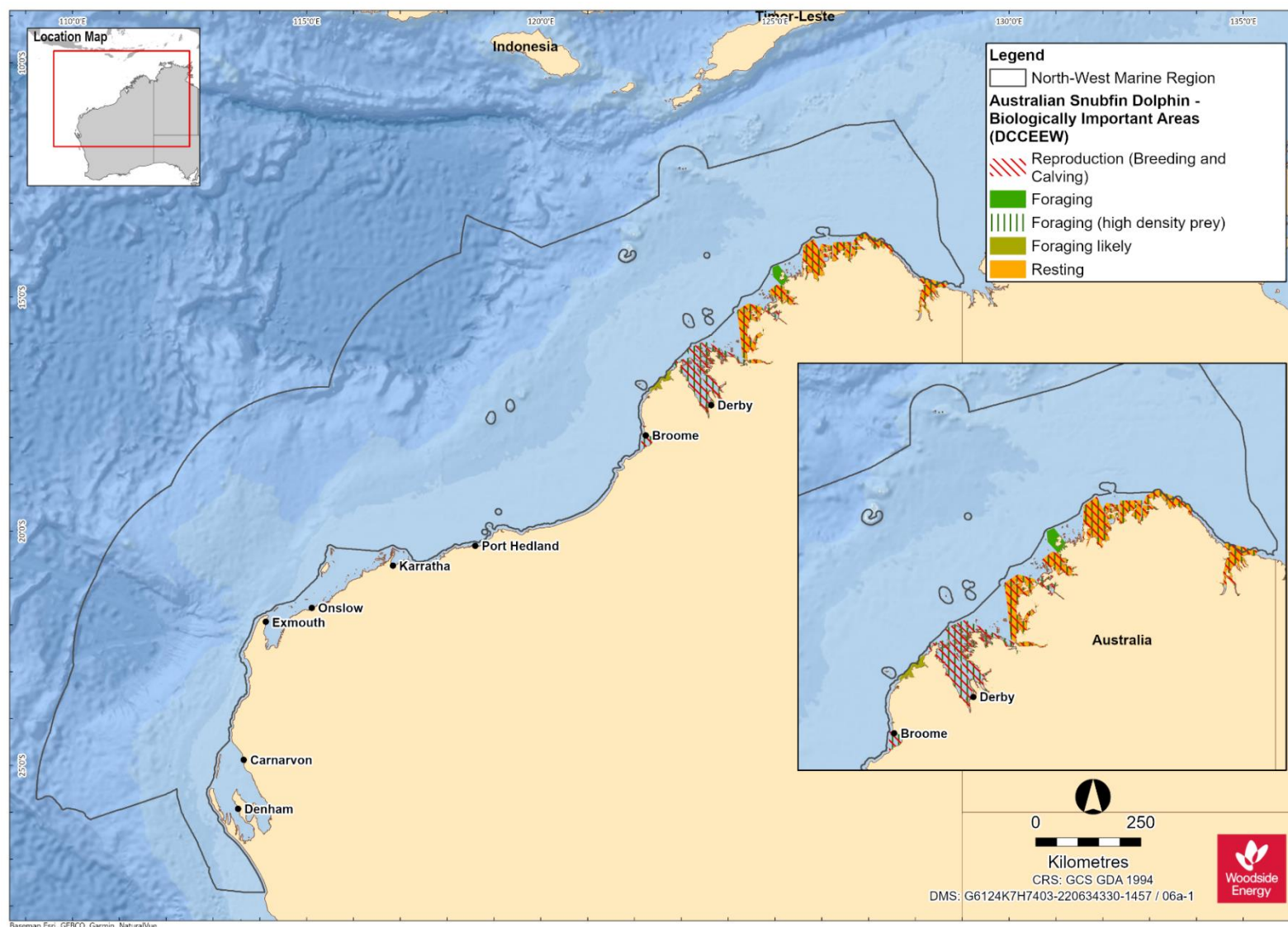
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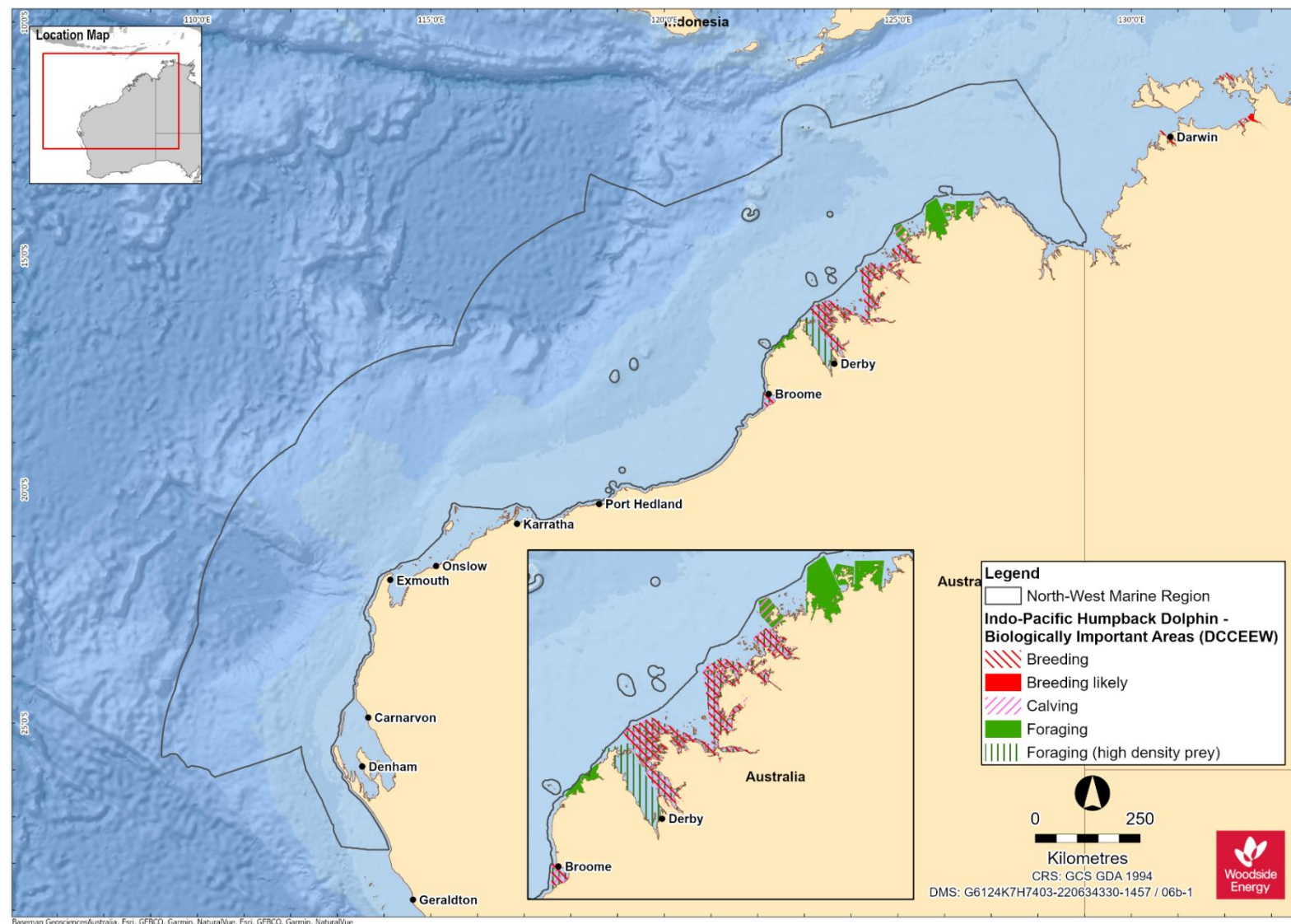
**Figure 7-5: Southern right whale BIAs for the NWMR; migration and reproduction BIAs along the coast extend to 3 NM (data source: DCCEW, 2024b)**

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**Figure 7-6: Australian snubfin dolphin BIAs for the NWMR (data source: DCCEEW, 2024b)**

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**Figure 7-7: Indo-Pacific humpback dolphin BIAs for the NWMR (data source: DCCEEW, 2024b)**

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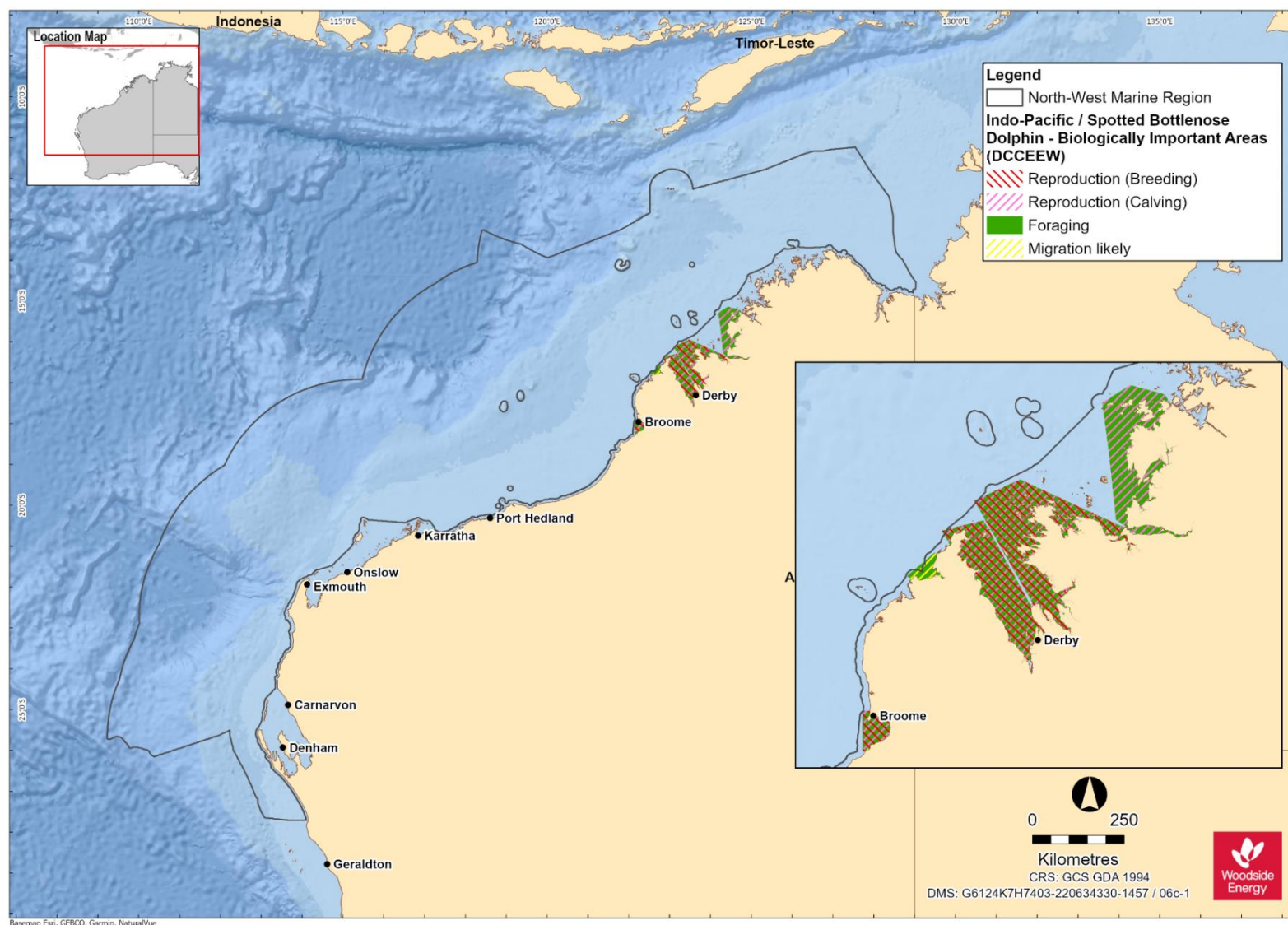
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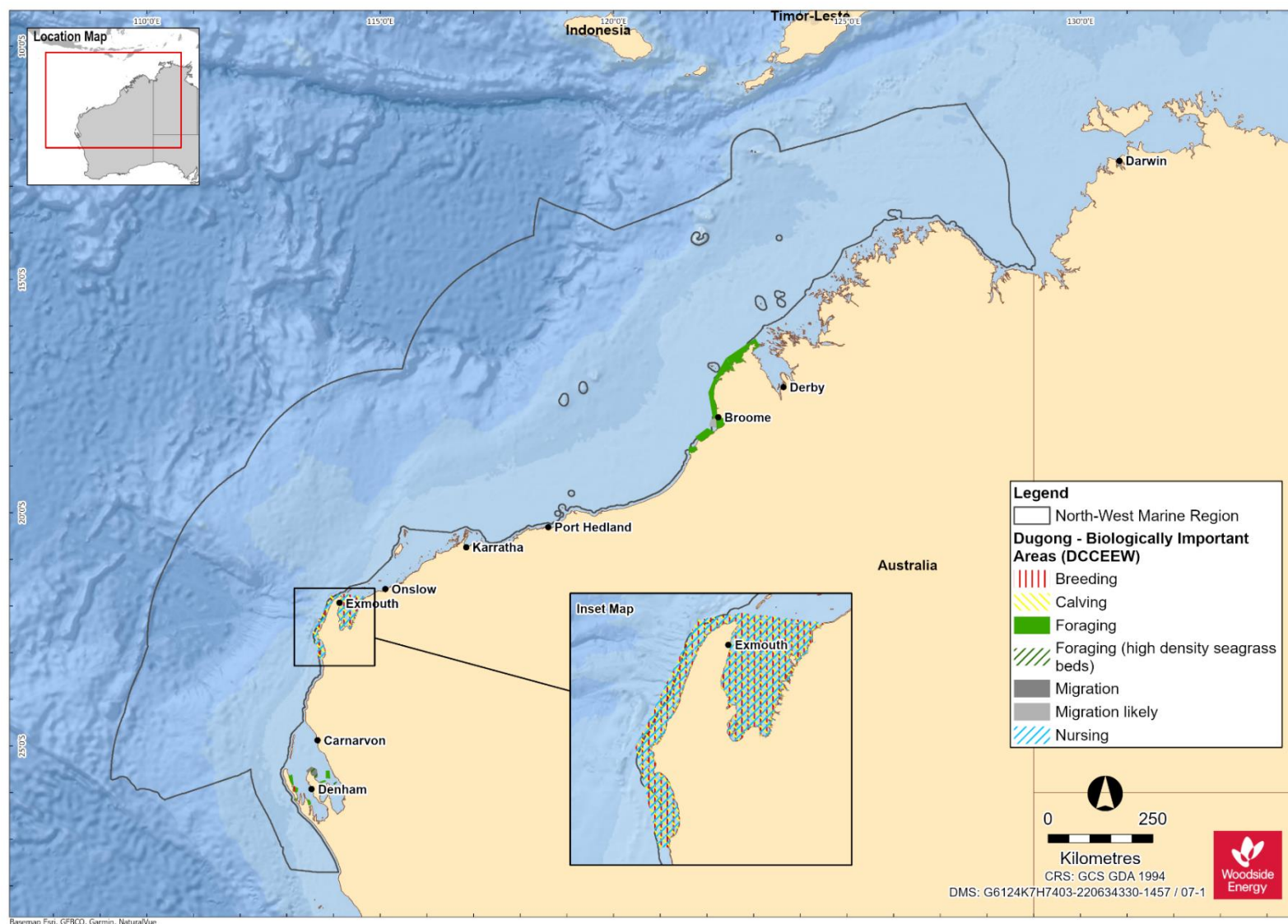
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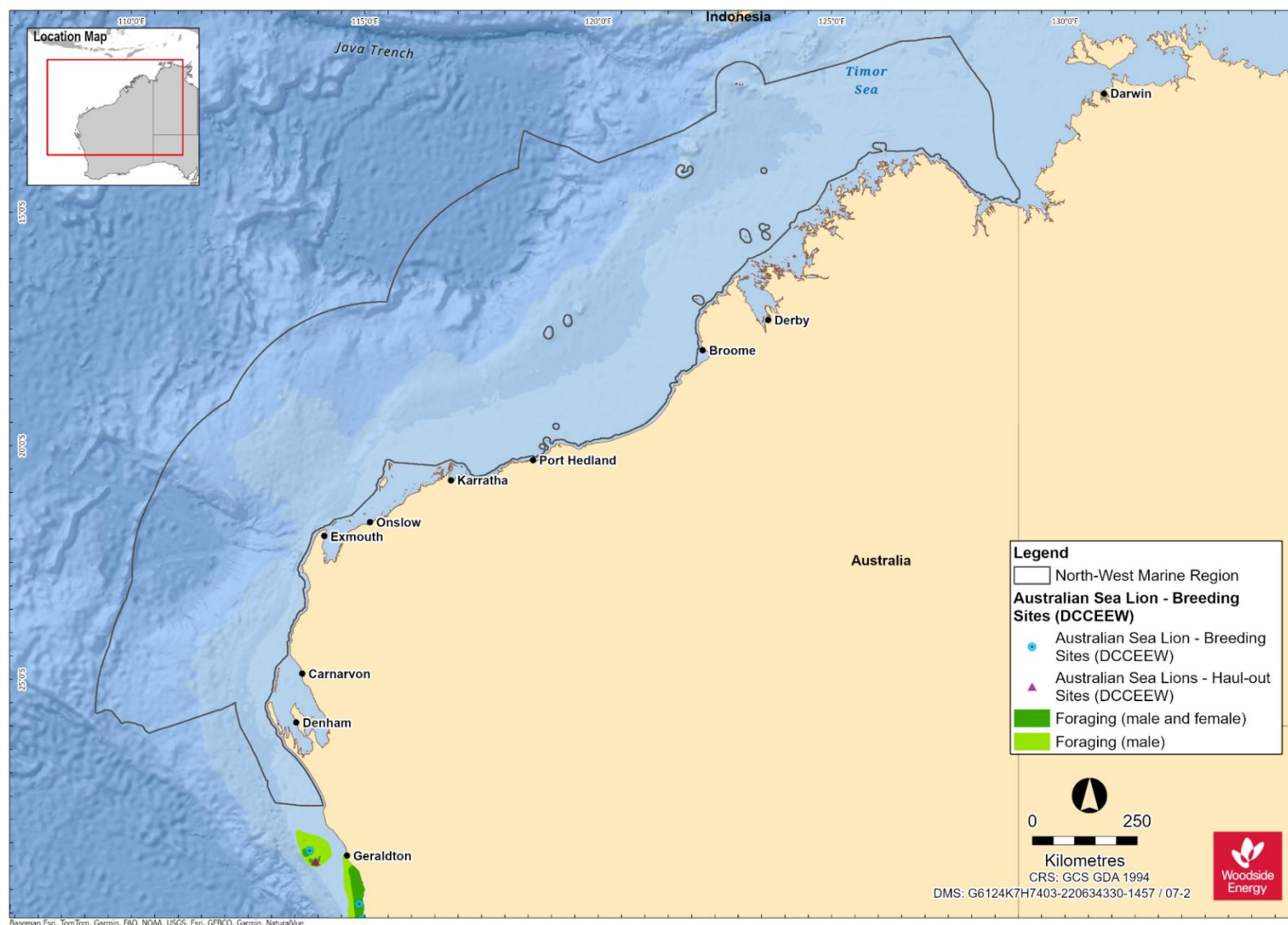
**Figure 7-8: Indo-Pacific spotted bottlenose dolphin BIAs for the NWMR (data source: DCCEEW, 2024b)**

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**Figure 7-9: Dugong BIAs for the NWMR (data source: DCCEEW, 2024b)**

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**Figure 7-10: Australian sea lion BIAs in the northern extent of the SWMR closest to the NWMR (data source: DCCEEW, 2024b)**

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## **7.8 Marine Mammal Summary for the NWMR**

### **7.8.1 Browse**

The Browse activity area includes biologically important habitat for six 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)
- spotted bottlenose dolphin (foraging, breeding and calving areas)
- dugong (foraging).

BIAs for the marine mammal species are outlined in Table 7-3.

### **7.8.2 North West Shelf / Scarborough**

The NWS / Scarborough activity area includes biologically important habitat for six 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)
- spotted bottlenose dolphin (present but no BIAs)
- dugong (foraging and calving areas).

BIAs for the marine mammal species are outlined in Table 7-3.

### **7.8.3 North West Cape**

The North West Cape activity area includes biologically important habitat for four threatened and/or migratory marine mammal species:

- blue whale and pygmy blue whale (foraging and migration areas)
- southern right whale (reproduction area)
- humpback whale (resting and migration areas)
- spotted bottlenose dolphin (present but no BIAs)
- dugong (foraging and breeding/ 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, 2012d). The NWMR marine bioregional plan also noted that Roebuck Bay and Eighty Mile Beach are internationally significant and recognised migratory shorebird locations.

A 'Seabird and Shorebird Existing Knowledge and Threats' report was prepared (2022) and updated in 2024 (Worley, 2024) to identify key bird species (categorised: pelagic seabirds, nearshore seabirds, shorebirds and others) and their threats in the NWMR (Advisian, 2024). The high and moderate occurrence species for the NWMR were informed from this report, as well as from PMST results. The report identified 92 species.

Each species was assigned to one of three frequency of occurrence levels:

- high—breeding and foraging aggregations known to occur
- moderate—known or likely presence
- low—may occur, or at limits of species range.

Table 8-1 includes those considered key species, i.e. high or moderate occurrence (Worley, 2024), and listed threatened and/or migratory under the EPBC Act, with a total of 56 key species identified (comprising 22 seabirds and 34 shorebirds).

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 international significance under the Ramsar Convention. Important Bird Areas (IBAs) for the NWMR, which are also recognised as global Key Biodiversity Areas (KBAs) (BirdLife Australia<sup>17</sup>), 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 high and moderate occurrence threatened and migratory seabird and shorebird species (as per subject matter expert review, Worley (2024)) that occur within the NWMR, with their conservation / protected status, relevant recovery plans and/or conservation advice.

<sup>17</sup> [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: High and moderate occurrence seabird and migratory shorebird species (threatened/migratory/marine) identified by the EPBC Act PMST and NWMR Seabird and Shorebird Existing Knowledge and Threats report as potentially occurring within the NWMR**

Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>18</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>19</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
Seabirds							
<i>Diomedea amsterdamensis</i>	Amsterdam Albatross	Endangered	Migratory	Marine	Critically Endangered	Endangered	National Recovery Plan for albatrosses and petrels (DCCEEW, 2022)
<i>Sternula nereis nereis</i>	Australian fairy tern	Vulnerable	N/A	N/A	Vulnerable	Vulnerable	National Recovery Plan for the Australian Fairy Tern <i>Sternula nereis nereis</i> (Commonwealth of Australia, 2020b)  EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (DoEE, 2018)
<i>Anous tenuirostris melanops</i>	Australian lesser noddy	Vulnerable	N/A	Marine	Endangered	Least Concern	Conservation Advice <i>Anous tenuirostris melanops</i> Australian lesser noddy (Threatened Species Scientific Committee, 2015e)  EPBC Act Threat Abatement Plan to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100,000 hectares (DEWHA, 2009)
<i>Pterodroma mollis</i>	Soft-plumaged petrel	Vulnerable	N/A	Marine	N/A	Least Concern	Conservation Advice <i>Pterodroma mollis</i> soft-plumaged petrel (Threatened Species Scientific Committee, 2015f)
<i>Sula leucogaster</i>	Brown booby	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for the impacts of marine debris on the vertebrate wildlife of Australia’s coasts and oceans (DoEE, 2018)
<i>Ardenna pacifica</i>	Wedge-tailed shearwater	N/A	Migratory	Marine	Migratory	Least Concern	

<sup>18</sup> Threatened and Priority Fauna List – April 2024 - <https://www.dbca.wa.gov.au/management/threatened-species-and-communities> (accessed on 13/08/2024)<sup>19</sup> IUCN, 2024. The IUCN Red List of Threatened Species. Version 2024-1. <https://www.iucnredlist.org> (accessed on 13/08/2024)

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>18</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>19</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Ardenna carneipes</i>	Flesh-footed shearwater	N/A	Migratory	Marine	Vulnerable	Near Threatened	
<i>Oceanites oceanicus</i>	Wilson's storm petrel	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Anous stolidus</i>	Common noddy	N/A	Migratory	Marine	Migratory	Least Concern	EPBC Act Threat Abatement Plan for predation by feral cats (DoE, 2015c)
<i>Fregata ariel</i>	Lesser frigatebird	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Fregata minor</i>	Great frigatebird	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Sula sula</i>	Red-footed booby	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Phaethon rubricauda</i>	Red-tailed tropicbird	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Onychoprion anaethetus</i> (listed as <i>Sterna anaethetus</i> )	Bridled tern	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Thalasseus bergii</i>	Greater crested tern	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Sternula albifrons</i>	Little tern	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Sterna dougallii</i>	Roseate tern	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Sterna hirundo</i>	Common tern	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Hydroprogne caspia</i>	Caspian tern	N/A	Migratory	Marine	Migratory	Least Concern	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>18</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>19</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Calonectris leucomelas</i>	Streaked shearwater	N/A	Migratory	Marine	Migratory	Near Threatened	
<i>Sula dactylatra</i>	Masked booby	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Phaethon lepturus</i>	White-tailed tropicbird	N/A	Migratory	Marine	Migratory	Least Concern	
All seabird species							Wildlife Conservation Plan for Seabirds (Commonwealth of Australia, 2020a) National Light Pollution Guidelines for Wildlife (DCCEEW, 2023d)
Migratory shorebirds							
<i>Numenius madagascariensis</i>	Eastern curlew, far eastern curlew	Critically Endangered	Migratory	Marine	Critically Endangered	Endangered	Conservation Advice <i>Numenius madagascariensis</i> Far eastern curlew (DCCEW, 2023e)
<i>Calidris ferruginea</i>	Curlew sandpiper	Critically Endangered	Migratory	Marine	Critically Endangered	Near Threatened	Conservation Advice <i>Calidris ferruginea</i> Curlew sandpiper (DCCEEW, 2023f)
<i>Limosa lapponica menzbieri</i>	Bar-tailed godwit (menzbieri)	Endangered	Migratory	Marine	Critically Endangered	Near Threatened	Conservation Advice <i>Limosa lapponica menzbieri</i> Bar-tailed godwit (northern Siberia) (DCCEEW, 2024e)
<i>Charadrius mongolus</i>	Lesser sand plover	Endangered	Migratory	Marine	Endangered	Endangered	Conservation Advice <i>Charadrius mongolus</i> Lesser sand plover (Threatened Species Scientific Committee, 2016)
<i>Rostratula australis</i>	Australian painted snipe	Endangered	N/A	Marine	Endangered	Endangered	Conservation Advice <i>Rostratula australis</i> Australian painted snipe (Threatened Species Scientific Committee, 2013a)
<i>Calidris canutus</i>	Red knot	Vulnerable	Migratory	Marine	Endangered	Near Threatened	Conservation Advice <i>Calidris canutus</i> Red knot (DCCEEW, 2024f)

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		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Calidris tenuirostris</i>	Great knot	Vulnerable	Migratory	Marine	Critically Endangered	Endangered	Conservation Advice <i>Calidris tenuirostris</i> Great knot (DCCEEW, 2024g)
<i>Charadrius leschenaultii</i>	Greater sand plover	Vulnerable	Migratory	Marine	Vulnerable	Least Concern	Conservation Advice <i>Charadrius leschenaultii</i> Greater sand plover (DCCEEW, 2023g)
<i>Limosa limosa</i>	Black-tailed godwit	Endangered	Migratory	Marine	Migratory	Near Threatened	Conservation Advice for <i>Limosa limosa</i> Black-tailed godwit (DCCEEW, 2024h)
<i>Limnodromus semipalmatus</i>	Asian dowitcher	Vulnerable	Migratory	Marine	Migratory	Near Threatened	Conservation Advice for <i>Limnodromus semipalmatus</i> Asian dowitcher (DCCEEW, 2024j)
<i>Tringa nebularia</i>	Common greenshank	Endangered	Migratory	Marine	Migratory	Least Concern	Conservation Advice for <i>Tringa nebularia</i> Common greenshank (DCCEEW, 2024i)
<i>Arenaria interpres</i>	Ruddy turnstone	Vulnerable	Migratory	Marine	Migratory	Least Concern	Conservation Advice for <i>Arenaria interpres</i> Ruddy turnstone (DCCEEW, 2024k)
<i>Calidris acuminata</i>	Sharp-tailed sandpiper	Vulnerable	Migratory	Marine	Migratory	Vulnerable	Conservation Advice for <i>Calidris acuminata</i> Sharp-tailed sandpiper (DCCEEW, 2024l)
<i>Xenus cinereus</i>	Terek sandpiper	Vulnerable	Migratory	Marine	Migratory	Least Concern	Conservation Advice for <i>Xenus cinereus</i> Terek sandpiper (DCCEEW, 2024m)
<i>Pluvialis squatarola</i>	Grey plover	Vulnerable	Migratory	Marine	Migratory	Least Concern	Conservation Advice for <i>Pluvialis squatarola</i> Grey plover (DCCEEW, 2024n)
<i>Pluvialis fulva</i>	Pacific golden plover	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Tringa totanus</i>	Common redshank	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Actitis hypoleucos</i>	Common sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>18</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>19</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Tringa stagnatilis</i>	Marsh sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Calidris melanotos</i>	Pectoral sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Tringa glareola</i>	Wood sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Limicola falcinellus</i>	Broad billed sand piper	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Limosa lapponica</i>	Bar-tailed godwit	N/A	Migratory	Marine	Migratory	Near Threatened	
<i>Calidris ruficollis</i>	Red-necked stint	N/A	Migratory	Marine	Migratory	Near Threatened	
<i>Calidris pugnax</i>	Ruff	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Xenus cinereus</i>	Terek sandpiper	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Numenius phaeopus</i>	Whimbrel	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Numenius minutus</i>	Little curlew	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Calidris alba</i>	Sanderling	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Calidris subminuta</i>	Long-toed stint	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Gallinago stenura</i>	Pin-tailed snipe	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Gallinago megala</i>	Swinhoe's snipe	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Glareola maldivarum</i>	Oriental pratincole	N/A	Migratory	Marine	Migratory	Least Concern	

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Species Name	Common Name	Environment Protection and Biodiversity Conservation Act 1999 (Cth) (as per PMST report in Appendix A)			Biodiversity Conservation Act 2016 (WA) <sup>18</sup>	IUCN Red List of Threatened Species (non-statutory) <sup>19</sup>	EPBC Act Part 13 Statutory Instrument
		Threatened Status	Migratory Status	Listed	Conservation Status	Global Status	
<i>Charadrius veredus</i>	Oriental plover	N/A	Migratory	Marine	Migratory	Least Concern	
<i>Tringa brevipes</i>	Grey-tailed tattler	N/A	Migratory	Marine	Migratory and Priority species	Near Threatened	
All migratory shorebird species							Wildlife Conservation Plan for Migratory Shorebirds (Commonwealth of Australia, 2015c)  EPBC Act Policy Statement 3.21—Industry guidelines for avoiding, assessing, and mitigating impacts on EPBC Act listed migratory shorebird species (DoEE, 2017)  National Light Pollution Guidelines for Wildlife (DCCEE, 2023)
Other marine birds							
<i>Apus pacificus</i>	Fork-tailed swift		Migratory	Marine	N/A	Least Concern	None
<i>Pandion haliaetus</i>	Osprey		Migratory	Marine	N/A	Least Concern	None

## 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, 2020a).

At least 22 key seabird species (high and moderate occurrence, listed as threatened and/ or migratory under the EPBC Act) are known to occur in the NWMR. These include a variety of species of terns, noddies, petrels, shearwaters, frigatebirds, and boobies.

Seabird species can be grouped into pelagic and nearshore seabirds, based on life cycle behaviour, distributions and key habitats (Worley, 2024). Pelagic species spend most of their life at sea, 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, 2012d). Nearshore seabirds are confined to nearshore areas (unless migrating), have shorter foraging trips during breeding and may rest on land/shoreline habitats outside of breeding periods (Worley, 2024).

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. 16 species of seabirds breed there. 80% 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), EPBC Act Bioregional Biologically Important Areas and subject matter expert review, as presented in Worley (2024).

### 8.2.1 High-occurrence Key Seabird Species

Species descriptions for high occurrence key seabird species are provided below. High occurrence seabird species were defined as those with breeding and foraging aggregations within NWMR (Worley, 2024).

#### 8.2.1.1 Wedge-tailed Shearwater (Pelagic Seabird)

The wedge-tailed shearwater (*Ardenna pacifica*) is listed migratory under the EPBC Act and *Biodiversity Conservation Act 2016* (WA) (BC Act). It is a pelagic, marine seabird known from tropical and subtropical waters. Its distribution is widespread across the Indian and Pacific oceans with a global population of 2.6 million pairs. Of this, approximately one million pairs breed in Australia, most of which do so on islands in Western Australia between Rottnest Island in the south to Ashmore Reef in the north. The largest breeding populations are at the Houtman Abrolhos (600,000 pairs—Surman and Nicholson, 2009), and throughout the NWS region of the NWMR, where large populations on Muiron Islands (300,000 pairs) and Serrurier Island (60,000 pairs) exist (Surman and Nicholson, 2009, 2015).

Adults are absent from their breeding colonies during the interbreeding period and return from their tropical Indian Ocean over-wintering grounds from late-June onwards to re-excavate their burrows. This species is highly synchronous in timing of breeding; all eggs within a colony are laid within a ten-day period. They lay their single egg during early-November, which is then incubated until the chick hatches (after 53 days) in early January. Once hatched, adults leave the burrows to forage locally during the day returning at night to feed chicks until they are ready to fledge (Nicholson, 2002).

Due to the high synchronicity in egg laying, fledging is restricted to the first two weeks of April (Nicholson, 2002).

Breeding behaviours are nocturnal in wedge-tailed shearwaters. Adults return to and depart the colony at night and fledglings depart the colony at night. In the lead up to fledging, chicks also leave their burrows to exercise their wings outside burrows. Adults may not return to feed chicks each night; wedge-tailed shearwaters breeding on the Muiron Island (north) undertook extensive foraging trips during the incubation period (1200–1400 km) and shorter trips during chick rearing (<300 km, Cannell et al., 2019). Longer foraging trips took individuals in a north-west direction offshore towards oceanic seamounts. Conversely, the shorter tended to include waters to the west and north-west of the Muiron Islands (Cannell et al., 2019). In addition to the Muiron Islands, this dual foraging strategy, whereby parents alternate or mix short and long trips, have been recorded in wedge-tailed shearwaters breeding at Heron Island, Queensland, Lord Howe Island, Tasmania (Peck and Congdon, 2005), and New Caledonia (Weimerskirch et al., 2020). However, divergent foraging strategies have been detected between colonies, which is linked to the proximity of colonies to high productivity waters (Peck and Congdon, 2005; Weimerskirch et al., 2020). While the presence of squid and lanternfish in their diet (Surman and Nicholson, 2009) suggests nocturnal foraging occurs in this species, GPS tracking studies found that foraging activities at sea were more frequent during the day compared with at night (Weimerskirch et al., 2020; Catry et al., 2009). During the day, resting periods on the sea surface were short whereas at night individuals spent a large proportion of their time resting at the surface (Weimerskirch et al., 2020). Other prey species include schooling bait fishes and cephalopods, often feeding in association with other pelagic seabird species such as sooty terns and common noddies, and pelagic fishes such as tunas and mackerels. Diet composition is likely to vary between colonies, depending upon the prey available, and thus determining both the foraging strategy, as described above, and also the division of nocturnal and diurnal foraging. Wedge-tailed shearwaters dive between 3 and 66 m, actively pursuing prey by feeding at the surface or by actively swimming below bait schools.

Post-breeding, wedge-tailed shearwaters breeding on the Houtman Abrolhos Islands and Varanus Island migrated 4500 km north-west to equatorial waters of the Indian Ocean around 90°E (Surman et al., 2018), traversing the NWMR, and those from the Great Barrier Reef migrated to the northern hemisphere, approximately 6000 km northwards to Micronesia (McDuie and Congdon, 2016).

Wedge-tailed shearwaters are observed during breeding across all shelf waters and are the most frequently encountered seabird at sea. Large numbers of wedge-tailed shearwaters have been observed foraging off the NWS between May–August (Surman pers obs.).

Foraging and breeding BIAs are located for the wedge-tailed shearwater across the NWMR (Figure 8-1). It is noted that both breeding and foraging BIAs represent foraging habitat utilised by adult (chick-rearing) wedge-tailed shearwaters during the breeding season.

### 8.2.1.2 Australian Lesser Noddy (Pelagic Seabird)

The Australian lesser noddy (*Anous tenuirostris melanops*), which is endemic to Australia, is listed vulnerable under the EBPC Act and endangered under the BC Act. The largest breeding colonies are found on the Houtman Abrolhos Islands with fewer records of breeding on Ashmore Reef (Clark et al., 2011; Cannell and Surman, 2021). Possible colonisation of Cocos (Keeling) Island is reported; however, it is unconfirmed if this is the Australian subspecies (Stokes and Hinchey, 1990).

At the Houtman Abrolhos Islands, the breeding population has been estimated at ~50,000 breeding pairs (Surman et al., 2016). At this location, studies indicate that breeding is not highly synchronised; the single egg clutches were laid over a 102-day period from late August to early December, peaking in September (Surman and Wooller, 1995). The incubation period averaged 34 days and the fledging period 40 days. (Surman and Wooller, 1995).

Studies of foraging ecology of breeding Australian lesser noddies at the Houtman Abrolhos Islands found that they are largely diurnal, foraging between 04h00 and 20h40 and returning to their colony



at night (Surman et al., 2017). From this study, the GPS tracks of 17 adults during incubation or chick provisioning revealed that most foraging trips lasted for between two and four hours with a total trip distance of less than 40 km. However, some trips lasted up to 16 hours covering distances of up to 112 km (Surman et al., 2017). During non-breeding, birds appear to remain near the breeding islands year-round (Higgins and Davies, 1996).

Due to differences in climate and seasonality experienced at the Houtman Abrolhos Islands and Ashmore Reef, timing of breeding differs. The Ashmore Reef population has been recorded breeding in the Austral autumn/winter (Clarke and Herrod, 2016), while the Houtman Abrolhos Islands populations breed during the Austral spring/summer (Surman and Wooller, 1995).

No BIAs for the Australian lesser noddy overlap the NWMR and tracking data suggests that individuals breeding at the Houtman Abrolhos Islands foraged predominantly in a south-westerly direction, remaining within waters of the SWMR (Surman et al., 2017). Several individuals were observed roosting with common noddies on Bernier Island, near Carnarvon in 2022 (Nicholson pers obs.). However, it is unlikely that waters of the NWMR provide significant habitat for individuals breeding at the Houtman Abrolhos Islands. The small population of this subspecies breeding on Ashmore Reef may show similar foraging ecology during breeding and remain in the vicinity of the islands, utilising habitats of the NWMR.

### 8.2.1.3 Brown Booby (Pelagic Seabird)

The brown booby (*Sula leucogaster*) is listed migratory under the EPBC Act and BC Act. It is a cosmopolitan species with a pan-tropical distribution. Within the NWMR, large colonies occur at offshore islands including the Lacepede Islands (17,000 pairs, Mustoe and Edmunds, 2008), Ashmore Reef (5000 pairs at Middle Island and 3000 pairs at East Island in 2007, Swann, 2005a; Swann, 2005b; Swann, 2005c; Milton, 2005; Clarke, 2010), Bedout Island (1000 pairs) and Adele Island (7500 pairs, Burbidge et al., 1987). Small colonies of up to 10 pairs have been recorded at Overhanging Rock, within the Lowendal Islands (Nicholson, pers obs.). The total breeding population in the Australian region in 1996–97 was estimated at 59,940 to 73,900 pairs (WBM Oceanics and Claridge, 1997).

Brown boobies do not migrate far from their breeding islands, rarely dispersing more than 240 km from their natal colony (Dunlop et al., 2001). Brown boobies forage within 50 km of their colony where they plunge dive, reaching up to 15 m depth and pursuing their prey when ascending after the dive (Austin et al., 2021). Brown booby diet is principally medium to large surface schooling prey (northern pilchard, Indian anchovy, flying fish and cephalopods), often associated with feeding tunas and mackerels (Cannell et al., 2022; Austin et al., 2021).

Brown boobies are not prone to waterlogging and will roost on the seas surface and are known to form large aggregations on oil and gas platforms throughout the NWMR (Surman pers obs.), Woodside facilities indicating wider distribution of non-breeding individuals across the NWMR.

Breeding/foraging BIAs for the brown booby in the NWMR are associated with breeding colonies on Ashmore Reef, Adele Island, White Island, Lacepede Islands and Bedout Island (Figure 8-3). Breeding is reported as occurring between January and March; however, this becomes protracted through to October at Ashmore Reef (Clarke et al., 2016). Brown Boobies are resident in the NWMR throughout the year, although they may forage long distances over the open ocean (Surman and Nicholson, 2011).

Breeding/foraging BIAs for the brown booby in the NWMR are associated with breeding colonies on Ashmore Reef, Adele Island, White Island, Lacepede Islands and Bedout Island (Figure 8-3).

### 8.2.1.4 Red-footed Booby (Pelagic Seabird)

The red-footed booby (*Sula sula*) is listed migratory under the EPBC Act and BC Act. Compared to brown boobies, the red-footed booby occurs in fewer numbers across the NWMR. Within the NWMR they breed at Ashmore Reef (up to 100 pairs, Clarke and Herrod, 2016) and Adele Island (14 pairs,

Bottle et al., 2004). At Ashmore Reef they have been recorded breeding year-round (Clarke and Herrod, 2016).

The red-footed booby is one of the most widely distributed of the boobies across oceanic waters in the tropical Indian Ocean; during non-breeding, individuals have been observed up to 800 km from their natal colony (Dunlop et al., 2001). However, individuals are limited to a range of 150 km from the breeding colony when breeding (Wiemerskirch et al., 2005). In the Ashmore area, adults have been detected up to 125 km from the nearest breeding islands during October (unpubl. data, referenced in Clarke and Herrod, 2016).

Red-footed boobies are diurnal foragers, plunge diving for flying fishes (predominantly) across their range (Commonwealth of Australia, 2020a). Breeding/foraging BIAs for the red-footed booby are associated with breeding colonies at Ashmore Reef and Adele Island (Figure 8-3).

#### 8.2.1.5 Masked Booby (Pelagic Seabird)

The masked booby (*Sula dactylatra*) is listed as migratory under the EBPC Act. Within the NWMR, the sub-species *Sula dactylatra bedouti* ranges from the Dampier Archipelago, along the entire coast into the NMR and across to Queensland (Merchant and Higgins, 1990). Individuals have also been recorded at Barrow Island.

Within the NWMR, Bedout and Adele Island represent the main breeding locations with 400 and 320 breeding pairs estimated at each respectively (Marchant and Higgins, 1990; Swann et al., 2002). Breeding is also reported at the Ashmore Reef group with up to 30 breeding pairs recorded on Middle Island and 15 pairs on East Island (Burbidge and Fuller, 1996; Hassell et al., 2003; Swann, 2005a; Swann, 2005b; Swann, 2005c; Milton, 2005; Clarke, 2010; Clarke et al., 2016). Up to two pairs have also been recorded breeding in the Lacapede Group (Hassell et al., 2003).

A recent study of individuals from Bedout Island indicated low genetic exchanges (mitochondrial genes) with other masked booby colonies currently studied, suggesting a dependence on local recruitment for population persistence (Kingsley et al., 2019). Further, the low exchange of mitochondrial genes may reflect high breeding site fidelity and limited foraging distances during the breeding season. Due to the concentration in a relatively small number of areas to breed, any catastrophe at these sites (e.g. oil spills, or disturbance/vandalism of nests) could have a substantial impact on the population (Birds Australia, August 2005).

Studies of foraging behaviour of individuals breeding within the NWMR are lacking; however, studies at other locations indicate that foraging is diurnal and ranges vary between 100 and 200 km of the breeding colony (Weimerskirch et al., 2008).

There are no BIAs for this species in the NWMR.

#### 8.2.1.6 Common Noddy (Pelagic Seabird)

The common (or brown) noddy (*Anous stolidus*) is listed as migratory under the EPBC Act and BC Act. The species is widespread in tropical and subtropical areas within and beyond Australia. This seabird species is gregarious and normally occurs in flocks, up to hundreds of individuals, when feeding or roosting.

The Houtman Abrolhos is the primary breeding habitat for the common noddy in the Eastern Indian Ocean, although breeding occurs across offshore islands of the NWMR, albeit in fewer numbers, including Bedout Island, Montebello Islands and Fazer Island (Johnstone et al., 2013), and Ashmore Reef (Clark and Herrod, 2016). Breeding at Ashmore Reef has been recorded as occurring between April and November (Clark and Herrod, 2016).

During breeding, individuals nesting on Lancelin Island in the SWMR were found to forage diurnally (Shephard et al., 2018). Tracked individuals travelled an average of 97 km from the colony with an average trip distance of 141 km, with significantly longer trips during chick rearing compared to incubation (Shephard et al., 2018).

The species is highly pelagic outside breeding (March to August), with breeding individuals of the Houtman Abrolhos Islands travelling ~950 km north to the NWMR (Surman et al., 2017). The species is often reported roosting on unmanned oil and gas platforms within the NWS and Timor Sea (Surman pers comm, 2021).

Although widespread across the NWMR during breeding and non-breeding, no BIAs for this species are located in the NWMR.

#### 8.2.1.7 Bridled Tern (Pelagic Seabird)

The bridled tern (*Onychoprion anaethetus*, listed as *Sterna anaethetus*) is listed migratory under the EPBC Act and BC Act. It is a common summer breeding visitor to the NWMR between September and April, especially around Dampier Archipelago and the Montebello Islands (Johnstone et al., 2013). Breeding has also been reported on the Lowendal Islands (Nicholson, 2002), Passage Islands and islands off Onslow from November–March (Johnstone et al., 2013). Small breeding populations have also been recorded on East Island at Ashmore Reef between April–November and the Lacapède Islands (Clarke and Herrod, 2016; Johnstone and Storr, 1998).

The migration and local movements of breeding birds within the NWMR are poorly defined; two individuals were tracked departing the Houtman Abrolhos islands in April/May, transiting along the continental shelf waters before departing Australian waters and migrating towards the Western Celebes Sea, east of Borneo (Surman et al., 2018). These individuals departed the Western Celebes Sea in August/September returning to the Houtman Abrolhos islands around 14 days later (Surman et al., 2018). This species has been regularly recorded on the continental shelf up to 70 km away from breeding locations during oceanic surveys (Surman and Nicholson, 2011; Dunlop et al., 2001).

Bridled terns feed diurnally on a range of species of fish, crustaceans, cephalopods and insects. In Australia, they feed almost entirely on fish, though they also take crustaceans and aquatic insects. They often feed on schools of fish forced to the surface by other predators (Dunlop, 1997). Bridled Terns forage mainly by contact dipping, with birds hovering or gliding close to the surface of the sea and swooping down and immersing only the head and breast when attacking prey, which are usually taken from the top few centimetres of the sea surface (<20 cm) (Dunlop, 1997).

During breeding at Penguin Island, WA, individuals foraged most commonly between 20 km and 40 km from the nearest breeding colony, though some were observed at distances up to 80 km (Dunlop, 1997). This species has also been recorded within 70 km of their breeding colonies within the NWMR, on outer continental shelf waters (Nicholson, 2002; Dunlop et al., 2001).

Although foraging may be concentrated around breeding colonies during the breeding season, no BIAs in the NWMR have been identified for this species.

#### 8.2.1.8 Frigate Birds (Pelagic Seabirds)

The lesser (*Fregata ariel*) and great frigatebirds (*Fregata minor*) are both listed migratory under the EPBC Act and BC Act. They are the most widely distributed of the frigatebirds, with a pan-tropical distribution.

In the NWMR, the great frigatebird nests at Ashmore Reef and Adele Island. At Ashmore Reef they are found to breed year-round (Clark and Herrod, 2016). In addition to the Ashmore Reef and Adele Island, the lesser frigatebird also nests at Cartier Island, the Lacapède Islands and Bedout Island, which is thought to support more than 1% of the world's breeding population (BirdLife International, 2021). On Ashmore Reef, the species breed in the Austral winter (Clark and Herrod, 2016).

During breeding, great frigatebirds breeding in the South China Sea on average foraged 75 km (maximum 150 km) from their breeding colony and lesser frigatebirds 123 km (maximum 300 km) (Mott et al., 2017).

Outside of breeding, frigatebirds may disperse significant distances from their breeding colonies (Mott et al., 2017). Great frigatebirds are wide ranging, being recorded between 900–1400 km from

their natal colonies (Dunlop et al., 2001). Tracking studies of non-breeding lesser and great frigatebirds roosting on Ashmore Reef and Adele Island demonstrated that individuals have large distributions including Australian coastal waters and in addition to the South China, Java and Sulu Seas and the Gulf of Thailand (Mott et al., 2021). During the wet season in particular, Australian waters provided optimal habitat for non-breeding individuals of both species. (Mott et al., 2021).

Both frigatebirds forage by snatching prey from the surface waters, or when prey break the surface. They also rely heavily upon kleptoparasitism, harrying other seabirds returning to their colonies with food until it is regurgitated. Frigatebirds are susceptible to waterlogging, so do not plunge or splash dive for prey nor do they roost on the seas surface. Across the NWMR they forage on flying fish, cephalopods, anchovies, northern pilchards and other medium sized prey (8–30 cm, Surman pers. obs.).

Breeding/foraging BIAs for the great frigatebird in the NWMR are associated with breeding colonies on Ashmore Reef and Adele Island. For the lesser frigatebird, breeding/foraging BIAs are associated with breeding colonies on Ashmore Reef, Adele Island, White Island, Lacepede Islands and Bedout Island (Figure 8-4).

#### 8.2.1.9 White-tailed Tropicbird (Pelagic Seabird)

The white-tailed tropicbird (*Phaethon lepturus*) is listed migratory under the EBC Act and BC Act. The species breeds across many sites, but in low numbers (Commonwealth of Australia, 2020). In Australia, between 6000 and 12,000 pairs nest on Christmas Island, with smaller fragmented populations at North Keeling Island (40 pairs). These individuals are expected to be members of the Christmas Island white-tailed tropicbird sub species *Phaethon lepturus fulvus*. While individuals of this subspecies can forage at great distances from colonies (see below), the numbers occurring in the NWMR are expected to be low.

In the NWMR, the white-tailed tropicbird is known to nest on Ashmore Reef and the Rowley Shoals, (10 breeding pairs and up to three nesting pairs; Clark, 2010; Burbidge et al., 1996, respectively). Breeding can occur year-round (Clarke and Herrod, 2016).

Pennycuik et al. (1990) demonstrated that the white-tailed tropicbirds breeding in Puerto Rico foraged up to 89 km from the nest site when breeding and moved considerably larger distances when not breeding. Dunlop et al. (2001) observed birds from Christmas Island foraging singly between 1400–1600 km south-east of Christmas Island.

This species regularly roosts on the seas surface, in between bouts of foraging. It is a solitary forager, rarely feeding in association with other seabird species and always in waters favourable for its principal prey, flying fish (Santos et al., 2018). The species is a surface forager that occasionally undertakes shallow dives (Marchant and Higgins, 1990).

There are breeding BIAs associated with nesting occurring at the Rowley Shoals and Ashmore Reef within the NWMR (Figure 8-5).

#### 8.2.1.10 Red-tailed Tropicbird (Pelagic Seabird)

The red-tailed tropic bird is listed as Endangered (since December 2023) under the EPBC Act and 'Priority 4' under the BC Act.

Across the NWMR, the largest population breeds on Christmas Island (1400–2000 pairs, references within Sommerfeld et al., 2015) with additional key breeding locations on Cocos (Keeling) Group and islands of Ashmore Reef Marine Park (17–24 breeding pairs, Clarke et al., 2011; Clarke and Herrod, 2016). At Ashmore Reef, breeding pairs were observed year-round, with no discernible peak in breeding activity (Clarke et al., 2011).

The red-tailed tropicbird is a shallow diving species typically foraging diurnally within the first 4 m of the water column (LeCorre, 1997). There is limited information concerning foraging range when breeding in Australia, but observations at sea in the Ashmore Reef region demonstrate they are

capable of foraging considerable distances from land (unpubl. data, Clarke, 2010). This corroborates data from elsewhere in their global range which reported foraging distances of 240 km during incubation, 109 km during chick rearing and maximum distances of 380 km (Fayat et al., 2023). This species has been observed during boat surveys of the outer shelf of the NWMR year-round (Surman and Nicholson, 2011).

There are no BIAs for this species within the NWMR.

#### 8.2.1.11 Australian Fairy Tern (Nearshore Seabird)

The Australian fairy tern (*Sternula nereis nereis*) is listed vulnerable under the EPBC Act. The WA breeding population (approximately 5000–6000 mature individuals) is dispersed over approximately 2500 km of coastline (Greenwell, 2021). Within Western Australia, the subspecies comprises a sedentary Pilbara population and a partially-migratory population extending from Exmouth to Point Malcolm. Individuals of the partially-migratory population may occasionally migrate into the southern region of the NWMR during the winter months.

Within the NWMR breeding occurs in small colonies between June–September on offshore islands, including Simpson Island, Barrow Island, the Montebello Islands, the Lowendal Islands, Thevenard Island, Serrurier Island, the islands in the Dampier Archipelago, Maryanne Shoals and Egret Island (Dunlop, 2018; Johnstone et al., 2013; Surman pers. obs.). Colonies tend to occupy areas rather than fixed sites, and nest sites can be abandoned after one or more years, even if they have been successful (Saunders and de Rebeira, 1985).

While information regarding foraging ecology of this species within the NWMR is lacking, the Australian fairy tern has been studied in South Australia. Here, species typically forages in inshore waters and has been reported to rarely travel beyond 2 km during the breeding season in South Australia (Paton and Rogers, 2009).

Australian fairy terns are diurnal plunge diving seabirds, feeding exclusively on small (<60 mm) surface schooling bait fishes throughout their range. Prey include species of sprats, hardy heads and larval prey of some demersal fish species. Unlike many other terns, fairy terns are not dependent upon large pelagic fishes to drive their prey to the surface.

Breeding and foraging BIAs are identified for the fairy tern in the NWMR, as presented in Figure 8-2.

#### 8.2.1.12 Little Tern (Nearshore Seabird)

The little tern (*Sternula albifrons*) is listed migratory under the EPBC Act and BC Act. There are three sub-populations of little tern in Australia and two of these occurring in the NWMR: the northern Australian breeding subpopulation occurring around Broome and extending across the NWMR to Cape York, and an east Asian breeding subpopulation, with the terns present from Shark Bay to south-eastern Queensland during the Austral summer.

Recent surveys have found that little terns breed across the NWMR in small colonies (Surman pers. obs.). However, identification between subpopulations is difficult, and population estimates have high error due to the overlapping range and remote breeding sites of the northern populations. A southwards movement of breeding distribution has been noted at three key locations; Lowendal Islands (Surman pers comm.), Burrup Peninsula (Nicholson pers comm.), and North West Cape (Greenwell and Dunlop, 2021). Little terns usually forage close to their breeding colonies, typically within 5 km (Bertolero et al., 2005) mainly on small fish (<10 cm in length), but they also eat crustaceans, insects, annelids and molluscs.

Little is known about the breeding and foraging ecology of little terns; however, BIAs for foraging and resting have been identified across the NWMR (Figure 8-2), with a peak in breeding activity between June and October.

### 8.2.1.13 Roseate Tern (Nearshore Seabird)

The roseate tern (*Sterna dougallii*) is listed migratory under the EPBC Act and BC Act. This species is generally sub-tropical in distribution and there are many breeding populations in the NWMR, including Ashmore Reef, Bonaparte Archipelago, Lacepede Islands, Dampier Archipelago and the Lowendal Islands.

The largest roseate tern breeding colony in Western Australia is in the Houtman Abrolhos Islands (Surman and Nicholson, 2009). Large colonies breed within the Lowendal Island and Montebello Island region where there is a stronghold for this species (Higgins and Davies, 1996). A large breeding colony has also been recorded on Goodwyn Island on the Dampier Archipelago (Higgins and Davies, 1996). Peak breeding times across the NWMR are between May to August.

Birds are known to usually move away from breeding colonies following breeding, but their non-breeding range is not well defined (Higgins and Davies, 1996). Many non-breeding roseate terns have been observed at several remote locations in the Kimberley and there are high numbers also recorded at the Eighty Mile Beach Ramsar site (Surman pers obs).

Roseate terns will forage diurnally, up to 60 km from their colonies and always over deeper shelf waters, rather than shallow coastal areas (Surman and Wooller, 2003). Roseate terns will also readily raft (roost in flocks on the sea surface) after foraging episodes (Commonwealth of Australia, 2020).

Roseate terns predominantly eat small pelagic fish taken by plunge diving or surface dipping, typically foraging in dense flocks overflying predatory fishes that push their prey to the surface. Roseate terns may plunge to 20 cm depth.

Breeding BIAs across the NWMR are associated with known breeding colonies on islands, while a resting BIA encompasses Eighty Mile Beach (Figure 8-2).

### 8.2.1.14 Caspian Tern

The Caspian tern (*Hydroprogne caspia*) is listed migratory under the EPBC Act and BC Act. It is moderately common across coastlines of the NWMR and offshore islands (Johnstone et al., 2013).

Breeding occurs as solitary nests or in colonies of up to 52 breeding pairs mainly on islands, including North Turtle Island, Dampier Archipelago including Enderby Island, and Frazer Island, and occasionally on mainland coasts, such as Cape Preston and the Northwest Cape, from late March to early November (Johnstone et al., 2013).

During breeding, adults can forage up to 60 km from the colony during this period to catch fish and meet their elevated energetic requirements at this time (Burger et al., 1996; Balance et al., 2008). The Caspian tern is a diurnal forager, with the length and frequency of foraging trips, as well as relative time spent foraging or attending chicks, changing with food resource availability (Dunlop and McNeill, 2017).

Caspian tern usually forage in shallow, sheltered waters, by plunge-diving for various prey species (Serventy et al., 1971).

Although foraging BIAs occur in the SWMR, no BIAs for this species have been identified in the NWMR.

### 8.2.1.15 Greater Crested Tern

The greater crested tern (*Thalasseus bergii*) is listed migratory under the EPBC Act and BC Act. The species is widespread along coastlines of the NWMR and offshore islands (Johnstone et al., 2013).

Many populations remain sedentary in their breeding areas or disperse locally (del Hoyo et al., 1996), although some are more migratory (Urban et al., 1986). The species breeds in large, dense colonies, or in small groups of fewer than ten pairs amidst colonies of other species, such as silver gull (del Hoyo et al., 1996). Colonies are located on islands, including those as far offshore as Bedout,

Legendre and the Montebello and Lowendal Islands (Johnstone et al., 2013). Adult breeders have shown both high site fidelity and also flexibility in their breeding localities depending upon the spatial and temporal reliability of food resources (Crawford et al., 2002).

Breeding occurs from late March to May (Johnstone et al., 2013). During breeding, greater crested terns conduct short, diurnal foraging trips close (<40 km) to the colony (Surman and Wooller, 2003; Rock et al., 2007; McLeay et al., 2010) with most foraging behaviour displayed by individuals at distances >5 km (McLeay et al., 2010).

The chicks are predominantly fed pelagic fish, a diet that varies among colonies and years (Chiaradia et al., 2002; McLeay et al., 2009). Adults may forage more widely on inshore reef fish (Surman and Wooller, 2003), crustaceans and cephalopods using a plunge diving method (Commonwealth of Australia, 2020a).

Although there is known habitat use in the NWMR, there are no designated BIAs for the greater crested tern in the NWMR.

### 8.2.2 Moderate-occurrence Key Seabird Species

Species descriptions for moderate occurrence key pelagic and nearshore seabird species are summarised in Table 8-2.

**Table 8-2: Species summary for moderate occurrence pelagic and nearshore seabird species within the NWMR**

Species	NMWR presence	Predominant feeding behaviour	Diet
Amsterdam albatross	Year-round low-density presence associated with foraging breeding and non-breeding individuals	Diurnal and nocturnal Dipping, surface-seizing, diving to depths ≥2 m	Squid, fish and crustaceans
Flesh-footed shearwater	Non-breeding, migration: Jun–Aug	Diurnal and nocturnal Pursuit-plunging, surface-seizing	Fish, cephalopods
Soft-plumaged petrel	Non-breeding, migration: Jan–Jun	Diurnal and nocturnal Dipping, surface-seizing	Crustaceans, fish
Streaked shearwater	Non-breeding: Dec–Apr	Diurnal and nocturnal Surface-seizing	Fish, squid, crustacean
Wilson’s storm petrel	Non-breeding: Jun–Dec	Diurnal and nocturnal Dipping, surface-seizing	Crustaceans, fish
Common tern	Non-breeding: Aug–Mar	Diurnal Surface-plunging, dipping	Fish

### 8.2.3 Biologically Important Areas for Seabirds in the NWMR

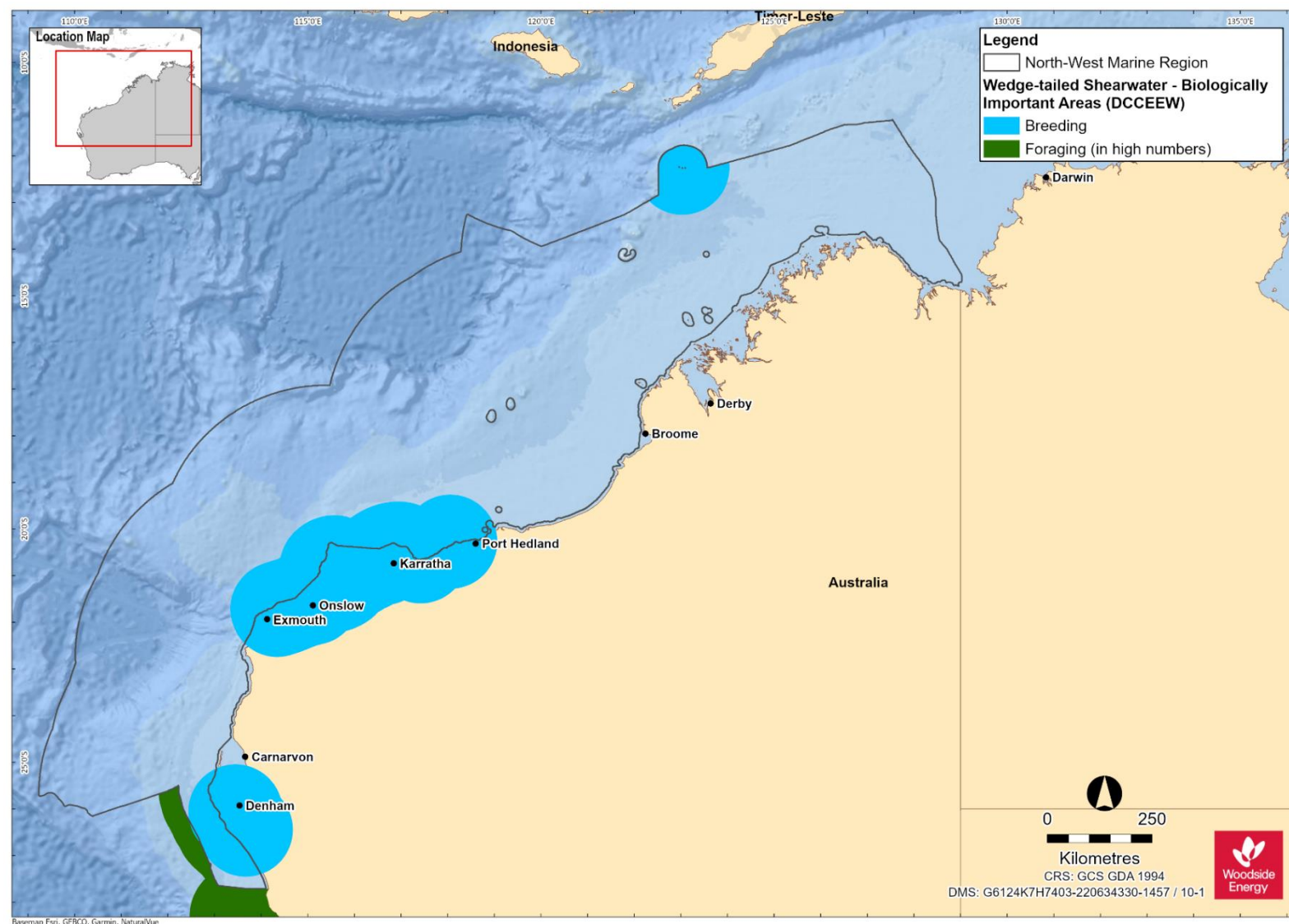
A review of the Australian Marine Spatial Information System (GA, 2024) identified BIAs representing important life cycle stages and behaviours for nine species of seabird in the NWMR. These are presented in Table 8-3.

**Table 8-3: Seabird BIAs within the NWMR (source: AMSIS, 2024 [accessed on 12/08/24])**

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 Bernier 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 nearest BIA to the NWMR	Dampier Archipelago, Montebello, Lowendal and Barrow Island Groups, south Ningaloo and barrier island of Shark Bay	Eighty Mile Beach
White-tailed tropicbird	✓	✓	-	-	-	Rowley Shoals Ashmore Reef	-

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**Figure 8-1: Wedge-tailed shearwater BIAs for the NWMR (data source: DCCEEW, 2024b)**

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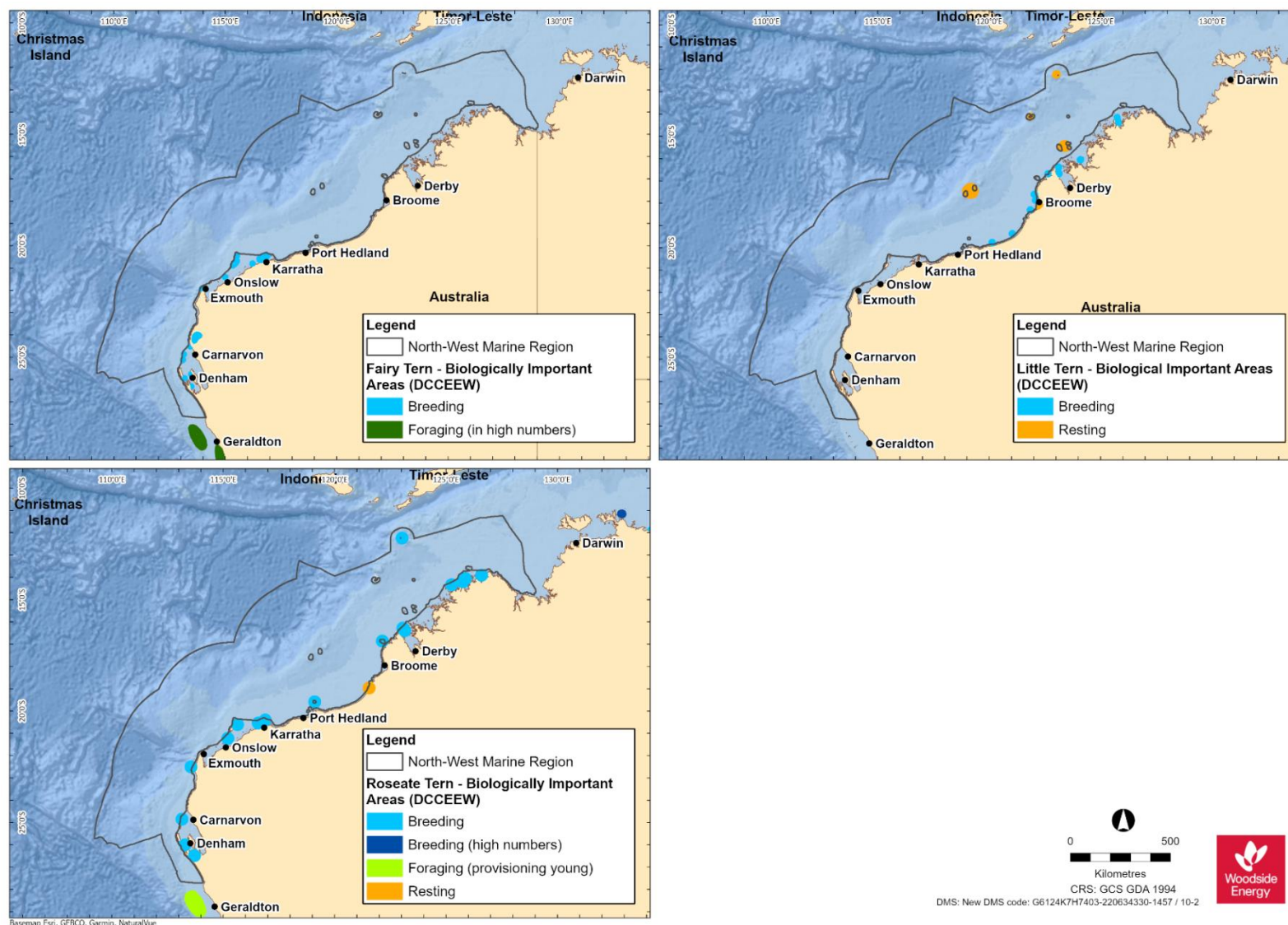
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**Figure 8-2: Tern species BIAs for the NWMR (data source: DCCEEW, 2024b)**

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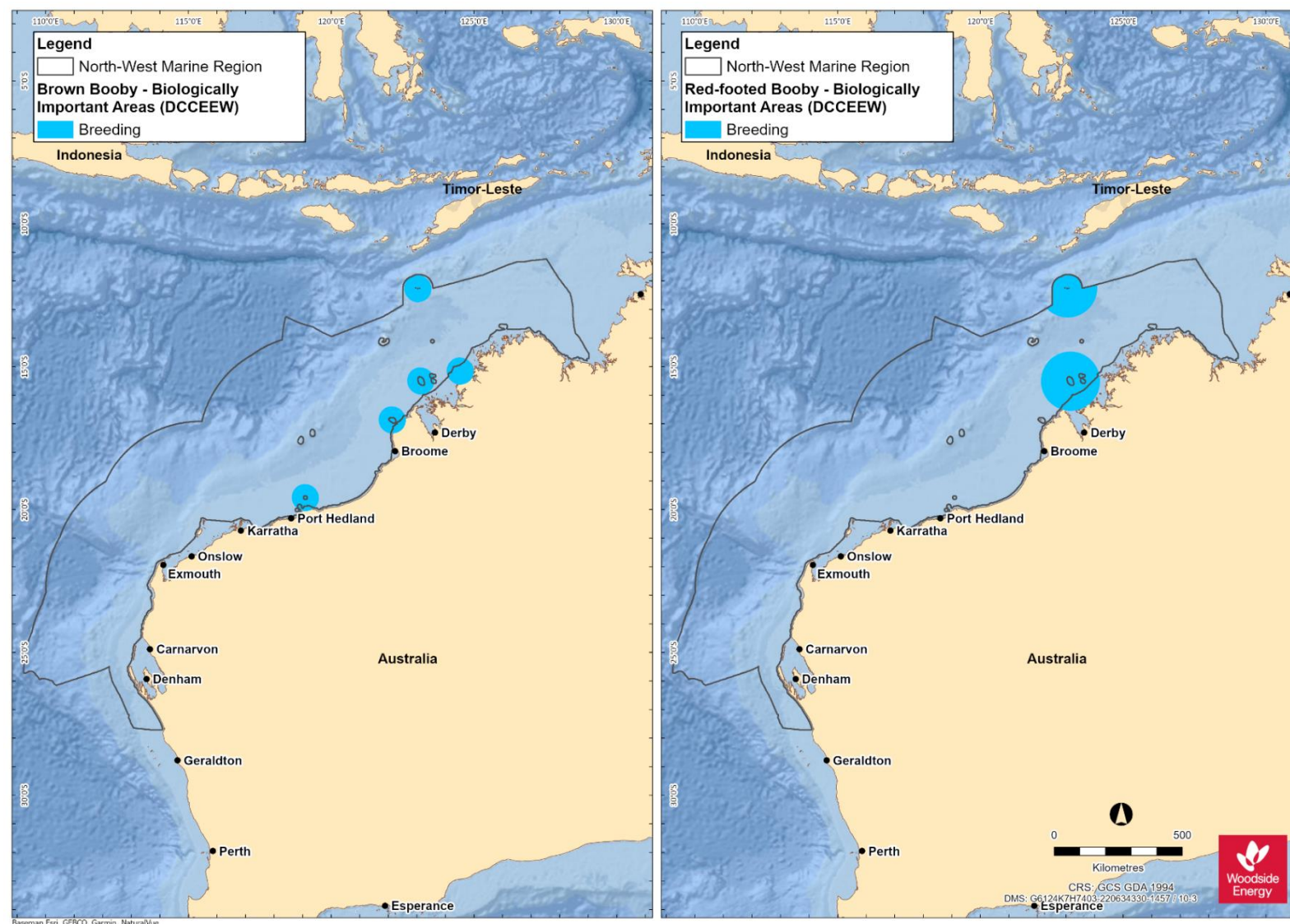
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**Figure 8-3: Red-footed and brown booby BIAs for the NWMR (data source: DCCEEW, 2024b)**

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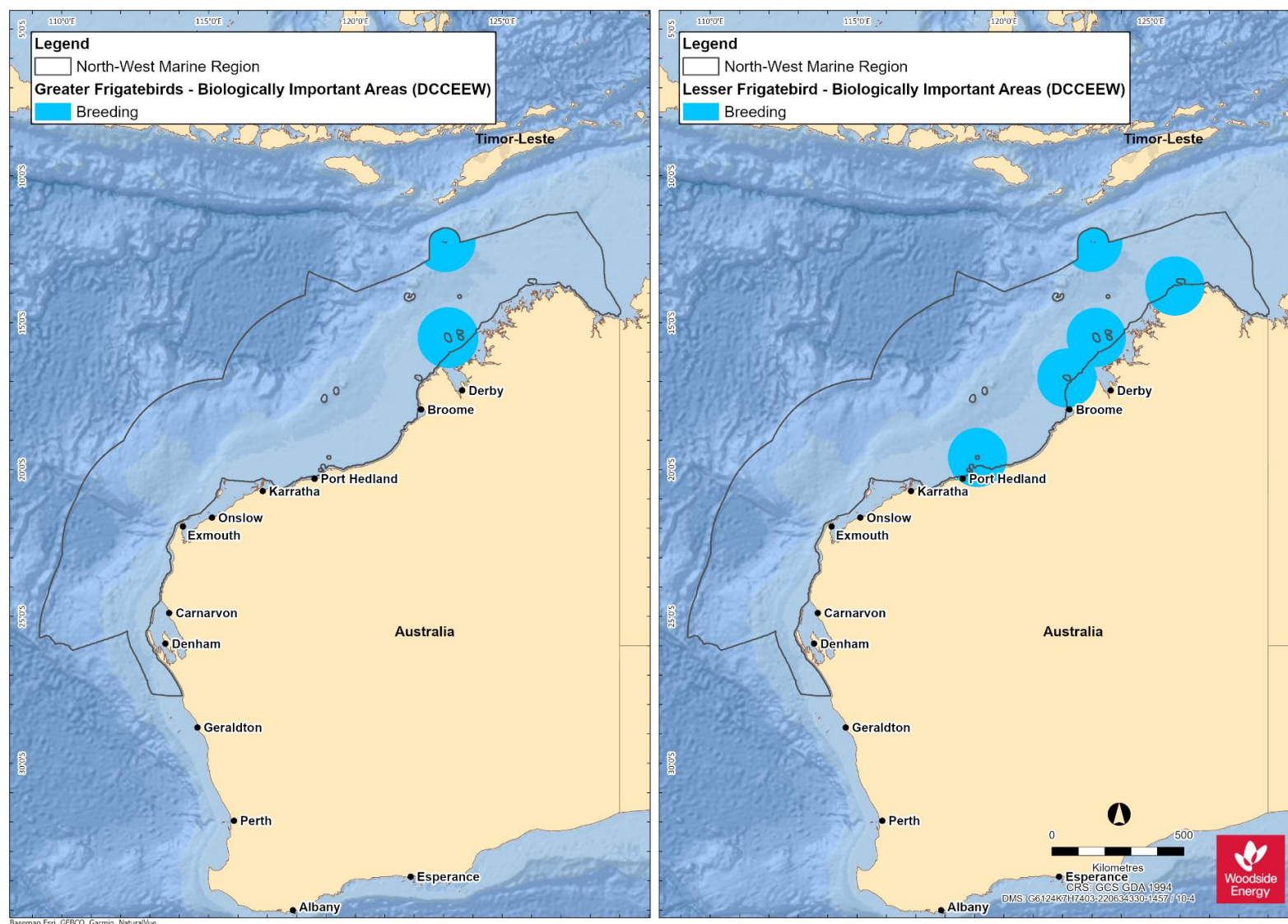
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**Figure 8-4: Greater and lesser frigatebird BIAs for the NWMR (data source: DCCEEW, 2024b)**

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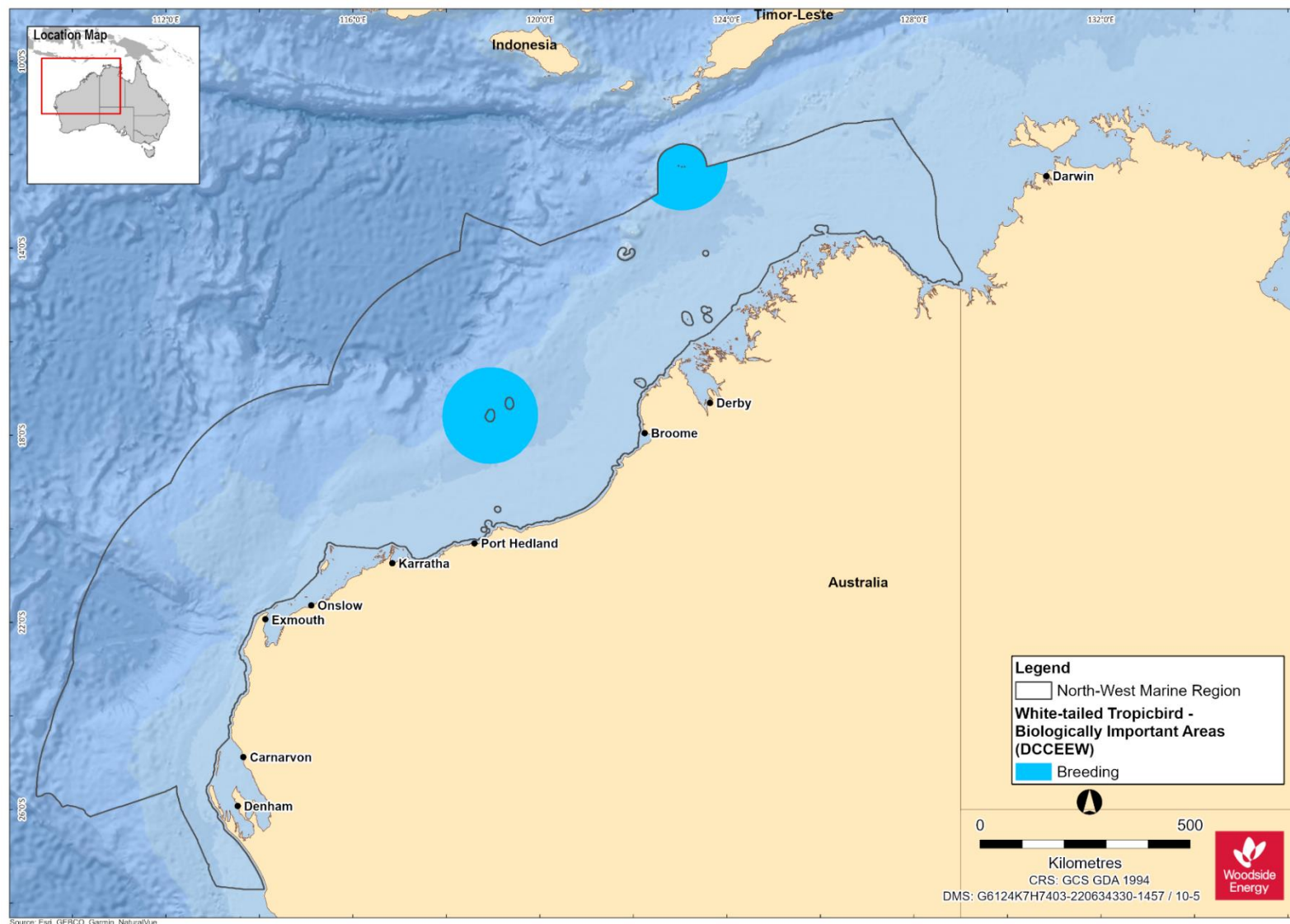
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**Figure 8-5: White-tailed tropicbird BIAs for the NWMR (data source: DCCEEW, 2024b)**

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## 8.2.4 Seabird Summary for NWMR

### 8.2.4.1 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)
- white-tailed tropicbird (breeding).

BIAs for the seabird species are outlined in Table 8-3.

### 8.2.4.2 North West Shelf / Scarborough

The NWS / Scarborough activity area includes biologically important habitat for seven threatened and/or migratory seabird species:

- Australian fairy tern (breeding)
- wedge-tailed shearwater (breeding/foraging)
- lesser frigatebird (breeding/foraging)
- brown booby (breeding/foraging)
- white-tailed tropicbird (breeding)
- little tern (breeding/foraging)
- roseate tern (breeding and resting).

BIAs for the seabird species are outlined in Table 8-3.

### 8.2.4.3 North West Cape

The North West Cape activity area includes biologically important habitat for three threatened and/or migratory seabird species:

- Australian fairy tern (breeding)
- wedge-tailed shearwater (breeding/foraging)
- roseate tern (breeding and resting).

BIAs for the seabird species are listed and described in Table 8-3.

## 8.3 Shorebirds

Shorebirds (migratory and resident species) are generally associated with wetland or coastal environments, and the NWMR hosts 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.

The NWMR is situated within the East Asian–Australian Flyway (EAAF), a geographic region supporting populations of migratory shorebirds throughout their annual cycle. 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). All shorebird species identified undertake annual migrations from breeding sites in the northern hemisphere to more southern non-breeding sites within the EAAF (Bamford et al., 2008).

The EAAF encompasses a large proportion of the NWMR. Migratory shorebirds may migrate through the offshore areas of the NWMR between overwinter grounds in Australia and breeding sites in the northern hemisphere (Bamford et al., 2008). Peak migration occurs between March and May (northern migration) and August and November (southern migration) (Bamford et al., 2008). Migration routes of some migratory shorebird species have been characterised using band recoveries (Minton et al 2006); however, the migration pathways taken between sightings are poorly understood.

Migratory shorebird species are present in Australia during the non-breeding period (December to February), in coastal and inland habitats where adult birds build up the energy reserves necessary to support northward migration and subsequent breeding (Commonwealth of Australia, 2015c). During this time, individuals must maintain an energy intake greater than their energy expenditure to recover from the southward migration, to allow moulting, and to build fat reserves in preparation for the northward migration (Commonwealth of Australia, 2015c). The high energy demands of migration means that both foraging and resting during the non-breeding period are vital for individual fitness and survival.

Due to differences in coastal or wetland habitat requirements between roosting and foraging behaviours, areas used most by migratory shorebirds usually comprise networks of foraging and roosting habitats. Shorebirds move between areas of this network depending on the time of day, availability of resources, levels of disturbance and environmental conditions (Commonwealth of Australia, 2015c). Displacement from one habitat or the other may result in utilisation of sub-optimal habitat and/or increase energetic demands via increased distance between habitats.

Within the EAAF, “a wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird” (Ramsar Convention Bureau, 2000). All shorebirds identified as high occurrence key species occur in shoreline habitats within the NWMR for at least part of their non-breeding season in Australia.

Ashmore Reef is documented as a BIA for migratory shorebirds in the NWMR (DSEWPAC, 2012a).

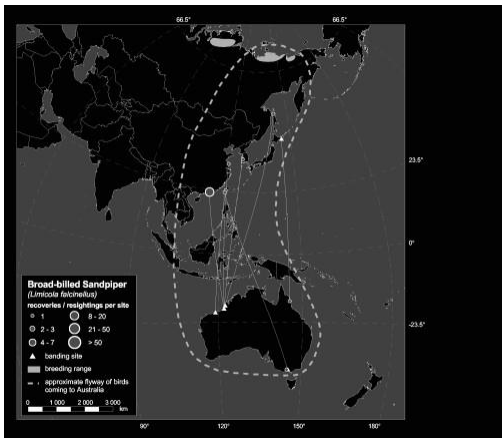
Species descriptions, including information on migration routes where available, for key high and moderate occurrence shorebird species are provided in Table 8-4 and Table 8-5. It should be noted that Minton et al. (2006) did not report on the Pilbara region or Exmouth Gulf, so the migratory pathways may be incompletely depicted.

**Table 8-4: Species summary for high and selected moderate occurrence key shorebird species**

Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Bar-tailed godwit <sup>20</sup>	Widespread around the coast as far east as Derby, with a few scattered records elsewhere in the Kimberley <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>• Roebuck Bay</li> <li>• Eighty Mile Beach</li> </ul>	Sandy beaches, sandbars, spits and also in near-coastal saltmarsh	Tidal estuaries and harbours	Worms, molluscs, crustaceans, insects and some plant material	
Black-tailed godwit	Found in coastal regions of all States and Territories of Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>• Roebuck Bay</li> </ul>	Claypan	Intertidal mudflats or sandflats	Annelids, crustaceans, arachnids, fish eggs and spawn and tadpoles	

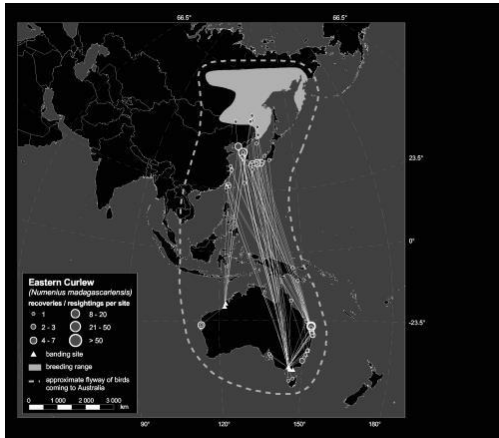
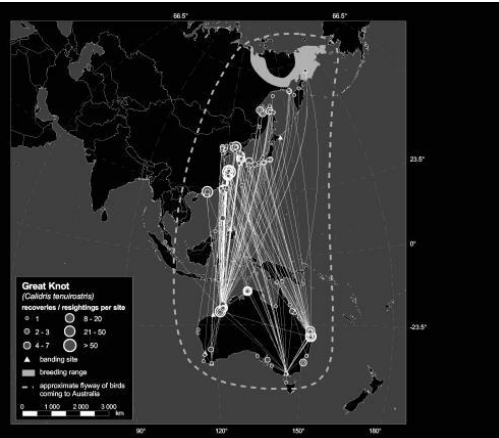
<sup>20</sup> Nominate species *Limosa lapponica*. Subspecies which may occur includes *L. l. menzbieri*, which is listed Critically Endangered under the EPBC Act. Specific information on *L. l. menzbieri* is lacking, but information regarding habitat use and diet for the nominate species is considered applicable.



Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Broad billed sand piper	Regular visitor to coasts of the Pilbara and Kimberley between Onslow and Broome <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Port Hedland Saltworks</li> </ul>	Sheltered sandy, shelly or shingly beaches	Mudflats, mangroves	Worms, including polychaetes, molluscs, crustaceans, insects and seeds	
Common redshank	Records in the Gascoyne region, Coral Bay and Carnarvon Widespread from the Dampier Saltworks to Roebuck Bay and Broome Ashmore Reef	Sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh	Bare mud or sand, or on algal deposits, round the edges of wetlands	Worms, molluscs, crustaceans, arachnids and insects	Not available

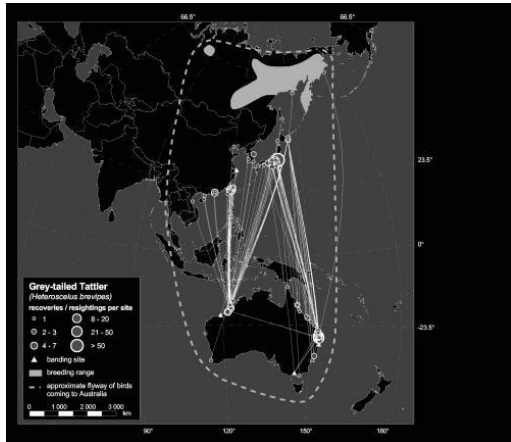
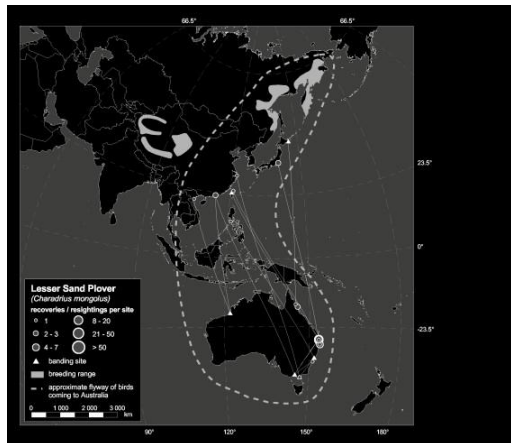
Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Curlw sandpiper	<p>Widespread around coastal and subcoastal plains</p> <p>Non-breeding one year old birds may remain in Australia rather than migrating north</p> <p><i>Internationally important site:</i></p> <ul style="list-style-type: none"> <li>• Dampier Saltworks</li> <li>• Port Hedland Saltworks</li> <li>• Eighty Mile Beach</li> <li>• Roebuck Bay</li> </ul>	Bare dry shingle, shell or sand beaches, sandspits and islets in or around coastal or near-coastal lagoons and other wetlands	Mudflats and nearby shallow water	Worms, molluscs, crustaceans, and insects, as well as seeds	
Marsh sandpiper	<p>Widespread, notable areas include Eighty Mile Beach, Port Hedland Saltworks</p>	Tidal mudflats	Mudflats, marshy vegetation	Molluscs, crustaceans and insects	

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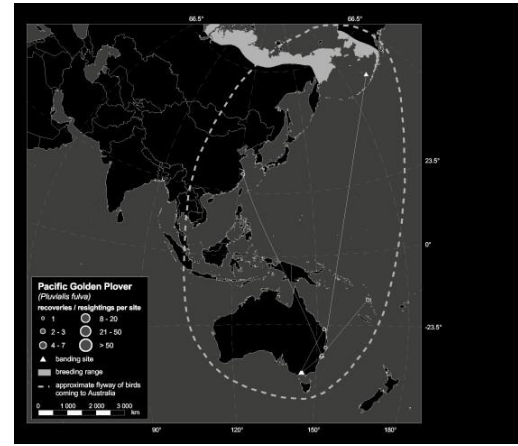
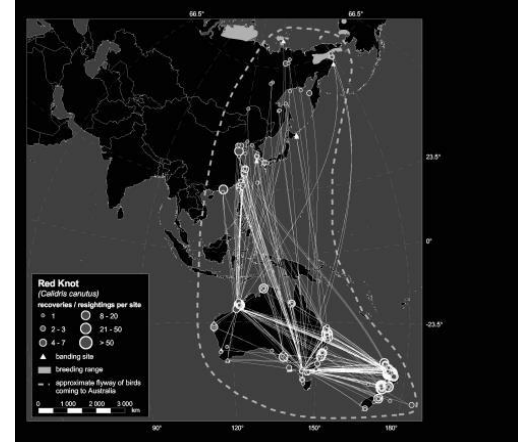
Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Eastern curlew	Continuous distribution from Barrow Island and Dampier Archipelago through the Kimberley region  <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Sandy spits, sandbars and islets, beaches near the high-water mark, coastal vegetation including low saltmarsh or mangroves	Soft sheltered intertidal sandflats or mudflats, saltflats and saltmarsh, in proximity to mangroves, among rubble on coral reefs, and beaches near the tideline	Crustaceans small molluscs, insects	
Great knot	Common on the coasts of the Pilbara and Kimberley, from the Dampier Archipelago to the Northern Territory border  <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Roosts in large groups in open areas, often at the water's edge or in shallow water close to feeding grounds	Sheltered coastal habitats with large intertidal mudflats or sandflats	Bivalves, gastropods, crustaceans and other invertebrates	

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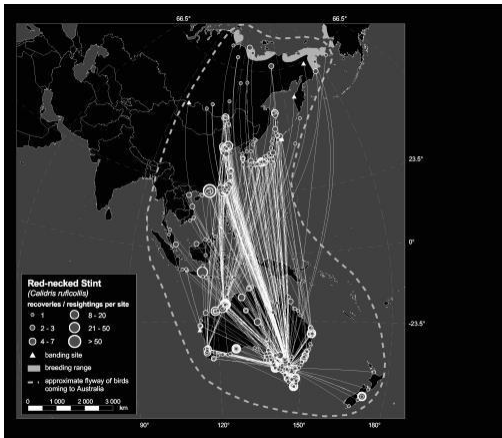
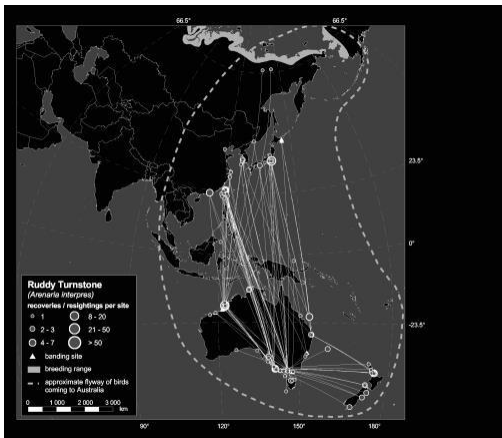
Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Greater sand plover	Widespread between North West Cape and Roebuck Bay <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Sand-spits and banks on beaches or in tidal lagoons	Surface of wet sand or mud on open intertidal flats of sheltered embayments, lagoons or estuaries	Molluscs, worms, crustaceans and insects	
Grey plover	Widespread in coastal areas across Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Sandy habitats including unvegetated sandbanks or sand-spits, sheltered beaches, estuaries or lagoons	Large areas of exposed mudflats and beaches of sheltered coastal shores	Molluscs, insects and their larvae, crustaceans and polychaete worms	

Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Grey-tailed tattler	Widespread from Houtman Abrolhos and the mainland adjacent to the Kimberley <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Barrow Island</li> <li>Roebuck Bay</li> <li>Eighty Mile Beach</li> <li>Lacepede Islands</li> </ul>	Branches of mangroves, snags or driftwood	Shallow water on hard intertidal substrates, such as reefs and rock platforms, in rock pools and among rocks and coral rubble	Polychaetes, molluscs, crustaceans, insects and, occasionally, fish	
Lesser Sand Plover	<i>Widespread, internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> <li>Broome</li> <li>Port Hedland Saltworks</li> </ul>	Beaches, banks, spits of sand or shell, occasionally rocky spits, islets and reefs	Exposed intertidal sandflats and mudflats of beaches or estuaries, occasionally shallow water in saltworks	Molluscs, worms, crustaceans and insects	

Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration <i>From Minton et al. (2006)</i>
Oriental plover	Most records are along the north-western coast, between Exmouth Gulf and Derby in Western Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>• Dampier Saltworks</li> <li>• Port Hedland Saltworks</li> <li>• Eighty Mile Beach</li> <li>• Roebuck Bay</li> </ul>	Soft wet mud or in shallow water of beaches and tidal mudflats	Short grass, hard stony bare ground, mudflats or among beach-cast seaweed on beaches	Insects, including termites, beetles, grasshoppers, crickets	Not available
Oriental pratincole	Widespread along the coasts of the Pilbara and Kimberley <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>• Eighty Mile Beach</li> <li>• Roebuck Plains</li> </ul>	Bare areas such as claypans or areas with low vegetation, such as saltmarsh	Open plains, floodplains or short grassland, artificial wetlands (saltworks), beaches, mudflats and islands, or around coastal lagoons Usually feeds aerially, at heights varying from just above the ground up to 300 m	Insects, including dragonflies, cicadas, beetles, moths, ants, termites, locusts, grasshoppers, flies, bees and wasps	Not available

Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Pacific golden plover	Widespread along the coasts of the Pilbara and Kimberley <i>Nationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> </ul>	Sandy beaches and spits, rocky points, islets, exposed reef, occasionally mangrove and saltmarsh vegetation, beachcast seaweed, levee banks and saltwork evaporation ponds	Sandy, muddy and rocky shores, sheltered estuaries and lagoons, occasionally saltmarsh, mangrove or pasture	Molluscs, polychaete worms, insects, insect larvae, spiders, crustaceans, occasionally seeds, leaves, lizards, bird eggs and fish	
Red knot	Large numbers regularly recorded in north-west Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Sandy beaches, spits and islets, and mudflats close to feeding grounds	Soft substrate near the water edge including intertidal mudflats and sandflats exposed by low tide	Worms, bivalves, gastropods, crustaceans and echinoderms	

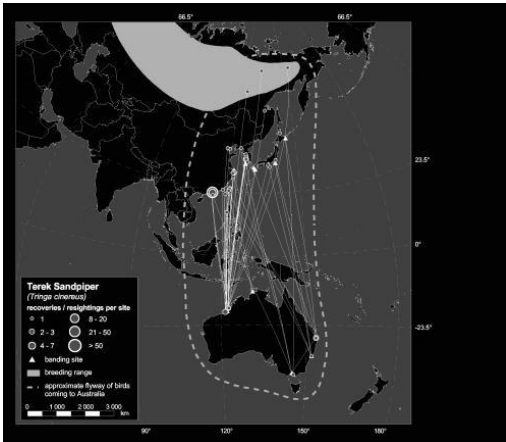
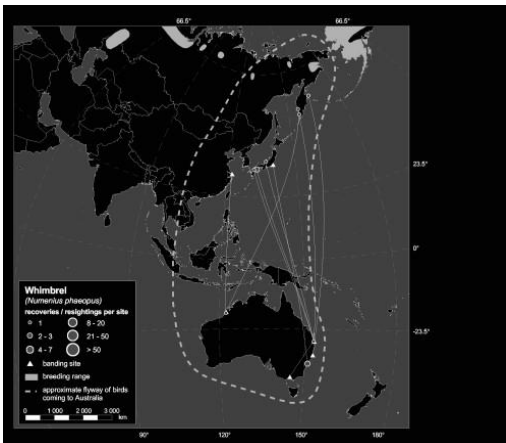


Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Red-necked stint	Widespread in coastal areas across Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Barrow Island</li> <li>Port Hedland Saltworks</li> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Sheltered beaches, spits, banks or islets of sand, mud, coral or shingle, occasionally in saltmarsh or other vegetation	Feed in dense flocks on bare wet mud such as intertidal mudflats or sandflats, or in very shallow water	Marine worms, molluscs, snails and slugs, shrimps, spiders, beetles, flies and ants	
Ruddy turnstone	Found in most coastal regions across Australia <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Barrow Island</li> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> <li>Lacepede Islands</li> </ul>	Beaches above the tideline, among rocks, shells, beachcast seaweed or other debris	Between lower supralittoral and lower littoral zones of foreshores  Often forage among banks of stranded seaweed or other tide-wrack  Occasionally forage on exposed rocky platforms, coral reefs and mudflats	Insects, worms, crustaceans, molluscs, and spiders  Occasionally been known to eat fish, birds' eggs and carrion and human food scraps	
Ruff	Periodically recorded in Port Hedland, Kununurra and the Argyle Diamond Mine	Wetlands with exposed mudflats and short dense vegetation	Exposed mudflats with shallow water and dry mud	Moss, plant fibre, seeds, annelid worms, molluscs, crustaceans, spiders, insects, fish and amphibians	Not available

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Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Sanderling	Occur most of the NWMR coast as far east as Derby <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	Bare sand high on the beach clumps of washed-up kelp coastal dunes rocky reefs and ledge	Open sandy beaches exposed to open sea-swell, exposed sandbars and spits and shingle banks, where they forage in the wave-wash zone and among rotting seaweed	Plants, seeds, worms, crustaceans, spiders, insects. Occasionally on medusae, fish, larger molluscs and crustaceans taken as carrion	
Sharp-tailed sandpiper	Widespread from Cape Arid to Carnarvon, around coastal and subcoastal plains of Pilbara to Kimberley <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Port Hedland Saltworks</li> <li>Eighty Mile Beach</li> </ul>	Edges of wetlands, on wet open mud or sand, in shallow water, or in short sparse vegetation, such as grass or saltmarsh	Edge of the water of wetlands or intertidal mudflats, either on bare wet mud or sand, or in shallow water  Also forage among inundated vegetation of saltmarsh, grass or sedges	Seeds, worms, molluscs, crustaceans and insects	

Species	Presence in NWMR	Roosting Habitat	Foraging Habitat	Diet	Migration From Minton et al. (2006)
Terek sandpiper	The species is widespread in the Pilbara and Kimberley, from Dampier to Wyndham, with occasional records around Shark Bay <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Eighty Mile Beach</li> <li>Roebuck Bay</li> </ul>	In or among mangroves, may perch in branches or roots up to 2 m from the ground, or in shade beneath	Soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons	Crustaceans, insects, seeds, molluscs and arachnids	
Whimbrel	Widespread from Carnarvon to the north-east Kimberley Primarily coastal distribution. There are also scattered inland records of Whimbrels in all regions <i>Internationally important site:</i> <ul style="list-style-type: none"> <li>Roebuck Bay</li> </ul>	Regularly roost in mangroves and other structures flooded at high tide May also roost on ground of muddy, sandy or rocky beaches; rocky islets and coral cays	Intertidal mudflats, muddy banks of estuaries and in coastal lagoons, open unvegetated areas or among mangroves Occasionally on sandy beaches or among rocks	Annelids, crustaceans and, rarely, vertebrates (e.g. small fish, little tern chicks)	

**Table 8-5: Species summary for moderate occurrence key shorebird species**

Species	NWMR Presence	Roosting Habitat	Foraging Habitat	Diet
Asian dowitcher	Regular visitor to the north-west between Port Hedland and Broome <i>Internationally important sites:</i> <ul style="list-style-type: none"> <li>• Roebuck Bay</li> <li>• Port Hedland Saltworks</li> </ul>	Coastal lagoons, estuaries and tidal creeks	Intertidal mud flats	Polychaete worms and larvae, also insect larvae and molluscs
Australian painted snipe	Widespread in low numbers	Shallow freshwater wetlands with bare mud and dense canopy cover	Dense vegetation cover, occasionally mudflats and grassland	Vegetation, seeds, insects, worms, molluscs and crustaceans
Little curlew	Widespread with distribution concentrated along the northern coast from Port Hedland during the non-breeding season. <i>Internationally important sites:</i> <ul style="list-style-type: none"> <li>• Roebuck Plains</li> <li>• Roebuck Bay</li> <li>• Anna Plains</li> <li>• Derby Sewage Ponds</li> <li>• Parry Floodplain</li> </ul>	Short, dry grassland, and occasionally dry saltmarshes, coastal swamps, mudflats or sandflats in estuaries, or on the beaches of sheltered coasts	Short, dry grassland and sedgeland with shallow freshwater pools or seasonal inundation	Insects, seeds and berries
Common greenshank	Occurs in all types of wetlands and has the widest distribution of any shorebird in Australia <i>Internationally important sites:</i> <ul style="list-style-type: none"> <li>• Eighty Mile Beach</li> <li>• Roebuck Bay</li> </ul>	Wetlands, shallow pools and puddles, or slightly elevated on rocks, sandbanks or small muddy islets	Edges of wetlands, in soft mud on mudflats, in channels, among pneumatophores of mangroves or other sparse, emergent or fringing vegetation, such as sedges or saltmarsh	Molluscs, crustaceans, insects, and occasionally fish and frogs
Common sandpiper	Widespread in low numbers	Rocks or in roots or branches of vegetation, especially mangroves	Bare soft mud at the edges of wetlands	Molluscs, crustaceans and insects
Pectoral sandpiper	Low numbers recorded across the Gascoyne, Pilbara and Kimberley regions	Coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands	Bare soft mud at the edges of wetlands	Algae, seeds, crustaceans, arachnids and insects

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Species	NWMR Presence	Roosting Habitat	Foraging Habitat	Diet
Wood sandpiper	NWMR supports largest numbers in Australia. Notable areas include Parry floodplain, Shark Bay	Low trees, grassy hillocks	Bare soft mud at the edges of wetlands	Insects and molluscs
Long-toed stint	Widespread along the coasts of the Pilbara and Kimberley	Shallow inland wetlands	Wetland or islets with wet mud or shallow water and short vegetation	Seeds, molluscs, crustaceans, insects, occasionally algae
Pin-tailed snipe	Recorded in the Pilbara, Port Hedland, Myaree Pool, Maitland River and near Karratha	Wide variety of wetland habitats including flooded paddy-fields, wet grasslands, seepage swamps and marshland	Muddy shorelines of swamps and along streams	Molluscs, adult and larval insects, earthworms and occasionally crustaceans, seeds and other plant matter
Swinhoe's snipe	Recorded in the Pilbara, Kimberley, Mount Goldsworth, Mount Blaize and near the Mitchell Plateau	Grasses and rushes around the edge of fresh and brackish marshes	Grasses and rushes near the water edge, in addition to hummocks or on mudflats around seepage areas	Earthworms, adult and larval insects

## 8.4 Other Marine Birds

Species descriptions for high occurrence key other marine bird species are summarised in Table 8-6.

**Table 8-6: Species summary for high occurrence key other marine bird species**

Species	NWMR Presence	Predominant Feeding Behaviour	Diet
Fork-tailed swift	<i>Non-breeding:</i> Oct–Apr Widespread in coastal areas as far north as Carnarvon, including some on nearshore and offshore islands Scattered along the Pilbara coast to the east Kimberley region	Aerial forager, flying anywhere from 1 m to 300 m above the ground to forage Typically feed in flocks ranging from 10 to 1000 birds	Insectivorous
Osprey	<i>Breeding:</i> April to February, though depends on latitude. NWMR individuals breeding early in season compared to SWMR <i>Non-breeding:</i> remain in breeding territories Continuous distribution of the species around the coast except for a possible gap at Eighty Mile Beach	Hover momentarily and then dive down, sometimes in stages, before snatching prey from near the surface with the feet or by plunging into the water feet first	Fish, especially mullet where available Rarely take molluscs, crustaceans, insects, reptiles, birds and mammals

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## 9. THREATENED AND MIGRATORY SPECIES SEASONAL PRESENCE

Seasonal sensitivity for key threatened and migratory species in the NWMR presented in Table 9-1. The timing presented is displayed as a broad representation for the NWMR, with location specific seasonality presented within EPs.

**Table 9-1: Seasonal sensitivity of key threatened and migratory species in the NWMR**

Species	January	February	March	April	May	June	July	August	September	October	November	December
<b>Fishes, Sharks and Rays</b>												
Whale shark—foraging (northward from Ningaloo) <sup>1</sup>												
Whale shark—foraging (high density prey, Ningaloo Reef) <sup>2</sup>												
Dwarf sawfish—reproduction <sup>3</sup>												
Dwarf sawfish—foraging <sup>4</sup>												
Large-tooth (freshwater) sawfish—reproduction (pupping) <sup>5</sup>												
Large-tooth (freshwater) sawfish—foraging												
Green sawfish (reproduction)												
Green sawfish (foraging)												
<b>Marine Reptiles—Marine Turtle Nesting [note: hatchling emergence is generally six to eight weeks post-nesting activity]</b>												
<b>Green Turtle</b>												
Ashmore Reef Stock (G-AR) <sup>6</sup>												
Scott Reef-Browse Island Stock (G-ScBr) <sup>7</sup>												
NWS Stock (G-NWS) <sup>8</sup>												
<b>Hawksbill Turtle</b>												
Western Australia Stock (H-WA) <sup>9</sup>												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
<b>Flatback Turtle</b>												
Cape Domett Stock (F-CD) <sup>10</sup>												
South-west Kimberley Stock (F-swKim) <sup>11</sup>												
Pilbara Stock (F-Pil) <sup>12</sup>												
Unknown genetic stock Kimberley, Western Australia <sup>13</sup>												
<b>Loggerhead Turtle</b>												
Western Australia Stock (LH-WA) <sup>14</sup>												
<b>Cetaceans</b>												
Fin whale <sup>15</sup>												
Humpback whale—northern migration <sup>16</sup>												
Humpback whale—southern migration <sup>17</sup>												
Humpback whale—reproduction (nursing, Kimberley coast) <sup>18</sup>												
Omura's whale <sup>19</sup>												
Pygmy blue whale—northern migration <sup>20</sup>												
Pygmy blue whale—southern migration <sup>21</sup>												
Southern right whale (calving/presence in NWMR) <sup>22</sup>												
<b>Seabirds (high occurrence seabirds with designated BIAs)</b>												
Wedge-tailed shearwater—breeding / foraging *fledgling emergence (first two weeks of April)				*								
Australian lesser noddy NWMR presence in non-breeding period *breeding—Ashmore Reef and Abrolhos, may forage in NWMR								*	*	*	*	*
Common noddy—breeding												

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Species	January	February	March	April	May	June	July	August	September	October	November	December
Bridled tern—breeding and foraging												
Great frigatebird—breeding / foraging *possibly present in NWMR in non-breeding and foraging in breeding season	*	*	*	*	*	*	*	*	*			
Lesser frigatebird—breeding / foraging *possibly present in NWMR in non-breeding and foraging in breeding season	*	*	*	*	*	*	*	*	*			
Brown booby—presence in NWMR (breeding / foraging) Present NWMR year-round (breeding at Ashmore Reef, Adele Island, Lacepedes between Jan-Mar (protracted through to Oct at Ashmore Reef)												
Red-footed booby—presence in NWMR (breeding / foraging) Breed at Ashmore Reef and Adele Island, recorded breeding year-round at Ashmore Reef												
Little tern—breeding / foraging maybe present in NWMR outside breeding season—foraging and resting												
Roseate tern—breeding												
Caspian tern—breeding Dampier Archipelago and North West Cape												
Greater crested tern												
White-tailed and red-tailed tropicbird—breeding largest breeding populations on Christmas Island												
	Peak period (reliable / predictable)											
	Species present / undertaking biologically important behaviour in the NWMR											
	Species not likely to be present or undertaking biologically important behaviour in NWMR											

<sup>1</sup>Whale shark foraging northward from Ningaloo in Spring (DCCEEW, 2024b<sup>15</sup>). Migration along the north coast of WA also known to occur between July–November (TSSC, 2015d). Potential presence of whale sharks year-round at Ningaloo (Norman et al., 2017).

<sup>2</sup>Whale shark foraging (high density prey) Ningaloo April–June, Autumn (DCCEEW, 2024b<sup>15</sup>). March–July (TSSC, 2015d). Potential presence of whale sharks year-round at Ningaloo (Norman et al., 2017).

<sup>3</sup>Dwarf sawfish reproduction—potential to occur in all seasons (DCCEEW, 2024b<sup>15</sup>).

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<sup>4</sup>Dwarf sawfish foraging—potential to occur in all seasons (DCCEEW, 2024b<sup>15</sup>).

<sup>5</sup>Large-tooth (freshwater) sawfish pupping occurs from January to May (DCCEEW, 2024b<sup>15</sup>).

<sup>6</sup>Green turtle nesting Ashmore Reef Stock—year-round (peak: December–January) (CoA, 2017).

<sup>7</sup>Green turtle nesting Scott Reef–Browse Island Stock November–March (CoA, 2017).

<sup>8</sup>Green turtle nesting NWS Stock November–March (CoA, 2017).

<sup>9</sup>Hawksbill turtle nesting Western Australia Stock October–February (CoA, 2017).

<sup>10</sup>Flatback turtle nesting Cape Domett Stock—year-round (peak July–September) (CoA, 2017).

<sup>11</sup>Flatback turtle nesting South-west Kimberley Stock—October–March (CoA, 2017).

<sup>12</sup>Flatback turtle nesting Pilbara Stock—October–March (CoA, 2017).

<sup>13</sup>Unknown stock nesting Kimberley May–July (CoA, 2017).

<sup>14</sup>Loggerhead turtle nesting Western Australia stock November–May.

<sup>15</sup>Fin whale presence NWMR May–October (Aulich et al., 2022). Migrating north from Cape Leewuin (SWMR) May–October. Present offshore Dampier August–October (Aulich et al., 2022).

<sup>16</sup>Humpback whale northern migration. Range June–September (DCCEEW, 2024b<sup>15</sup>; TSSC, 2015b; DSEWPac, 2012a). Peak July–August (Salgado Kent et al., 2012).

<sup>17</sup>Humpback whale southern migration. Range July–November. Peak August–October. (TSSC, 2015b; Irvine and Salgado Kent, 2019; Salgado Kent et al., 2012; DSEWPac, 2012a)

<sup>18</sup>Humpback whale—reproduction (nursing, Kimberley coast) Winter (DCCEEW, 2024b<sup>15</sup>). Breeding August–September (DSEWPac, 2012a; TSSC, 2015b). Calves present off Kimberley in October (Thums et al., 2018).

<sup>2</sup>Pygmy blue whale northern migration April–August (DCCEEW, 2024b<sup>15</sup>; DSEWPac, 2012a; McCauley et al., 2018; CoA, 2015a). Peak April–July (Thums et al., 2022) refers to Western Australia from the Perth Canyon (April/May) to the North West Shelf (June/July).

<sup>21</sup>Pygmy blue whale southern migration October–December, possibly into January (DCCEEW, 2024b<sup>15</sup>; DSEWPac, 2012a citing (McCauley and Jenner, 2010; McCauley et al., 2018; Thums et al., 2022; CoA, 2015a). Peak November–December (Thums et al., 2022).

<sup>22</sup>Southern right whale calving and migratory presence in Exmouth Gulf (NWMR) June to September with peak months July and August (DCCEEW, 2024a) All seabird seasonality information derived from BIA metadata, scientific publications and expert opinion (Worley, 2024).

<sup>19</sup>Limited data; however, sightings reported year-round (Cerchio et al., 2019).



## 10. 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 criteria of:

- 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, 12 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 10-1, Table 10-2 and Table 10-3, and Figure 10-1, Figure 10-2 and Figure 10-3.

Table 10-1: KEFs within the NWMR

KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Carbonate bank and terrace system of the Sahul Shelf</b>	✓	-	-	<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.</p> <p>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 km<sup>2</sup> 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 et al., 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>
<b>Pinnacles of the Bonaparte Basin</b>	✓	-	-	<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 NWMR and NMR (refer Table 10-1 and Table 10-3)</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 &gt;520 km<sup>2</sup> 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.</p> <p>aggregations of planktivorous and predatory fish, seabirds, and foraging turtles (DSEWPAC, 2012a, 2012c).</p>

KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Ashmore Reef and Cartier Island and surrounding Commonwealth waters</b>	✓	-	-	High productivity, biodiversity and aggregation of marine life that apply to both the benthic and pelagic habitats within the feature	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 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 <sup>2</sup> . 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.
<b>Seringapatam Reef and the Commonwealth waters in the Scott Reef complex</b>	✓	-	-	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).

KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Continental slope demersal fish communities</b>	✓	✓	✓	High biodiversity of demersal fish assemblages, including high levels of endemism	<p>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 et al., 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 et al., 2005), making it the second richest area for demersal fishes throughout the whole continental slope.</p> <p>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 et al., 2007). Higher-order consumers may include carnivorous fishes, deepwater sharks, large squid, and toothed whales (Brewer et al., 2007). Pelagic production is phytoplankton-based, with hot spots around oceanic reefs and islands (Brewer et al., 2007).</p>

KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Ancient coastline at 125 m depth contour</b>	✓	✓	✓	<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 depth worldwide (Falkner et al., 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 et al., 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 et al., 2009).</p>
<b>Canyons linking the Argo Abyssal Plain and Scott Plateau</b>	-	✓	-	<p>Facilitates nutrient upwelling, creating enhanced productivity and encouraging diverse aggregations of marine life</p> <p>Likely to be important due to their historical association with sperm whale aggregations</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 et al., 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 et al., 2007).</p>

KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Glomar Shoal</b>	-	✓	-	An area of high productivity and aggregations of marine life including commercial and recreational fish species	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 et al., 2009). Studies by Abdul Wahab et al. (2018) found a number of hard coral and sponge species in water depths less than 40 m. One hundred and seventy different species of fishes were detected with greatest species richness and abundance in shallow habitats (Abdul Wahab et al., 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 et al., 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.
<b>Mermaid Reef and Commonwealth waters surrounding Rowley Shoals</b>	-	✓	-	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 is adjacent to the three nautical mile State waters limit surrounding Clerke Reef and Imperieuse Reef, and include the Mermaid Reef Marine Park as described in Section 11.  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 et al., 1994).

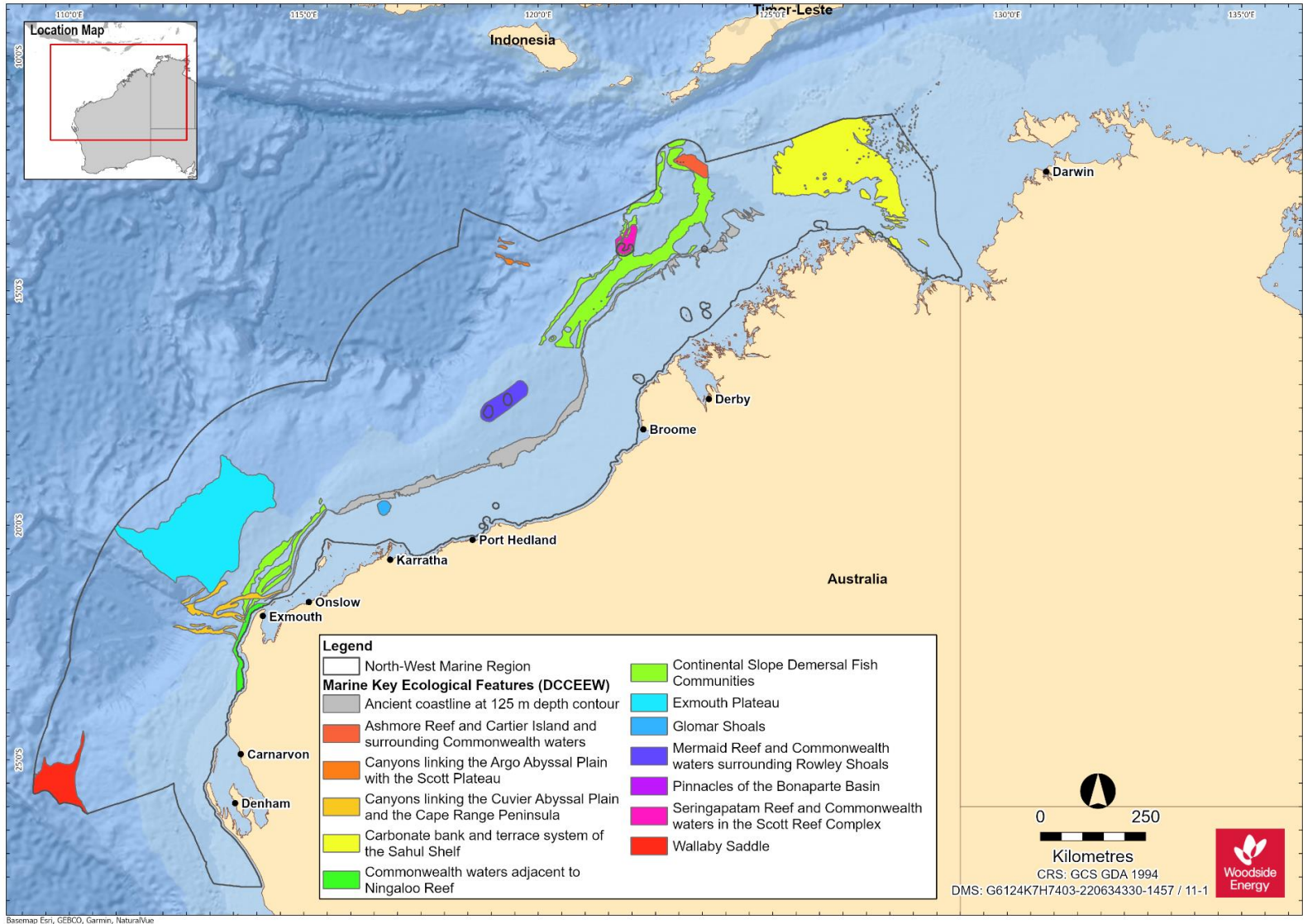
KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Exmouth Plateau</b>	-	✓	✓	<p>Unique seafloor feature with ecological properties of regional significance, which apply to both benthic and pelagic habitats</p> <p>Likely to be an important area of biodiversity as it provides an extended area offshore for communities adapted to depths of approximately 1000 m</p>	<p>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 deepwater 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 et al., 2007). Satellite observations suggest that productivity is enhanced along the northern and southern boundaries of the plateau (Brewer et al., 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 et al., 2007). Protected and migratory species are also known to pass through the region, including whale sharks and cetaceans.</p>
<b>Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula</b>	-	-	✓	<p>Unique seafloor feature with ecological properties of regional significance</p> <p>The feature creates an enhanced productivity environment, attracting aggregations of fish and higher-order consumers such as large predatory fish, sharks, toothed whales and dolphins</p>	<p>The canyons are associated with upwelling as they channel deep water from the Cuvier Abyssal Plain up onto the slope, Exmouth Plateau and Ningaloo Reef. 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.</p>
<b>Commonwealth waters adjacent to Ningaloo Reef</b>	-	-	✓	<p>High productivity and diverse aggregations of marine life</p> <p>The Commonwealth waters adjacent to Ningaloo Reef and associated canyons and plateaus are interconnected and support the high productivity and species richness of Ningaloo Reef; Ningaloo Reef is globally significant as it is the only extensive coral reef in the world that fringes the west coast of a continent</p>	<p>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).</p> <p>The spatial boundary of this KEF, as defined in the Australian Marine Spatial Information System, is defined as the waters contained in the existing Ningaloo AMP provided in Section 11.</p>

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KEF Name	Woodside Activity Area			Values <sup>1</sup>	Description
	Browse	NWS/S	NW Cape		
<b>Wallaby Saddle</b>	-	-	✓	<p>High productivity and aggregations of marine life: Representing almost the entire area of this type of geomorphic feature in the NWMR</p> <p>It is a unique habitat that neither occurs anywhere else nearby (within hundreds of kilometres) nor with as large an area (Falkner et al., 2009)</p>	<p>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).</p>

<sup>1</sup>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 10-1: Key ecological features (EFs) within the NWMR (data source: DCCEEW, 2024d)**

Table 10-2: KEFs within the SWMR

KEF Name	Values <sup>1</sup>	Description
<b>Albany Canyons group and adjacent shelf break</b>	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.
<b>Ancient coastline at 90-120 m depth</b>	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.
<b>Cape Mentelle upwelling</b>	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.
<b>Commonwealth marine environment surrounding the Houtman Abrolhos Islands (and adjacent shelf break)</b>	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.
<b>Commonwealth marine environment surrounding the Recherche Archipelago</b>	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.

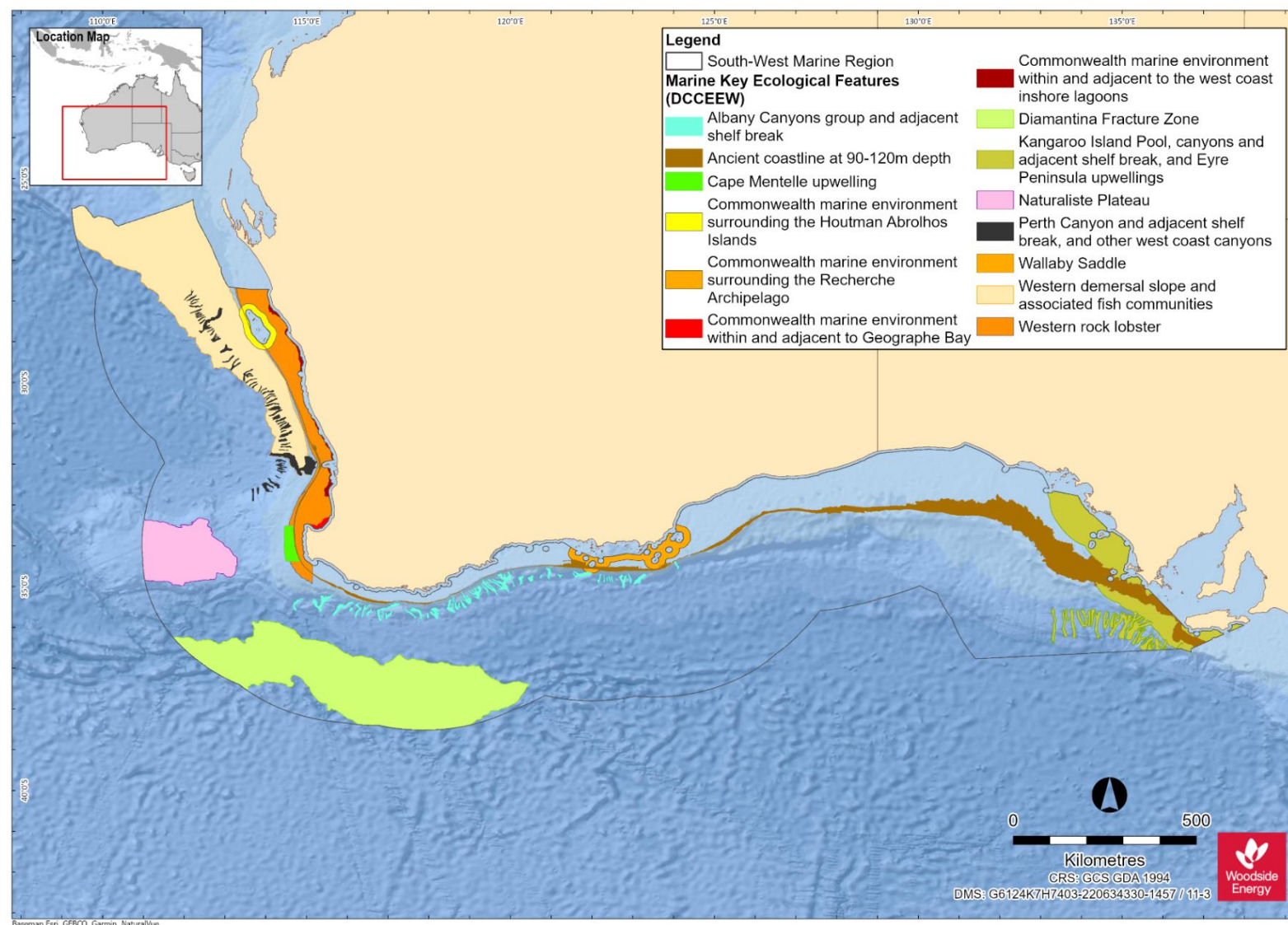
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KEF Name	Values <sup>1</sup>	Description
<b>Commonwealth marine environment within and adjacent to the west-coast inshore lagoons</b>	High productivity and aggregations of marine life within benthic and pelagic habitats Important for benthic productivity 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.
<b>Commonwealth marine environment within and adjacent to Geographe Bay</b>	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 et al., 2007). It is also an important resting area for migratory humpback whales.
<b>Diamantina Fracture Zone</b>	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.
<b>Naturaliste Plateau</b>	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.
<b>Perth Canyon and adjacent shelf break, and other west-coast canyons</b>	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.

KEF Name	Values <sup>1</sup>	Description
<b>Western demersal slope and associated fish communities of the Central Western Province</b>	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.
<b>Western rock lobster</b>	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.

<sup>1</sup>Values description sourced from Marine bioregional plan for the South-west Marine Region (DSEWPAC, 2012b) and the DAWE SPRAT database.





**Figure 10-2: KEFs within the SWMR (data source: DCCEEW, 2024d)**

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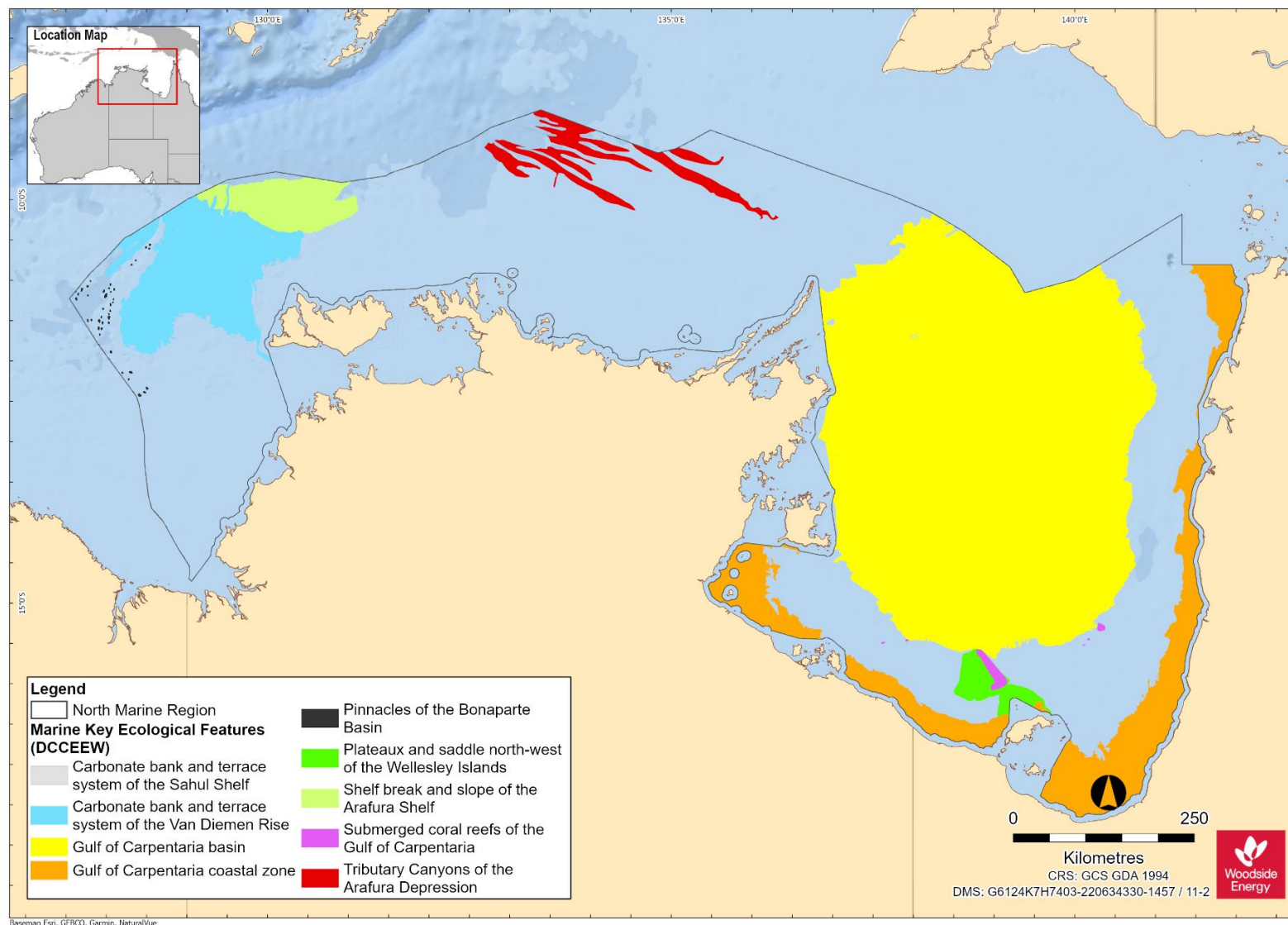
Table 10-3: KEFs within the NMR

KEF Name	Values <sup>1</sup>	Description
<b>Carbonate bank and terrace system of the Van Diemen Rise</b>	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 et al., 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.
<b>Gulf of Carpentaria basin</b>	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.
<b>Gulf of Carpentaria coastal zone</b>	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.
<b>Pinnacles of the Bonaparte Basin</b>	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 10-1 and Table 10-3)	Covering more than 520 km <sup>2</sup> 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.
<b>Plateaux and saddle north-west of the Wellesley Islands</b>	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.

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KEF Name	Values <sup>1</sup>	Description
<b>Shelf break and slope of the Arafura Shelf</b>	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 et al., 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.
<b>Submerged coral reefs of the Gulf of Carpentaria</b>	High aggregations of marine life, biodiversity and endemism Twenty percent of the reefs found in the NMR are situated within this KEF (Harris et al., 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.
<b>Tributary Canyons of the Arafura Depression</b>	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.

<sup>1</sup> Values description sourced from Marine bioregional plan for the North Marine Region (DSEWPAC, 2012c) and DAWE SPRAT database.



**Figure 10-3: KEFs within the NMR (data source: DCCEEW, 2024d)**

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## 11. PROTECTED AREAS

### 11.1 Regional Context

Protected areas include 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) show that there are 29 protected areas found in the NWMR, 18 in the SWMR and nine in the NMR.

Australian Marine Parks are outlined in Table 11-1, Table 11-2 Table 11-3 and Table 11-4. All other protected areas of each of the marine regions NWMR, SWMR and NMR are outlined in Table 11-5, Table 11-6, Table 11-7 and Table 11-8 respectively.

### 11.2 World Heritage Properties

World Heritage listings are sites of outstanding universal value and meet at least 10 selection criteria, compiled of cultural and natural basis criteria. World Heritage listings classed as meeting outstanding natural criteria are discussed in this section and World Heritage sites classed as meeting outstanding cultural criteria are discussed in Section 12.

The list of Australia's World Heritage Properties and the PMST Reports (Appendix A) show two World Heritage Properties within the NWMR (Table 11-6), one World Heritage Property within the SWMR (Table 11-7), and though not reported in the NMR PMST Report, Kakadu National Park World Heritage Area is included in Table 11-8.

### 11.3 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 12.

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 11-6), one in the SWMR (Table 11-7) and, for the NMR, Kakadu National Park (not included in the PMST report) is included in Table 11-8.

A search of the Commonwealth Heritage List identified six natural commonwealth heritage places within the NWMR (Table 11-8) and one within the SWMR (Table 11-7).

### 11.4 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 11-6), five in the SWMR (Table 11-7) and two for the Northern Territory, included for the NMR (not included in the PMST report) (Table 11-8).

## 11.5 Australian Marine Parks

Australian Marine Parks (AMPs), proclaimed under the EPBC Act in 2007 and 2013, are located in Commonwealth waters from the outer edge of State and Territory waters (3 NM) to the outer boundary of Australia's EEZ 200 NM from the shore.

PMST Reports (Appendix A) show 16 AMPs within the NWMR, 10 within the SWMR and eight within the NMR. These are displayed in Figure 11-1, Figure 11-2 and Figure 11-3, respectively.

The values of all marine parks identified in the North-West, South-West and North Marine Network management plans are described in Table 11-1, Table 11-3 and Table 11-4, respectively.

There are also two AMPs in the Indian Ocean territories. These are the Cocos (Keeling) Islands Marine Park and the Christmas Island Marine Park (Table 11-2, Figure 11-1) (Commonwealth of Australia, 2021).

### 11.5.1 North West Marine Parks Network

Table 11-1 describes Australian Marine Parks within the North West Marine Park Network, according to the North West Marine Parks Network Management Plan 2018 (DNP, 2018a).

**Table 11-1: Summary of Commonwealth Australian Marine Parks (AMPs) in the North West Marine Park Network**

North West Marine Park Network	IUCN Zones	Description and Values
Argo-Rowley Terrace Marine Park	National Park (II) Multiple Use (VI) Special Purpose Zone (Trawl) (VI)	<p><b>Description</b></p> <p>The Argo–Rowley Terrace Marine Park is located approximately 270 km north-west of Broome, Western Australia, and extends to the limit of Australia’s exclusive economic zone. This AMP covers an area of 146,003 km<sup>2</sup> and water depths between 220 m and 6000 m, protecting ecological communities in the deep offshore region. The AMP provides connectivity between the Mermaid Reef Marine Park and WA Rowley Shoals Marine Park.</p>
		<p><b>Natural values</b></p> <p>The marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>Northwest Transition—an area of shelf break, continental slope, and the majority of the Argo Abyssal Plain. Key topographic features include Mermaid, Clerke and Imperieuse Reefs</li> <li>Timor Province—an area dominated by warm, nutrient-poor waters. Canyons are an important feature in this area of the marine park and are generally associated with high productivity and aggregations of marine life.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>canyons linking the Argo Abyssal Plain with the Scott Plateau</li> <li>Mermaid Reef and Commonwealth waters surrounding Rowley Shoals.</li> </ul> <p>The marine park includes a range of seafloor features such as canyons on the slope between the Argo Abyssal Plain, Rowley Terrace and Scott Plateau. These are believed to be up to 50 million years old and are associated with small, periodic upwellings that results in localised higher levels of biological productivity. The marine park includes species listed under the EPBC Act.</p> <p>Biologically important areas within the marine park include resting and breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.</p>
		<p><b>Cultural values</b></p> <p>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.</p> <p>As noted in the North West Marine Park Management Plan, limited information regarding the cultural significance of this marine park is currently available (DNP, 2018a).</p>
		<p><b>Heritage values</b></p> <p>There are no international, Commonwealth or national heritage listings relevant to the Argo-Rowley Terrace Marine Park. The marine park contains two known shipwrecks listed under the <i>Historic Shipwrecks Act 1976: Alfred</i> (wrecked in 1908) and <i>Pelsart</i> (wrecked in 1908).</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<b>Social and economic values</b> Socio-economic values of this marine park include commercial fishing and mining.
Ashmore Reef Marine Park	Sanctuary (Ia) Recreational Use (IV)	<b>Description</b> The Ashmore Reef Marine Park is located approximately 630 km north of Broome and 110 km south of the Indonesian island of Roti. The marine park is located in Australia's External Territory of Ashmore and Cartier Islands. It is within an area subject to a Memorandum of Understanding (MoU) between Indonesia and Australia, known as the MoU Box. The marine park covers an area of 583 km <sup>2</sup> and water depths from less than 15 m to 500 m.
		<b>Natural values</b> The Ashmore Reef Marine Park includes ecosystems representative of the Timor Province—a bioregion with a depth range from about 200 m near the shelf break to 5920 m over the Argo Abyssal Plain. Ashmore Reef is an important feature of the bioregion. There are two distinct demersal fish communities: one on the upper slope, the other mid slope. The marine environment includes two extensive lagoons, sand flats, shifting sand cays, extensive reef flat and large areas of seagrass. The reef ecosystems are comprised of hard and soft corals, gorgonians, sponges and a range of encrusting organisms, with the highest number of coral species of any reef off the Western Australian coast. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within the marine park 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. The Ashmore Reef Ramsar site includes the largest of the atolls in the region. West Island, Middle Island and East Island represent the only vegetated islands in the region. The 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 West Australian coast. It is known for its abundance and diversity of sea snakes, although populations at Ashmore Reef have been in decline since 1998. Key ecological features are: <ul style="list-style-type: none"> <li>• Ashmore Reef and Cartier Island and surrounding Commonwealth waters</li> <li>• continental slope demersal fish communities—an area of high-diversity demersal fish assemblages.</li> </ul>
		<b>Cultural values</b> Sea Country is valued for Indigenous Australians cultural identity, health and wellbeing. Across Australia, Indigenous people have been sustainably using and managing their Sea Country for tens of thousands of years. As noted in the North West Marine Park Management Plan, there is limited information about the cultural significance of this marine park (DNP, 2018a). This marine park is valued in Indonesian culture as it contains Indonesian artefacts and grave sites. Ashmore lagoon is still accessed as a rest or staging area for traditional Indonesian fishers travelling to and from fishing grounds within the MoU Box.

North West Marine Park Network	IUCN Zones	Description and Values
		<b>Heritage values</b> Ashmore Reef is a Commonwealth Heritage listed site, meeting criteria A, B and C.
		<b>Social and economic values</b> Tourism, recreation and scientific research are important activities in this marine park.
Carnarvon Canyon Marine Park	Habitat Protection (IV)	<b>Description</b> The Carnarvon Canyon Marine Park is located approximately 300 km north-west of Carnarvon. It covers an area of 6177 km <sup>2</sup> and a water depth range of 1500–6000 m.
		<b>Natural values</b> This marine park includes ecosystems representative of the Central Western Transition—a bioregion characterised by large areas of continental slope, a range of topographic features such as terraces, rises and canyons, seasonal and sporadic upwelling, and benthic slope communities. It includes the Carnarvon Canyon, a single-channel canyon covering the entire depth range of this marine park. Ecosystems of this marine park are influenced by tropical and temperate currents, deep-water environments and proximity to the continental slope and shelf. The soft-bottom environment at the base of the Carnarvon Canyon is likely to support deep seafloor species (e.g. holothurians, polychaetes and sea-pens). This marine park supports a range of species listed under the EPBC Act.
		<b>Cultural values</b> 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.
		<b>Heritage values</b> No international, Commonwealth or national heritage listings apply to the marine park.
		<b>Social and economic values</b> Commercial fishing is an important activity in the marine park.
Cartier Island Marine Park	Sanctuary (Ia)	<b>Description</b> The Cartier Island Marine Park is located approximately 45 km south-east of Ashmore Reef Marine Park and 610 km north of Broome, Western Australia. Both marine parks are in Australia's External Territory of Ashmore and Cartier Islands and are also within an area subject to a Memorandum of Understanding (MoU) between Indonesia and Australia, known as the MoU Box. The Cartier Island Marine Park covers an area of 172 km <sup>2</sup> and water depths from less than 15 m to 500 m.

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of the Timor Province—a bioregion with a depth range from about 200 m near the shelf break to 5920 m over the Argo Abyssal Plain. The reefs and islands of this bioregion are regarded as biodiversity hotspots.</p> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Ashmore Reef and Cartier Island and surrounding Commonwealth waters</li> <li>• continental slope demersal fish communities.</li> </ul> <p>There are two distinct demersal fish communities of the continental slope: one on the upper slope, the other mid slope.</p> <p>This marine park includes an unvegetated sand island (Cartier Island), mature reef flat, a small, submerged pinnacle (Wave Governor Bank), and two shallow pools to the north-east of the island. It is also an area of high diversity and abundance of hard and soft corals, gorgonians (sea fans), sponges and a range of encrusting organisms. The reef crests are generally algal dominated, while the reef flats feature ridges of coral rubble and large areas of seagrass.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and foraging habitat for seabirds, internesting, nesting and foraging habitat for marine turtles and foraging habitat for whale sharks.</p> <p>This marine park is internationally significant for its abundance and diversity of sea snakes.</p> <p><b>Cultural values</b></p> <p>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. As noted in the North-west Marine Park Management Plan, there is limited information about the cultural significance of this marine park (DNP, 2018a).</p> <p><b>Heritage values</b></p> <p>This marine park contains one known shipwreck listed under the <i>Historic Shipwrecks Act 1976</i>: the <i>Ann Millicent</i> (wrecked in 1888). No international or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Scientific research is an important activity in this marine park.</p>
Dampier Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI)	<p><b>Description</b></p> <p>The Dampier Marine Park is located approximately 10 km North-east of Cape Lambert and 40 km from Dampier, extending from the Western Australian state water boundary. This marine park covers an area of 1252 km<sup>2</sup> and a water depth range between less than 15 m and 70 m.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b> This marine park includes ecosystems representative of the Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline thought to be an important seafloor feature and migratory pathway for humpback whales. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and foraging habitat for seabirds, interesting habitat for marine turtles and a migratory pathway for humpback whales.</p> <p><b>Cultural values</b> 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. The Ngarluma, Yindjibarndi, Yaburara, and Mardudhunera people have responsibilities for Sea Country in this marine park. The native title holders for these people are represented by the Ngarluma Aboriginal Corporation and Yindjibarndi Aboriginal Corporation. These Prescribed Bodies Corporate represent Traditional Owners with native title over coastal areas adjacent to this marine park. The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Pilbara and Yamatji regions.</p> <p><b>Heritage values</b> No international, Commonwealth or national listings apply to this marine park; however, the marine park is approximately 10 km north of the Dampier Archipelago (including Burrup Peninsula) national heritage listing, which has significant Indigenous heritage values including rock art sites.</p> <p><b>Social and economic values</b> Port activities, commercial fishing and recreation, including fishing, are important activities in this marine park.</p>
Eighty Mile Beach Marine Park	Multiple Use (VI)	<p><b>Description</b> The Eighty Mile Beach Marine Park is located approximately 74 km north-east of Port Hedland, adjacent to the Western Australian Eighty Mile Beach Marine Park. This marine park covers an area of 10,785 km<sup>2</sup> and water depth ranges between less than 15 m and 70 m.</p> <p><b>Natural values</b> This Marine Park includes examples of ecosystems representative of the Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline thought to be an important seafloor feature and migratory pathway for humpback whales. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding, foraging and resting habitat for seabirds, interesting and nesting habitat for marine turtles, foraging, nursing and pupping habitat for sawfish and a migratory pathway for humpback whales.</p>

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North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Cultural values</b></p> <p>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.</p> <p>The Sea Country of the Nyangumarta, Karajarri and Ngarla people extends into the Eighty Mile Beach Marine Park. Sea Country is culturally significant and important to their identity. They have an unbroken, deep spiritual connection to their Sea Country, with traditional practices continuing today. Staple foods of living cultural value for the Nyangumarta, Karajarri and Ngarla people include saltwater fish, turtles, dugong, crabs and oysters. Access to Sea Country by families is important for cultural traditions, livelihoods and future socio-economic development opportunities.</p> <p>The native title holders for the Nyangumarta, Karajarri and Ngarla people are represented by the Karajarri Aboriginal Corporation, Nyangumarta Karajarri Aboriginal Corporation, Nyangumarta Warrarn Aboriginal Corporation, and Wanparta Aboriginal Corporation. These Prescribed Body Corporates represent Traditional Owners with native title over coastal area adjacent to the marine park. They are the points of contact for their respective areas of responsibility for Sea Country in the marine park.</p> <p>The Kimberley Land Council and the Yamatji Marlpa Aboriginal Corporation are the Native Title Representative Bodies for Kimberley and Pilbara regions.</p> <p><b>Heritage values</b></p> <p>This marine park contains three known shipwrecks listed under the Historic Shipwrecks Act 1976: <i>Lorna Doone</i> (wrecked in 1923), <i>Nellie</i> (wrecked in 1908), and <i>Tifera</i> (wrecked in 1923).</p> <p>No international, Commonwealth or national listings apply to the marine park.</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, pearling and recreation are important activities in this marine park.</p>
Gascoyne Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI)	<p><b>Description</b></p> <p>The Gascoyne Marine Park is located approximately 20 km off the west coast of the Cape Range Peninsula, adjacent to the Ningaloo Reef Marine Park and the Western Australian Ningaloo Marine Park and extends to the limit of Australia's exclusive economic zone. This marine park covers an area of 81,766 km<sup>2</sup> and water depth varies between 15 m and 6000 m.</p>



North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Central Western Shelf Transition—continental shelf with water depths up to 100 m, and a significant transition zone between tropical and temperate species</li> <li>• Central Western Transition—characterised by large areas of continental slope, a range of topographic features such as terraces, rises and canyons, seasonal and sporadic upwelling, benthic slope communities comprising tropical and temperate species</li> <li>• Northwest Province—an area of continental slope comprising diverse and endemic fish communities.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula</li> <li>• Commonwealth waters adjacent to Ningaloo Reef</li> <li>• continental slope demersal fish communities</li> <li>• Exmouth Plateau.</li> </ul> <p>Ecosystems represented in this Marine Park are influenced by the interaction of the Leeuwin Current, Leeuwin Undercurrent and the Ningaloo Current.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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.</p> <p><b>Cultural values</b></p> <p>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. The Gnulli people have responsibilities for Sea Country in this marine park. The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Heritage values</b></p> <p><i>World heritage</i> The Ningaloo Coast was listed as an area of outstanding universal value under the World Heritage Convention in 2011, meeting world heritage listing criteria vii and x. The Ningaloo Coast World Heritage Property is adjacent to the marine park.</p> <p><i>Commonwealth heritage</i> The Ningaloo Marine Area (Commonwealth waters) meets the Commonwealth heritage listing criteria A, B and C. The Ningaloo Marine Area is adjacent to the marine park.</p> <p><i>National heritage</i> The Ningaloo Coast meets the national heritage listing criteria A, B, C, D, and F and is adjacent to the marine park.</p> <p><i>Historic shipwrecks</i> The marine park contains more than five known shipwrecks listed under the Historic Shipwrecks Act 1976.</p> <p><b>Social and economic values</b> Commercial fishing, mining and recreation are important activities in this marine park.</p>
Kimberley Marine Park	Habitat Protection (IV) National Park (II) Multiple Use (VI)	<p><b>Description</b></p> <p>The Kimberley Marine Park is located approximately 100 km north of Broome, extending from the Western Australian state water boundary north from the Lacepede Islands to the Holothuria Banks offshore from Cape Bougainville. This marine park is adjacent to the Western Australian Lalanggarra/Camden Sound Marine Park and the North Kimberley Marine Park. This marine park covers an area of 74,469 km<sup>2</sup> and water depths from less than 15 m to 800 m.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural Values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and an ancient coastline thought to be an important seafloor feature and migratory pathway for humpback whales.</li> <li>• Northwest Shelf Transition—straddles the North-west and North Marine Regions and in the Northwest includes shelf break, continental slope, and the majority of the Argo Abyssal Plain and is subject to a high incidence of cyclones. Benthic biological communities in the deeper parts of the bioregion have not been extensively studied, although high levels of species diversity and endemism occur among demersal fish communities on the continental slope.</li> <li>• Timor Province—water depths (of the bioregion) ranging from about 200 m near the shelf break to 5920 m over the Argo Abyssal Plain. The reefs and islands of the bioregion are regarded as biodiversity hotspots. Endemism in demersal fish communities of the continental slope is high; two distinct communities have been identified on the upper and mid slopes.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• ancient coastline at the 125 m depth contour</li> <li>• continental slope demersal fish communities.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Cultural values</b></p> <p>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.</p> <p>The Wunambal Gaambera, Dambimangari, Mayala, Bardi Jawi and the Nyul Nyul people's Sea Country extends into the Kimberley Marine Park. The Wunambal Gaambera people's country includes daagu (deep waters), with about 3400 km<sup>2</sup> of their Sea Country located in this marine park. The Wunambal Gaambera, Dambimangari, Mayala, Bardi Jawi and the Nyul Nyul people have an unbroken connection to their Sea Country, having deep spiritual connection through Wunggurr (creator snakes) that still live in the sea.</p> <p>Staple foods of living cultural value include saltwater fish, turtles, dugong, crabs and oysters. Access to Sea Country by families is important for cultural traditions, livelihoods and future socio-economic development opportunities.</p> <p>The national heritage listing for the West Kimberley recognises the following key cultural heritage values:</p> <ul style="list-style-type: none"> <li>• Wanjina Wunggurr Cultural Tradition which incorporates many Sea Country cultural sites</li> <li>• log-raft maritime tradition, which involved using tides and currents to access warrurru (reefs) far offshore to fish</li> <li>• interactions with Makassan traders around sea foods over hundreds of years</li> <li>• important pearl resources that were used in traditional trade through the wunan and in contemporary commercial agreements.</li> </ul> <p>The Wunambal Gaambera, Dambimangari and Bardi Jawi people consider that these values extend into the Kimberley Marine Park. The Wanjina Wunggurr is law of the Wunambal Gaambera and Dambimangari people and it is recognised that all of the Sea Country, land, plants and animals were put there by Wanjina Wunggurr. Under Wanjina Wunggurr law, the Wunambal Gaambera and Dambimangari people have a responsibility to manage country, to maintain the health of the country and all living things.</p> <p>The Wunambal Gaambera, Bardi Jawi, Mayala and the Nyul Nyul people have had native title determined over parts of their Sea Country included in this marine park. The native title holders for these people are represented by the Wunambal Gaambera Aboriginal Corporation, Bardi and Jawi Niimidiman Aboriginal Corporation and the Kimberley Land Council. These representative bodies are the points of contact for their respective areas of Sea Country for this marine park.</p> <p>The Kimberley Land Council is the Native Title Representative Body for the Kimberley region.</p> <p><b>Heritage values</b></p> <p>This Marine Park contains more than 40 known shipwrecks listed under the Historic Shipwrecks Act 1976.</p> <p>No international, Commonwealth or national heritage listings apply to the marine park; however, the marine park is adjacent to the national heritage place of the West Kimberley.</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, mining, recreation, including fishing and traditional use, are important activities in this marine park.</p>

North West Marine Park Network	IUCN Zones	Description and Values
Mermaid Reef Marine Park	National Park (II)	<p><b>Description</b></p> <p>The Mermaid Reef Marine Park is located approximately 280 km North-west of Broome, adjacent to the Argo–Rowley Terrace Marine Park and approximately 13 km from the Western Australian Rowley Shoals Marine Park. This marine park covers an area of 540 km<sup>2</sup> and water depths from less than 15 m to 500 m.</p> <p>Mermaid Reef is one of three reefs forming the Rowley Shoals. The reefs of the Rowley Shoals are significant as they are considered ecological stepping stones for reef species originating in Indonesian/Western Pacific waters, are one of a few offshore reef systems on the NWS, and may also provide an upstream source for recruitment to reefs further south.</p>
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of the Northwest Transition—an area of shelf break, continental slope, and the majority of the Argo Abyssal Plain. Together with Clerke Reef and Imperieuse Reef, Mermaid Reef is a biodiversity hotspot and key topographic feature of the Argo Abyssal Plain.</p> <p>A key ecological feature of this marine park is the Mermaid Reef and Commonwealth waters surrounding the Rowley Shoals. Ecosystems of this marine park are associated with emergent reef flat, deep reef flat, lagoon, and submerged sand habitats. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding habitat for seabirds and a migratory pathway for the pygmy blue whale.</p>
		<p><b>Cultural values</b></p> <p>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. As noted in the North-west Marine Park Management Plan, there is limited information about the cultural significance of this marine park (DNP, 2018a).</p>
		<p><b>Heritage values</b></p> <p>No international or national listings apply to this marine park.</p> <p>Mermaid Reef–Rowley Shoals was established on the Commonwealth Heritage List in 2004, meeting Commonwealth heritage listing criteria A, B, C and D.</p> <p>This marine park contains one known shipwreck listed under the Historic Shipwrecks Act 1976: <i>Lively</i> (wrecked in 1810).</p>
		<p><b>Social and economic values</b></p> <p>Tourism, recreation, and scientific research are important activities in this marine park.</p>
Montebello Marine Park	Multiple Use (VI)	<p><b>Description</b></p> <p>The Montebello Marine Park is located offshore of Barrow Island and 80 km west of Dampier extending from the Western Australian State water boundary, and is adjacent to the Western Australian Barrow Island and Montebello Islands marine parks.</p> <p>This marine park covers an area of 3413 km<sup>2</sup> and water depths from less than 15 m to 150 m.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b> This marine park includes examples of ecosystems representative of the Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities. A key ecological feature of this Marine Park is the ancient coastline at the 125 m depth contour. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding habitat for seabirds, interbreeding, foraging, mating, and nesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for whale sharks.</p> <p><b>Cultural values</b> The Yamatji Marpa Aboriginal Corporation is the Native Title Representative Body for the Pilbara region. 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. As noted in the North-west Marine Park Management Plan, there is limited information about the cultural significance of this marine park (DNP, 2018a).</p> <p><b>Heritage values</b> No international, Commonwealth or national listings apply to this marine park; however, this Marine Park is adjacent to the Western Australia Barrow Island and the Montebello–Barrow Island Marine Conservation Reserves which have been nominated for national heritage listing. This marine park contains two known shipwrecks listed under the Historic Shipwrecks Act 1976: <i>Trial</i> (wrecked in 1622), the earliest known shipwreck in Australian waters and <i>Tanami</i> (unknown date).</p> <p><b>Social and economic values</b> Tourism, commercial fishing, mining and recreation are important activities in this marine park.</p>
Ningaloo Marine Park	National Park (II) Recreational Use (IV)	<p><b>Description</b> The Ningaloo Marine Park stretches approximately 300 km along the west coast of the Cape Range Peninsula, and is adjacent to the Western Australian Ningaloo Marine Park and Gascoyne Marine Park. This marine park covers an area of 2435 km<sup>2</sup> and a water depth range of 30 m to more than 500 m. This marine park provides connectivity between deeper offshore waters of the shelf break and coastal waters of the adjacent Western Australian Ningaloo Marine Park. It includes some of the most diverse continental slope habitats in Australia, including the continental slope area between North West Cape and the Montebello Trough. Canyons in this marine park are important for sustaining the nutrient conditions that support the high diversity of Ningaloo Reef.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Central Western Shelf Transition—continental shelf of water depths up to 100 m, and a significant transition zone between tropical and temperate species</li> <li>• Central Western Transition—characterised by large areas of continental slope, a range of topographic features such as terraces, rises and canyons, seasonal and sporadic upwelling, and benthic slope communities comprising tropical and temperate species</li> <li>• Northwest Province—an area of continental slope comprising diverse and endemic fish communities</li> <li>• Northwest Shelf Province—a dynamic environment, influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline thought to be an important seafloor feature and migratory pathway for humpback whales.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula</li> <li>• Commonwealth waters adjacent to Ningaloo Reef</li> <li>• continental slope demersal fish communities.</li> </ul> <p>Ecosystems represented in this marine park are influenced by interaction of the Leeuwin Current, Leeuwin Undercurrent and the Ningaloo Current.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and/or foraging habitat for seabirds, internesting 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.</p> <p><b>Cultural values</b></p> <p>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. The Gnulli people have responsibilities for Sea Country in this marine park.</p> <p>The Yamatji Marpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Heritage values</b></p> <p><i>World heritage</i> This marine park is within the Ningaloo Coast World Heritage Property, meeting world heritage listing criteria vii and x. The area is valued for high terrestrial species endemism, marine species diversity and abundance, and the interconnectedness of large-scale marine, coastal and terrestrial environments. The area connects the limestone karst system and fossil reefs of the ancient Cape Range to the nearshore reef system of Ningaloo Reef, to the continental slope and shelf in Commonwealth waters.</p> <p><i>National heritage</i> The Ningaloo Coast overlaps this marine park, meeting the national heritage listing criteria A, B, C, D and F.</p> <p><i>Commonwealth heritage</i> The Ningaloo Marine Area (Commonwealth waters) meets Commonwealth heritage listing criteria A, B and C. The Ningaloo Marine Area overlaps this marine park.</p> <p><i>Historic shipwrecks</i> This marine park contains more than 15 known shipwrecks listed under the Historic Shipwrecks Act 1976.</p> <p><b>Social and economic values</b> Tourism and recreation, including fishing, are important activities in this marine park.</p>
Roebuck Marine Park	Multiple Use (VI)	<p><b>Description</b> The Roebuck Marine Park is located approximately 12 km offshore of Broome and is adjacent to the Western Australian Yawuru Nagulagun/Roebuck Bay Marine Park. This marine park covers an area of 304 km<sup>2</sup> and a water depth range of less than 15 m to 70 m.</p> <p>This marine park is adjacent to the Roebuck Bay Ramsar site, recognised as one of the most important areas for migratory shorebirds in Australia; and the Western Australian Yawuru Nagulagun/Roebuck Bay Marine Park, providing connectivity between offshore and inshore coastal waters of Roebuck Bay.</p> <p><b>Natural values</b> This marine park includes examples of ecosystems representative of the Northwest Shelf Province—a dynamic environment influenced by strong tides, cyclonic storms, long-period swells and internal tides. The bioregion includes diverse benthic and pelagic fish communities, and ancient coastline thought to be an important seafloor feature and migratory pathway for humpback whales.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and resting habitat for seabirds, foraging and interesting habitat for marine turtles, a migratory pathway for humpback whales and foraging habitat for dugong.</p>



North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Cultural values</b> 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.</p> <p>Yawuru people have always recognised the waters of Roebuck Bay as nagula (Yawuru Sea Country), and have customary responsibilities to care for it. They have a deep spiritual connection to offshore landscapes from Bugarrigarra (creator beings), and believe that snake-like metaphysical beings inhabit the sea.</p> <p>Cultural sites in Sea Country are also a source of law. The Yawuru people harvest marine resources according to the six Yawuru seasons. They have harvested pearl shell for food and cultural purposes. Fish are a staple food source, and fishing a form of cultural expression, connecting people to their country, modelled on tradition and based in traditional law. Access to Sea Country by families is important to cultural traditions, livelihoods and future socio-economic development opportunities. The Yawuru Native Title Holders Aboriginal Corporation is the Prescribed Body Corporate representing Traditional Owners with native title over coastal areas adjacent to this marine park, and is the point of contact for Sea Country in this marine park. The Kimberley Land Council is the Native Title Representative Body for the Kimberley region.</p> <p><b>Heritage values</b> No international, Commonwealth or national listings apply to the marine park; however, it is adjacent to the West Kimberley National Heritage Place.</p> <p><b>Social and economic values</b> Tourism, commercial fishing, pearling and recreation, including fishing, are important activities that occur in the marine park.</p>
Shark Bay Marine Park	Multiple Use (VI)	<p><b>Description</b> The Shark Bay Marine Park is located approximately 60 km offshore of Carnarvon, adjacent to the Shark Bay world heritage property and national heritage place. This marine park covers an area of 7443 km<sup>2</sup>, extending from the Western Australian State water boundary, and a water depth range between 15 m and 220 m.</p>

North West Marine Park Network	IUCN Zones	Description and Values
		<p><b>Natural values</b></p> <p>This Marine Park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Central Western Shelf—a predominantly flat, sandy and low-nutrient area, in water depths 50–100 m. The bioregion is a transitional zone between tropical and temperate species</li> <li>• Central Western Transition—characterised by large areas of continental slope, a range of topographic features such as terraces, rises and canyons, seasonal and sporadic upwelling, and benthic slope communities comprising tropical and temperate species.</li> </ul> <p>Ecosystems represented in this marine park are influenced by the Leeuwin, Ningaloo and Capes currents.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding habitat for seabirds, internesting habitat for marine turtles, and a migratory pathway for humpback whales. This marine park and adjacent coastal areas are also important for shallow-water snapper.</p>
		<p><b>Cultural values</b></p> <p>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. The Gnulli and Malgana people have responsibilities for Sea Country in this marine park.</p> <p>The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.</p>
		<p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this Marine Park , but this marine park is adjacent to the Shark Bay, Western Australia World Heritage Property and Shark Bay, Western Australia National Heritage Place.</p> <p>The marine park contains approximately 20 known shipwrecks listed under the Historic Shipwrecks Act 1976.</p>
		<p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, mining and recreation, including fishing, are important activities in the marine park.</p>

## 11.5.2 Indian Ocean Territory

Table 11-2 describes the values of the Indian Ocean territory Australian Marine Parks (Commonwealth of Australia, 2021).

**Table 11-2: Summary of Commonwealth marine parks within Indian Ocean territories**

Indian Ocean Territory Marine Park	IUCN Zones	Values
Christmas Island Marine Park	National Park (II) Habitat Protection (IV)	<b>Description</b> Christmas Island Marine Park covers an area of 277,016 km <sup>2</sup> and extends from the island's shoreline to the limit of Australia's exclusive economic zone, approximately 200 NM from shore (except to the north of Christmas Island). This marine park adjoins the marine boundary of Christmas Island National Park, which extends 50 m seaward from the island. Almost all the island's port is excluded from this marine park, except for a very small and narrow part of the port's western boundary.
		<b>Natural values</b> The tropical waters and fringing coral reefs that surround Christmas Island contain a mix of coral reef species from both the Indian and Pacific Oceans and over 680 species of fish have been recorded in the region. The overlap of these waters gives rise to varieties of hybrid marine fish and some endemic species. Christmas Island also has the world's greatest diversity and abundance of land crabs. The island's waters are essential for the crabs, as they migrate to the coast to breed and release their eggs into the ocean. This marine park contains a range of unique seafloor features, habitats and species, particularly seamounts and deep-sea plains. Biologically important areas include foraging areas for the endemic Abbott's booby, Christmas Island frigatebird and golden bosun and other seabirds that nest on Christmas Island, as well as whale shark feeding areas and southern bluefin tuna breeding habitat.
		<b>Cultural values</b> The ocean is a centrepiece of life for many community members, of Christmas Island including those of Malay and Chinese heritage who maintain strong cultural traditions and connections to the surrounding marine environment.
		<b>Social and economic values</b> This marine park is valued for fishing (commercial, recreational and subsistence), diving, snorkelling and tourism. There is potential for scientific study and educational activities.
Cocos (Keeling) Islands Marine Park	National Park (II) Habitat Protection (IV)	<b>Description</b> Cocos (Keeling) Islands are located around 2,750 km north-west of Perth and the Cocos (Keeling) Islands Marine Park covers a 467,054 km <sup>2</sup> area, extending from most of the islands' shoreline to the limit of the Australian exclusive economic zone, approximately 100 NM from shore. The Cocos (Keeling) Islands are a group of 27 tropical low-lying coral islands.

Indian Ocean Territory Marine Park	IUCN Zones	Values
		<p><b>Natural values</b></p> <p>The central lagoon system and outer reefs are two of the islands' important habitats. The lagoon encompasses a variety of unique and distinct habitats. This includes seagrass, which is essential for the resident green turtle population (which is a genetically distinct stock that is unique to the islands) as well as for sustaining fish populations. The outer reef habitats are dominated by hard and soft corals and have a high abundance and diversity of reef fish and other species.</p> <p>The offshore waters contain a range of unique seafloor features, habitats, and species, particularly seamounts, deep-sea plains, and a significant deep-sea ridgeline. This marine park also protects the foraging habitat of nesting seabirds on North Keeling Island (Pulu Keeling National Park), as well as species such as dolphins, deep-sea fish and sharks that are or may be threatened elsewhere in the region.</p>
		<p><b>Cultural values</b></p> <p>Most of the islands' community members are Cocos Malay, who maintain vibrant and unique cultural traditions including strong cultural connections to the surrounding marine environment. The lagoon and ocean are an important part of life for all community members living on the remote atoll.</p>
		<p><b>Social and economic values</b></p> <p>This marine park is valued for recreational and subsistence activities (i.e., fishing, boating, diving, snorkelling, kite surfing, and kayaking), tourism, scientific research, and educational activities.</p>

### 11.5.3 South-west Marine Parks Network

Table 11-3 describes the Australian Marine Parks within the South-west Marine Parks Network (South-west Network), according to the South West Marine Parks Network Management Plan 2018 (DNP, 2018b).

**Table 11-3: Summary of Commonwealth AMPs for the South West Marine Park Network**

South West Marine Park Network	IUCN Zones	Natural Values
Abrolhos Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI) Special Purpose Zone (Trawl) (VI)	<p><b>Description</b></p> <p>The Abrolhos Marine Park is located adjacent to the Western Australian Houtman Abrolhos Islands, covering a large offshore area extending from the Western Australian State water boundary to the edge of Australia's exclusive economic zone. It is located approximately 27 km south-west of Geraldton and extends north to approximately 330 km west of Carnarvon. The northernmost part of the shelf component of the marine park, north of Kalbarri, is adjacent to the Shark Bay World Heritage Area. This marine park covers an area of 88,060 km<sup>2</sup> and a water depth range between less than 15 m and 6000 m.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Central Western Province—characterised by a narrow continental slope incised by many submarine canyons and the most extensive area of continental rise in any of Australia's marine regions. A significant feature within the area are several eddies that form off the Leeuwin Current at predictable locations, including west of the Houtman Abrolhos Islands.</li> <li>• Central Western Shelf Province— a predominantly flat, sandy and low nutrient area, in water depths between 50 and 100 m. Significant seafloor features of this area include a deep hole and associated area of banks and shoals offshore of Kalbarri. The area is a transitional zone between tropical and temperate species.</li> <li>• Central Western Transition—a deep ocean area characterised by large areas of continental slope, a range of significant seafloor features including the Wallaby Saddle, seasonal and sporadic upwelling, and benthic slope communities comprising tropical and temperate species.</li> <li>• South-west Shelf Transition—a narrow continental shelf that is noted for its physical complexity. The Leeuwin Current has a significant influence on the biodiversity of this nearshore area as it pushes subtropical water southward along the area's western edge. The area contains a diversity of tropical and temperate marine life including a large number of endemic fauna species.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Commonwealth marine environment surrounding the Houtman Abrolhos Islands</li> <li>• demersal slope and associated fish communities of the Central Western Province</li> <li>• mesoscale eddies</li> <li>• Perth Canyon and adjacent shelf break, and other west-coast canyons</li> <li>• western rock lobster</li> <li>• ancient coastline between 90 m and 120 m depth</li> <li>• Wallaby Saddle.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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 marine park is adjacent to the northernmost Australian sea lion breeding colony in Australia on the Houtman Abrolhos Islands.</p>

South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Cultural values</b></p> <p>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.</p> <p>The Nanda and Naaguja People have responsibilities for Sea Country in this marine park. Traditional Owners have strong stories that connect ocean and land. Artefacts from ancestors are abundant on islands in the adjacent State marine park. The Yamatji Marlpa Aboriginal Corporation is the Native Title Representative Body for the Yamatji region.</p> <p><b>Heritage values</b></p> <p>No international heritage listings apply to this marine park; however, this marine park is adjacent to the Western Australian Shark Bay World Heritage Property, listed as an area of outstanding universal value under the World Heritage Convention in 1991, meeting world heritage listing criteria vii, viii, ix, and x.</p> <p>No Commonwealth or national heritage listings apply to this marine park; however, this marine park is adjacent to the Western Australian Shark Bay National Heritage Place.</p> <p>This marine park contains 11 known shipwrecks listed under the Historic Shipwrecks Act 1976. The <i>Zuytdorp</i> (wrecked in 1712) historic shipwreck protected zone lies in State waters adjacent to the northernmost part of the shelf component of the marine park, north of Kalbarri. The <i>HMAS Sydney II</i> and <i>HSK Kormoran</i> Shipwreck Sites (1941) lie at 2,500 m depth about 75 km east of the northern part of the marine park. This site is on the National Heritage List and a historic shipwreck protected zone. The <i>Batavia</i> (wrecked on the adjacent Abrolhos Islands in 1629) Shipwreck Site and Survivor Camps Area are on the National Heritage List.</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, mining, recreation including fishing, are important activities in the marine park.</p>
Bremer Marine Park	National Park Zone (II) Special Purpose Zone (Mining Exclusion) (VI)	<p><b>Description</b></p> <p>The Bremer Marine Park is located approximately half-way between Albany and Esperance, offshore from the Fitzgerald River National Park, extending from the Western Australian State water boundary. This marine park covers an area of 4472 km<sup>2</sup> and water depths from 15 m to 5000 m.</p>

South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Southern Province—includes the deepest ocean areas of the Australian exclusive economic zone, reaching depths of around 5900 m, and is characterised by a long continental slope incised by numerous, well-developed submarine canyons</li> <li>• South-west Shelf Province—marine life in this area is very diverse and likely influenced by the warm waters of the Leeuwin Current. The sheltered bays along the south coast are important southern right whale calving areas.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Albany Canyon group and adjacent shelf break</li> <li>• ancient coastline between 90 m and 120 m depth.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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. This marine park includes canyons—important aggregation areas for killer whales.</p> <p><b>Cultural values</b></p> <p>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.</p> <p>The Noongar people have responsibilities for Sea Country in this Marine Park. Local Traditional Owners recognise Kaart, Koort and Waarnginy (head, heart and talking) as bringing together the narratives and protocols that have been practiced for thousands of years and the kinship that influences all stages and cycles of life. Traditional Owners have responsibility for cultural values and are focussed on the creation and regeneration of spiritual, ethical, cultural and practical benefits and opportunities for marine systems.</p> <p>The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing and recreation, including fishing, are important activities in this marine park.</p>
Eastern Recherche Marine Park	National Park Zone (II) Special Purpose Zone (VI)	<p><b>Description</b></p> <p>The Eastern Recherche Marine Park is located approximately 135 km east of Esperance, adjacent to the Recherche Archipelago, close to the Western Australian Cape Arid National Park. This marine park covers an area of 20,575 km<sup>2</sup>, extending from the Western Australia State water boundary to the edge of Australia's exclusive economic zone, and a water depth range from less than 15 m to 6000 m.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• South-west Shelf Province—marine life in this area is very diverse and likely influenced by the warm waters of the Leeuwin Current. It includes globally important biodiversity hotspots, such as the waters surrounding the Recherche Archipelago</li> <li>• Southern Province—includes the deepest ocean areas of the Australian exclusive economic zone, reaching depths of around 5,900 m, and is characterised by a long continental slope, numerous, well-developed submarine canyons, and extensive mid-slope terraces</li> <li>• Great Australian Bight Shelf Transition—a vast and shallow area characterised by an extensive area of flat continental shelf. The invertebrate communities that inhabit the seafloor are among the most diverse in the world. The inshore areas of the bioregion are globally important for threatened southern right whale and the Australian sea lion.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• mesoscale eddies</li> <li>• ancient coastline between 90 m and 120 m depth</li> <li>• Commonwealth marine environment surrounding the Recherche Archipelago.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.</p> <p><b>Cultural values</b></p> <p>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.</p> <p>The Ngadju and Esperance Nyungar people have responsibilities for Sea Country in this marine park. Local Traditional Owners recognise Kaart, Koort and Waarnginy (head, heart and talking) as bringing together the narratives and protocols that have been practiced for thousands of years and the kinship that influences all stages and cycles of life. Traditional Owners have responsibility for cultural values and are focussed on the creation and regeneration of spiritual, ethical, cultural and practical benefits and opportunities for marine systems.</p> <p>The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p>This marine park contains two known shipwrecks listed under the Historic Shipwrecks Act 1976—<i>Rodondo</i> (wrecked in 1894) and <i>Start</i> (wrecked in 1879).</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, mining and recreation, including fishing, are important activities in this marine park.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
Geographe Marine Park	National Park Zone (II) Habitat Protection (IV) Multiple Use (VI) Special Purpose (Mining Exclusion Zone) (VI)	<b>Description</b> The Geographe Marine Park is located in Geographe Bay, approximately 8 km west of Bunbury and 8 km north of Busselton, adjacent to the Western Australian Ngari Capes Marine Park. This marine park covers an area of 977 km <sup>2</sup> , extending from the Western Australian State water boundary, and a water depth range between 15 m and 70 m.
		<b>Natural values</b> This marine park includes examples of ecosystems representative of the South-west Shelf Province—an area of diverse marine life, influenced by the warm waters of the Leeuwin Current. The bioregion includes globally important biodiversity hotspots, such as the waters off Geographe Bay. Key ecological features are: <ul style="list-style-type: none"> <li>• Commonwealth marine environment within and adjacent to Geographe Bay</li> <li>• western rock lobster.</li> </ul> This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, a migratory pathway for humpback and pygmy blue whales, and a calving buffer area for southern right whales.
		<b>Cultural values</b> 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. The Noongar people have responsibility for Sea Country in this marine park. Traditional Owners have maintained cultural responsibilities for Sea Country as passed down from elders, to keep the oceans healthy, to support spiritual wellbeing and to uphold and protect obligatory cultural responsibilities for future generations. The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.
		<b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park. This marine park contains eight known shipwrecks listed under the Historic Shipwrecks Act 1976.
		<b>Social and economic values</b> Tourism, commercial fishing and recreation, including fishing, are important activities in the marine park.

South West Marine Park Network	IUCN Zones	Natural Values
Great Australian Bight Marine Park	National Park Zone (II) Multiple Use Zone (VI) Special Purpose Zone (Mining Exclusion) (VI) Special Purpose Zone (VI)	<p><b>Description</b></p> <p>The Great Australian Bight Marine Park is located approximately 12 km south-east of Eucla and 174 km west of Ceduna, adjacent to the South Australian Far West Coast and Nuyts Archipelago marine parks. This marine park covers an area of 45,822 km<sup>2</sup>, extending from South Australian State water boundary to the edge of Australia's exclusive economic zone, and a water depth range between less than 15 m and 6000 m.</p>
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>Great Australian Bight Shelf Transition—a vast and shallow area, characterised by an extensive area of flat continental shelf. The invertebrate communities that inhabit the seafloor are among the most diverse in the world. The inshore areas of the bioregion are globally important for the threatened southern right whale and the Australian sea lion.</li> <li>Southern Province—includes the deepest ocean areas of the Australian exclusive economic zone, reaching depths of around 5900 m, and that is characterised by a long continental slope, numerous, well-developed submarine canyons, and extensive mid-slope terraces such as the Ceduna Terrace.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>ancient coastline between 90 m and 120 m depth</li> <li>benthic invertebrate communities of the eastern Great Australian Bight</li> <li>small pelagic fish of the South-west Marine Region.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions, white sharks and pygmy blue and sperm whales, and a calving area, migratory pathway and large aggregation area for southern right whales.</p>
		<p><b>Cultural values</b></p> <p>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.</p> <p>The Mirning and Wirangu people have responsibilities for sea country in this marine park. The far west coast region of South Australia includes over 1000 km of coastline along the Nullarbor Cliffs of the Great Australian Bight and the Nuyts Archipelago, and supports a sea-based tradition and culture.</p> <p>The Mirning people have a strong connection to land and Sea Country of the Nullarbor, and the Wirangu people have a strong connection to land and Sea Country across the remainder of the far west coastal region. Fishing is woven into the beliefs and values of this region, through the use of resources such as shellfish, periwinkles, abalone and razorfish; and the sharing of traditional fishing knowledge, catch and meals. The care and protection of these waters, the coastline, marine life and resources correspond directly with cultural stories, sites and knowledge.</p> <p>South Australian Native Title Services is the native title service provider for the South Australian region.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.
		<b>Social and economic values</b> Tourism, commercial fishing, and mining are important activities in this marine park.
Jurien Marine Park	National Park Zone (II) Special Purpose (VI)	<b>Description</b> The Jurien Marine Park is located approximately 148 km north of Perth and 155 km south of Geraldton, adjacent to the Western Australian Jurien Bay Marine Park. This marine park covers an area of 1,851 km <sup>2</sup> of continental shelf, extending from the Western Australian State water boundary, and a water depth range between 15 m and 220 m.
		<b>Natural values</b> This marine park includes ecosystems representative of: <ul style="list-style-type: none"> <li>Central Western Province—this marine park includes a small component of this bioregion, characterised by a narrow continental slope and influenced by the Leeuwin Current</li> <li>South-west Shelf Transition—consists of a narrow continental shelf that is noted for its physical complexity. The Leeuwin Current has a significant influence on the biodiversity of this nearshore area as it pushes subtropical water southward along the bioregion's western edge. The area contains a diversity of tropical and temperate marine life including a large number of endemic fauna species.</li> </ul> Key ecological features are: <ul style="list-style-type: none"> <li>ancient coastline between 90 m and 120 m depth</li> <li>demersal slope and associated fish communities of the Central Western Province</li> <li>western rock lobster.</li> </ul> This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions and white sharks, and a migratory pathway for humpback and pygmy blue whales.
		<b>Cultural values</b> 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. The Noongar people have responsibilities for Sea Country in this marine park. Traditional Owners have strong stories that connect ocean and land. Artefacts from ancestors are abundant on islands in the adjacent State marine park. The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.

South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park. This marine park contains two known shipwrecks listed under the Historic Shipwrecks Act 1976—<i>SS Cambewarra</i> (wrecked in 1914) and <i>Oleander</i> (wrecked in 1884).</p> <p><b>Social and economic values</b> Tourism, commercial fishing, mining and recreation, including fishing, are important activities in this marine park.</p>
Murat Marine Park	National Park Zone (II)	<p><b>Description</b> The Murat Marine Park is located 86 km off the west coast south-west of Ceduna, south of the South Australian Nuyts Archipelago Marine Park. This marine park covers an area of 938 km<sup>2</sup> and is relatively shallow, with water depths between less than 15 m and 70 m.</p> <p><b>Natural values</b> This marine park includes examples of ecosystems representative of the Great Australian Bight Shelf Transition—a vast and shallow area characterised by an extensive area of flat continental shelf. The invertebrate communities that inhabit the seafloor are among the most diverse in the world. The inshore areas of the bioregion are globally important for the threatened southern right whale and the Australian sea lion. Key ecological features are:</p> <ul style="list-style-type: none"> <li>• benthic invertebrate communities of the eastern Great Australian Bight</li> <li>• small pelagic fish of the South-west Marine Region.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds and Australian sea lions.</p> <p><b>Cultural values</b> 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. The Mirning people have a strong attachment to land and Sea Country of the Nullarbor, while the Wirangu people have a strong attachment to land and Sea Country across the remainder of the far west coast region. The care and protection of the waters, coastline, marine creatures, marine environments and sea resources correspond directly with cultural stories and important cultural sites and knowledge. South Australian Native Title Services is the native title service provider for the South Australian region.</p> <p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Social and economic values</b></p> <p>The remoteness of this marine park makes access difficult with most recreational and tourism activities confined to State waters. Commercial ships may pass through this Marine Park to and from the port of Ceduna.</p>
Perth Canyon Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI)	<p><b>Description</b></p> <p>The Perth Canyon Marine Park is located approximately 52 km west of Perth and approximately 19 km west of Rottnest Island. This marine park covers an area of 7409 km<sup>2</sup> and water depths range between 120 m and 5000 m.</p> <p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Central Western Province—characterised by a narrow continental slope incised by many submarine canyons, including Perth Canyon, and the most extensive area of continental rise in any of Australia's marine regions. A significant feature within the area are several eddies that form off the Leeuwin Current at predictable locations, including the Perth Canyon.</li> <li>• South-west Shelf Province—marine life in this area is diverse and influenced by the warm waters of the Leeuwin Current.</li> <li>• South-west Transition—significant features of this area include the submarine canyons that incise the northern parts of the slope and the deep-water mixing that results from the dynamics of major ocean currents when these meet the seafloor, particularly in the Perth Canyon.</li> <li>• South-west Shelf Transition—consists of a narrow continental shelf that is noted for its physical complexity. The Leeuwin Current has a significant influence on the biodiversity of this nearshore area as it pushes subtropical water southward along the area's western edge. The area contains a diversity of tropical and temperate marine life including many endemic fauna species.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Perth Canyon and adjacent shelf break, and other west-coast canyons</li> <li>• demersal slope and associated fish communities of the Central Western Province</li> <li>• western rock lobster</li> <li>• mesoscale eddies.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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 Marine Park Network	IUCN Zones	Natural Values
		<p><b>Cultural values</b> 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.</p> <p>The Swan River Traditional Owners have responsibilities for Sea Country in this marine park. Traditional Owners have maintained cultural responsibilities for Sea Country as passed down from elders, to keep the oceans healthy, to support spiritual wellbeing and to uphold and protect obligatory cultural responsibilities for future generations. The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.</p> <p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b> Tourism, commercial shipping, commercial fishing, recreation, including fishing, and defence training are important activities in this marine park.</p>
Southern Kangaroo Island Marine Park	Special Purpose Zone (Mining Exclusion) (VI)	<p><b>Description</b> The Southern Kangaroo Island Marine Park is located approximately 140 km south-west of Adelaide, adjacent to the South Australian Kangaroo Island Marine Park. This marine park covers an area of 630 km<sup>2</sup> extending from the South Australian State water boundary, and water depth ranges between 15 m and 100 m.</p> <p><b>Natural values</b> The marine park includes examples of ecosystems representative of the Spencer Gulf Shelf. Seasonal winds and ocean currents interact with seafloor features to produce small seasonal upwellings that are important for biological productivity. The area is noted for its diverse seafloor communities, productivity hotspots and aggregations of marine life associated with seasonal upwellings of nutrient-rich water.</p> <p>A key ecological feature of this marine park is the Kangaroo Island Pool, canyons and adjacent shelf break, and Eyre Peninsula upwellings.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions and white sharks and a calving buffer area for southern right whales.</p> <p><b>Cultural values</b> 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. South Australian Native Title Services is the Native Title Service Provider for the South Australian region.</p> <p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Social and economic values</b></p> <p>Tourism, commercial fishing and recreation are important activities in this marine park. The Kangaroo Island community values the island's unique qualities and character.</p>
South-west Corner Marine Park	National Park (II) Habitat Protection (IV) Multiple Use (VI) Special Purpose (VI) Special Purpose (Mining Exclusion)	<p><b>Description</b></p> <p>The South-west Corner Marine Park is located adjacent to the Western Australian Ngari Capes Marine Park, covering an extensive offshore area that is closest to Western Australia State waters approximately 48 km west of Esperance, 73 km west of Albany and 68 km west of Bunbury, and extends to the edge of Australia's exclusive economic zone. This marine park covers an area of 271,833 km<sup>2</sup> and a water depth range from less than 15 m to 6400 m.</p> <p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Southern Province—includes the deepest ocean areas of the Australian exclusive economic zone, reaching depths of around 5,900 m, and is characterised by a long continental slope incised by numerous, well-developed submarine canyons and the Diamantina Fracture Zone, a rugged area of deep seafloor comprising seamounts and many ridges and troughs.</li> <li>• South-west Transition—the main features of this area are the Naturaliste Plateau, the deepest submarine plateau along Australia's continental margins. The Naturaliste Plateau supports rich and diverse biological communities. Deep-water mixing results from the dynamics of major ocean currents when these meet the seafloor.</li> <li>• South-west Shelf Province—marine life in this area is diverse and influenced by the warm waters of the Leeuwin Current. A small upwelling of nutrient-rich water off Cape Mentelle during summer increases productivity locally, attracting aggregations of marine life.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Albany Canyon group and adjacent shelf break</li> <li>• Cape Mentelle upwelling</li> <li>• Diamantina Fracture Zone</li> <li>• Naturaliste Plateau</li> <li>• western rock lobster</li> <li>• ancient coastline between 90 m and 120 m depth.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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.</p>

South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Cultural values</b> 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.</p> <p>The Nyungar/Noongar people have responsibilities for Sea Country in this marine park. Traditional Owners have maintained cultural responsibilities for Sea Country as passed down from elders, to keep the oceans healthy, to support spiritual wellbeing and to uphold and protect obligatory cultural responsibilities for future generations.</p> <p>The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.</p> <p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to the marine park. This marine park contains 10 known shipwrecks listed under the Historic Shipwrecks Act 1976.</p> <p><b>Social and economic values</b> Tourism, commercial fishing, commercial shipping, and recreation, including fishing, are important activities in this marine park.</p>
Twilight Marine Park	National Park Zone (II) Special Purpose Zone (Mining Exclusion) (VI)	<p><b>Description</b> The Twilight Marine Park is located approximately 245 km south-west of Eucla and 373 km north-east of Esperance, adjacent to the Western Australian State water boundary. This marine park covers an area of 4641 km<sup>2</sup> and water depths between less than 15 m and 70 m.</p> <p><b>Natural values</b> This marine park includes ecosystems representative of the Great Australian Bight Shelf Transition—a vast and shallow area characterised by an extensive area of flat continental shelf. There are diverse invertebrate communities inhabiting the seafloor. The inshore areas of the bioregion are globally important for the threatened southern right whale and the Australian sea lion. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions and white sharks, and a calving buffer area for southern right whales.</p> <p><b>Cultural values</b> 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.</p> <p>The Mirning and Spinifex people have responsibilities for Sea Country in this marine park. Local Traditional Owners recognise Kaart, Koort and Waarnginy (head, heart and talking) as bringing together the narratives and protocols that have been practiced for thousands of years and the kinship that influences all stages and cycles of life. Traditional Owners have responsibility for cultural values and are focussed on the creation and regeneration of spiritual, ethical, cultural and practical benefits and opportunities for marine systems.</p> <p>The Goldfields Land and Sea Council is the Native Title Representative Body for the Goldfields region.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b> Tourism and commercial and recreational fishing are important activities in this marine park.</p>
Two Rocks Marine Park	Multiple Use (VI)	<p><b>Description</b> The Two Rocks Marine Park is located approximately 25 km north-west of Perth, to the north-west of the Western Australian Marmion Marine Park. The marine park covers an area of 882 km<sup>2</sup>, extending from the Western Australian State water boundary, and a water depth range from 15 m to 120 m.</p> <p><b>Natural values</b> This marine park includes examples of ecosystems representative of the South-west Shelf Transition—an area of narrow continental shelf that is noted for its physical complexity. The Leeuwin Current has a significant influence on the biodiversity of this nearshore area as it pushes subtropical water southward along the area's western edge. The area contains a diversity of tropical and temperate marine life including endemic fauna species. The inshore lagoons are thought to be important areas for benthic productivity and recruitment for marine species. Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Commonwealth marine environment within and adjacent to the west-coast inshore lagoons</li> <li>• western rock lobster</li> <li>• ancient coastline between 90 m and 120 m depth.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park 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.</p> <p><b>Cultural values</b> 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. The Swan River Traditional Owners have responsibilities for Sea Country in this marine park. Traditional Owners have maintained cultural responsibilities for Sea Country as passed down from elders, to keep the oceans healthy, to support spiritual wellbeing and to uphold and protect obligatory cultural responsibilities for future generations. The South West Aboriginal Land and Sea Council is the Native Title Service Provider for the South-west region.</p> <p><b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, recreation, including fishing, and scientific research are important activities in this marine park.</p>
Western Eyre Marine Park	National Park Zone (II) Multiple Use Zone (VI) Special Purpose Zone (VI) Special Purpose Zone (Trawl) (VI)	<p><b>Description</b></p> <p>The Western Eyre Marine Park is located approximately 123 km<sup>2</sup> south-west of Port Lincoln and 28 km west of Streaky Bay, adjacent to South Australia's Investigator, West Coast Bays and Nuyts Archipelago marine parks. This marine park covers an area of 57,944 km<sup>2</sup>, extending from the South Australian State water boundary to the edge of Australia's exclusive economic zone, and water depths range between 15 m and more than 6000 m.</p> <p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Spencer Gulf Shelf—seasonal winds and ocean currents interact with seafloor features to produce a number of small seasonal upwellings that are important for biological productivity. The area is noted for its very diverse seafloor communities, productivity hotspots and aggregations of marine life associated with seasonal upwellings of nutrient-rich water.</li> <li>• Great Australian Bight Shelf Transition—a vast and shallow area, characterised by an extensive area of flat continental shelf. The invertebrate communities that inhabit the seafloor are among the most diverse in the world. The inshore areas of the bioregion are globally important for the threatened southern right whale and the Australian sea lion.</li> <li>• Southern Province—includes the deepest ocean areas of the Australian exclusive economic zone, reaching depths of around 5900 m, and is characterised by a long continental slope; numerous, well-developed submarine canyons; and extensive mid-slope terraces such as the Ceduna Terrace.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• ancient coastline between 90 m and 120 m depth</li> <li>• Kangaroo Island Pool, canyons and adjacent shelf break, and Eyre Peninsula upwellings</li> <li>• mesoscale eddies</li> <li>• benthic invertebrate communities of the eastern Great Australian Bight</li> <li>• small pelagic fish of the South-west Marine Region.</li> </ul> <p>This marine park provides connectivity between deeper offshore waters and the adjacent South Australian Investigator, West Coast Bays and Nuyts Archipelago Marine Parks. Waters surrounding the Nuyts Archipelago and Investigator Group form part of the ecologically important offshore islands that protect the coastline. This marine park is a hotspot for productivity, with feeding aggregations of marine mammals, sharks and seabirds.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and foraging habitat for seabirds, foraging habitat for Australian sea lions, white sharks and pygmy blue and sperm whales, and a calving buffer area for southern right whales.</p>

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South West Marine Park Network	IUCN Zones	Natural Values
		<p><b>Cultural values</b></p> <p>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.</p> <p>The far west coast region of South Australia includes over 1000 km of coastline along the Nullarbor Cliffs of the Great Australian Bight and the Nyuts Archipelago, and supports a sea-based tradition and culture.</p> <p>The Mirning people have a strong connection to land and Sea Country of the Nullarbor, and the Wirangu people have a strong connection to land and Sea Country across the remainder of the far west coastal region. Fishing is woven into the beliefs and values of this region, through the use of resources such as shellfish, periwinkles, abalone and razorfish; and the sharing of traditional fishing knowledge, catch and meals. The care and protection of these waters, the coastline, marine life and resources correspond directly with cultural stories, sites and knowledge.</p> <p>South Australian Native Title Services is the Native Title Service Provider for the South Australian region.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, recreation and mining are important activities in this marine park.</p>
Western Kangaroo Island Marine Park	National Park Zone (II) Special Purpose Zone (Mining Exclusion) (VI) Special Purpose Zone (VI)	<p><b>Description</b></p> <p>The Western Kangaroo Island Marine Park is located approximately 230 km south-west of Adelaide and 110 km south of Port Lincoln, adjacent to the South Australian Western Kangaroo Island Marine Park. The marine park covers an area of 2335 km<sup>2</sup> and water depths range between 15 m and 165 m.</p> <p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of the Spencer Gulf Shelf. Seasonal winds and ocean currents interact with seafloor features to produce a number of small seasonal upwellings that are important for biological productivity. The area is noted for its diverse seafloor communities, productivity hotspots and aggregations of marine life associated with the seasonal upwellings of nutrient rich water.</p> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>the ancient coastline between 90 m and 120 m depth</li> <li>Kangaroo Island Pool, canyons and adjacent shelf break, and Eyre Peninsula upwellings.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat for seabirds, Australian sea lions, white sharks and pygmy blue and sperm whales, and a calving buffer area for southern right whales.</p>

South West Marine Park Network	IUCN Zones	Natural Values
		<b>Cultural values</b> 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. South Australian Native Title Services is the Native Title Service Provider for the South Australian region.
		<b>Heritage values</b> No international, Commonwealth or national heritage listings apply to this marine park.
		<b>Social and economic values</b> Tourism, commercial fishing and recreation are important activities in this marine park. The Kangaroo Island community values the island's unique qualities and character.

#### 11.5.4 North Marine Park Network

Table 11-4 describes the Commonwealth marine parks within the North Marine Park Network according to the North Marine Park Network Management Plan 2018 (DNP, 2018c).

**Table 11-4: Summary of Commonwealth AMPs for the North Marine Park Network**

North Marine Park Network	IUCN Zones	Values
Arafura Marine Park	Multiple Use Zone (VI) Special Purpose Zone (VI)	<b>Description</b> The Arafura Marine Park is located approximately 256 km north-east of Darwin and 8 km offshore of Croker Island, Northern Territory. It extends from Northern Territory waters to the limit of Australia's exclusive economic zone. This marine park covers an area of 22,924 km <sup>2</sup> , and a water depth range from less than 15 m to 500 m.

North Marine Park Network	IUCN Zones	Values
	Special Purpose Zone (Trawl) (VI)	<p><b>Natural values</b></p> <p>The Arafura Marine Park includes examples of ecosystems representative of:</p> <ul style="list-style-type: none"> <li>Northern Shelf Province—a dynamic region, with gently sloping shelf topped with a number of pinnacles at depths ranging from 5 m to 30 m. Tidal eddies induce localised upwellings and hotspots of productivity, which correspond with aggregations of marine life within this Marine Park.</li> <li>Timor Transition Province—includes continental slope, canyons, ridges, terraces and the Arafura Depression. The primary drivers of biological productivity are associated with deepwater upwellings at canyon heads, driven by strong tides.</li> </ul> <p>The key ecological feature in this marine park is the tributary canyons of the Arafura Depression. The canyons channel deep ocean waters, enhancing productivity and supporting large predatory fish, whale sharks, sawfish and marine turtles, deep sea sponges, and barnacles.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include interesting habitat for marine turtles and important foraging and breeding habitat for seabirds.</p> <p><b>Cultural values</b></p> <p>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.</p> <p>The Yuwurrumu members of the Mandilarri-Ildugij, the Mangalara, the Murran, the Gadura-Minaga and the Ngaynjaharr clans have responsibilities for Sea Country in this marine park. These clans have native title determined over part of their Sea Country, which is included in this marine park. The Northern Land Council is the Native Title Representative Body for the Northern Territory's northern region and is assisting these native title holders in the absence of a native title Prescribed Body Corporate. It is the point of contact for this marine park.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing, tourism, and recreation, including fishing, are important activities in this marine park.</p>
Arnhem Marine Park	Special Purpose Zone (VI)	<p><b>Description</b></p> <p>The Arnhem Marine Park is located approximately 100 km south-east of Croker Island and 60 km south-east of the Arafura Marine Park. It extends from Northern Territory waters surrounding the Goulburn Islands, to the waters north of Maningrida. This marine park covers an area of 7125 km<sup>2</sup> and water depth ranges from less than 15 m to 70 m.</p>

North Marine Park Network	IUCN Zones	Values
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of the Northern Shelf Province. Internal currents in the region drive a net clockwise movement of nutrient-rich coastal water contributing to high biological diversity. Tidal eddies induce localised upwellings and hotspots of productivity that correspond with aggregations of marine life within this marine park. This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging habitat and a migratory pathway for marine turtles and seabirds.</p>
Gulf of Carpentaria Marine Park	National Park Zone (II) Special Purpose Zone (Trawl) (VI)	<p><b>Description</b></p> <p>The Gulf of Carpentaria Marine Park is located approximately 90 km north-west of Karumba, Queensland and is adjacent to the Wellesley Islands in the south of the Gulf of Carpentaria basin. This Marine Park covers an area of 23,771 km<sup>2</sup> and water depths range from less than 15 m to 70 m.</p>
		<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of the Northern Shelf Province—a dynamic region with a gently sloping shelf topped with a number of pinnacles at depths ranging from 5 m to 30 m. Tidal eddies induce localised upwellings and hotspots of productivity that correspond with aggregations of marine life within the marine park.</p> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Gulf of Carpentaria basin</li> <li>• Gulf of Carpentaria coastal zone</li> <li>• plateaux and saddle north-west of the Wellesley Islands</li> <li>• submerged coral reefs of the Gulf of Carpentaria.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and foraging areas for seabirds and interesting and foraging areas for turtles.</p>

North Marine Park Network	IUCN Zones	Values
		<p><b>Cultural values</b></p> <p>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.</p> <p>The Lardil, Yangkaal, Kaiadlit and Gangalidda people of the Wellesley Islands have a continuing spiritual connection with their Sea Country and responsibilities for managing that country. They have had their native title rights recognised.</p> <p>Both the Thuwathu-Bujimulla Indigenous Protected Area (IPA) and the Wellesely Island Sea Claim determination extend over part of the Gulf of Carpentaria Marine Park. The Thuwathu-Bujimulla IPA includes 160 sites of cultural heritage significance and the largest collection of stone fish traps in the southern hemisphere.</p> <p>The Lardil, Yangkaal, Kaiadlit and Gangalidda people of the Wellesley Islands hold a wealth of cultural knowledge about their islands and Sea Country. They recognise the presence of the Rainbow Serpent (Thuwathu or Bujimulla) in cyclones, waterspouts and rainbows, and understand that the Rainbow Serpent has the power to cause a special type of sickness known as Markiriil in Lardil. They also consider that there are dangerous places on their country where spirits can do you harm if you are not accompanied by the right people for that area. Many prominent marine features, such as reefs, rocks, oyster banks or sand bars have their own specific names. Among these named sites are special 'story places', where significant events happened in the past, where people carry out ritual activities to maintain particular animal or plant species, or which are responsible for making tidal floods, cyclones or strong winds.</p> <p>The Lardil people, as the Traditional Owners of Mornington Island and surrounding Sea Country, are recognised as the people of the Wellesley Islands with the authority to speak for Sea Country within the Gulf of Carpentaria Marine Park. The Gulf Region Aboriginal Corporation Prescribed Body Corporate represents the Lardil, Yangkaal, Kaiadlit and Gangalidda native title holders of the Wellesley Islands and is the point of contact for this Marine Park. The Carpentaria Land Council Aboriginal Corporation is the Native Title Representative Body for the region.</p> <p><b>Heritage values</b></p> <p>This marine park contains four known shipwrecks listed under the Historic Shipwrecks Act 1976—<i>Douglas Mawson</i> (wrecked in 1923); <i>A.D.C.</i> (wrecked in 1886); <i>Wild Duck</i> (wrecked in 1876); and <i>Ada</i> (wrecked 1886).</p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing, tourism, and recreation, including fishing, are important activities in this marine park.</p>
Limmen Marine Park	Habitat Protection Zone (IV)	<p><b>Description</b></p> <p>The Limmen Marine Park is located approximately 315 km south-west of Nhulunbuy, Northern Territory, in the south-west of the Gulf of Carpentaria. It extends from Northern Territory waters, between the Sir Edward Pellew Group of Islands and Maria Island in the Limmen Bight, adjacent to the Northern Territory Limmen Bight Marine Park. This marine park covers an area of 1399 km<sup>2</sup> and water depths range from less than 15 m to 70 m.</p>

North Marine Park Network	IUCN Zones	Values
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of the Northern Shelf Province—a dynamic region with gently sloping shelf, topped with a number of pinnacles at depths ranging from 5 m to 30 m. Tidal eddies induce localised upwellings and hotspots of productivity that correspond with aggregations of marine life within this marine park.</p> <p>The key ecological feature in this marine park is the Gulf of Carpentaria coastal zone—nutrients from rivers flowing into the coastal zone support high productivity and diverse biota. A prominent seafloor feature within this marine park is the Labyrinthian Shoals, a group of sand banks, some with rocky heads, in depths of less than 1.8 m.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include interesting and foraging habitat for marine turtles.</p> <p><b>Cultural values</b></p> <p>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.</p> <p>The Marra people have responsibilities for Sea Country in this marine park, and share song-lines that travel through this Marine Park with the Yanyuwa People. The Northern Land Council is the Native Title Representative Body for the Northern Territory's northern region.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing, tourism, and recreation, including fishing, are important activities in this marine park.</p>
Wessel Marine Park	Habitat Protection Zone (IV) Special Purpose Zone (Trawl) (VI)	<p><b>Description</b></p> <p>The Wessel Marine Park is located approximately 22 km east of Nhulunbuy, Northern Territory. It extends from Northern Territory waters adjacent to the tip of the Wessel Islands to Northern Territory waters adjacent to Cape Arnhem. This marine park covers an area of 5908 km<sup>2</sup> and water depths between 15 m and 70 m.</p>



North Marine Park Network	IUCN Zones	Values
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of the Northern Shelf—a dynamic region with gently sloping shelf topped with a number of pinnacles at depths ranging from 5 m to 30 m. Tidal eddies induce localised upwellings and hotspots of productivity that correspond with aggregations of marine life within this marine park.</p> <p>The key ecological feature in this marine park is the Gulf of Carpentaria basin—characterised by soft sediments that support abundant and diverse communities dominated by polychaetes, crustaceans, molluscs and echinoderms, with pelagic fish species such as shark, snapper, tuna and mackerel.</p> <p>This marine park overlaps the Arafura Sill, which is a seafloor barrier that restricts movement of water into the Gulf of Carpentaria basin and forms a distinct biogeographical transition point for sessile invertebrate (e.g. sponges and corals) and fish species.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding habitat for seabirds and interesting and foraging habitat for marine turtles.</p> <p><b>Cultural values</b></p> <p>Sea Country is valued for Indigenous cultural identity, health and wellbeing. Indigenous people have been sustainably using and managing their Sea Country for tens of thousands of years.</p> <p>The Yolŋu people have responsibilities for Sea Country in this marine park. This marine park contains sites which are registered under the Northern Territory Aboriginal Sacred Sites Act 1989 (NT). The Northern Land Council is the Native Title Representative Body for the Northern Territory's northern region.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing, tourism, and recreation, including fishing, are important activities in this marine park.</p>
West Cape York Marine Park	National Park Zone (II) Habitat Protection Zone (IV)	<p><b>Description</b></p> <p>The West Cape York Marine Park is located adjacent to the northern end of Cape York Peninsula approximately 25 km south-west of Thursday Island and 40 km north-west of Weipa, Queensland. It extends from Queensland State waters to the limit of Australia's exclusive economic zone. This Marine Park covers an area of 16,012 km<sup>2</sup> and water depths range from less than 15 m to 70 m.</p>

North Marine Park Network	IUCN Zones	Values
	Special Purpose Zone (VI)	<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of:</p> <ul style="list-style-type: none"> <li>• Northeast Shelf Transition—includes continental shelf, shallow water depths and high bottom salinity. It is influenced by tidal currents and has sandy substrates and reefs supporting benthic marine communities, reef-dwelling and pelagic species.</li> <li>• Northern Shelf Province—a dynamic region with gently sloping shelf topped with a number of pinnacles at depths ranging from 5 m to 30 m. Tidal eddies induce localised upwellings and hotspots of productivity that correspond with aggregations of marine life within this marine park.</li> </ul> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• Gulf of Carpentaria basin</li> <li>• Gulf of Carpentaria coastal zone.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include breeding and foraging habitat for seabirds, internesting and foraging habitat for marine turtles and dugong, and foraging, breeding and calving habitat for dolphins.</p> <p><b>Cultural values</b></p> <p>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.</p> <p>Torres Strait Islanders and coastal First Nations people of the west coast of Cape York have responsibilities for Sea Country in this marine park.</p> <p>The Cape York Land Council is the Native Title Representative Body for the Cape York region, which includes most of this marine park. The Carpentaria Aboriginal Land Council and the Torres Strait Regional Authority also perform the function of Native Title Representative Bodies for parts of this marine park.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to the marine park.</p> <p>The marine park contains one known shipwreck listed under the Historic Shipwrecks Act 1976.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing, tourism, and recreation, including fishing, are important activities in this marine park.</p>
Oceanic Shoals	National Park Zone (II) Multiple Use (VI) Oceanic Shoals Special Purpose (Trawl) (VI)	<p><b>Description</b></p> <p>The Oceanic Shoals Marine Park is located west of the Tiwi Islands, approximately 155 km north-west of Darwin, Northern Territory and 305 km north of Wyndham, Western Australia. It extends to the limit of Australia's exclusive economic zone.</p> <p>The marine park covers an area of 71,743 km<sup>2</sup> and water depths from less than 15 m to 500 m.</p>

North Marine Park Network	IUCN Zones	Values
	Habitat Protection (IV)	<p><b>Natural values</b></p> <p>This marine park includes ecosystems representative of the Northwest Shelf Transition—a dynamic environment influenced by strong tidal currents, upwellings of nutrient-rich waters, and a range of prominent seafloor features. The pinnacles, carbonate banks and shoals are sites of enhanced biological productivity.</p> <p>Key ecological features are:</p> <ul style="list-style-type: none"> <li>• carbonate bank and terrace systems of the Van Diemen Rise</li> <li>• carbonate bank and terrace system of the Sahul Shelf</li> <li>• pinnacles of the Bonaparte Basin</li> <li>• shelf break and slope of the Arafura Shelf.</li> </ul> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this marine park include foraging and internesting habitat for marine turtles.</p> <p><b>Cultural values</b></p> <p>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. At the commencement of this plan, there was limited information about the cultural significance of this marine park.</p> <p>The Northern Land Council and the Kimberley Land Council are the Native Title Representative Bodies for the Northern Territory's northern region, and the Kimberley region. The Tiwi Land Council collectively represents Traditional Owners of the Tiwi Islands.</p> <p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park.</p> <p><b>Social and economic values</b></p> <p>Commercial fishing and mining are important activities in this marine park.</p>
Joseph Bonaparte Gulf Marine Park	Multiple Use Zone (VI) Special Purpose Zone (VI) (NMR only)	<p><b>Description</b></p> <p>The Joseph Bonaparte Gulf Marine Park is located approximately 15 km west of Wadeye, Northern Territory, and approximately 90 km north of Wyndham, Western Australia, in the Joseph Bonaparte Gulf. It is adjacent to the Western Australian North Kimberley Marine Park. This marine park covers an area of 8597 km<sup>2</sup> and water depth ranges between less than 15 m and 100 m.</p>

North Marine Park Network	IUCN Zones	Values
		<p><b>Natural values</b></p> <p>This marine park includes examples of ecosystems representative of the Northwest Shelf Transition—a dynamic environment influenced by strong tidal currents, monsoonal winds, cyclones and wind generated waves. The large tidal ranges and wide intertidal zones near this marine park create a physically dynamic and turbid marine environment.</p> <p>The key ecological feature in this marine park is the carbonate bank and terrace system of the Sahul Shelf—characterised by terraces, banks, channels and valleys supporting sponges, soft corals, sessile filter feeders, polychaetes and ascidians.</p> <p>This marine park supports a range of species listed under the EPBC Act. Biologically important areas within this Marine Park include foraging habitat for marine turtles and the Australian snubfin dolphin.</p>
		<p><b>Cultural values</b></p> <p>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. The Miriung, Gajerrong, Doolboong, Wardenybung and Gija and Balangarra people have responsibilities for Sea Country in this marine park. They are represented by the following Prescribed Bodies Corporate: Miriung and Gajerrong Aboriginal Corporation, and Balangarra Aboriginal Corporation. These corporations are the points of contact for their respective areas of Sea Country in this marine park. The Northern Land Council and the Kimberley Land Council are the Native Title Representative Bodies for the Northern Territory's northern region, and the Kimberley region.</p>
		<p><b>Heritage values</b></p> <p>No international, Commonwealth or national heritage listings apply to this marine park; however, this marine park is adjacent to the West Kimberley National Heritage Place.</p>
		<p><b>Social and economic values</b></p> <p>Tourism, commercial fishing, mining, and recreation including fishing, are important activities in this marine park.</p>

## 11.6 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, or NMR as indicated by the PMST Reports (Appendix A). The Monsoon vine thickets (which is a TEC) occurs on the coastal dunes of Dampier Peninsula (NWMR). The subtropical and temperate coastal saltmarsh (which is a TEC) occurs within the marine water of the SWMR. Both TECs are described in Table 11-5.

**Table 11-5: Summary of threatened ecological communities within the NWMR, NMR and SWMR**

Threatened Ecological Community	Description	Conservation Values
<b><i>Threatened Ecological Communities in the NWMR</i></b>		
Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula	<p>The ecological community represents certain occurrences of monsoon vine thickets in the southwest Kimberley region of Western Australia, predominantly restricted to the coastlines of the Dampier Peninsula from Broome in the south to One Arm Point in the north and on the northeastern coast of the Peninsula from One Arm Point to Goodenough Bay (DSEWPac, 2013d).</p> <p>The TEC occurs as discontinuous patches of dense vegetation and contains approximately 23% of vascular plant species that occur on the Dampier Peninsula. The ecological community contains deciduous, semi-deciduous and evergreen perennial flora species (DSEWPac, 2013d).</p>	<p>The Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula TEC is listed as endangered (DSEWPac, 2013d).</p> <p>The extent of the ecological community corresponds to country (the traditional lands) of the Bardi Jawi, Djabera Djabera, Goolaraballoo, Jabirr Jabirr, Nyul Nyul and Yawuru Indigenous people. The ecological community is of cultural significance (DSEWPac, 2013d).</p> <p>Patches of the TEC operate as an ecological network with birds, mammals and frugivore species providing connectivity. The vegetation provides refuge for animals (DSEWPac, 2013d).</p>
<b><i>Threatened Ecological Communities in the NMR</i></b>		
N/A		
<b><i>Threatened Ecological Communities in the SWMR</i></b>		
Subtropical and Temperate Coastal Saltmarsh	<p>The ecological community spans six state jurisdictions: Queensland (southern), New South Wales, Victoria, Tasmania, South Australia and Western Australia (south-western) (DSEWPac, 2013c). The TEC occupies a relatively narrow strip along the Australian coast, in areas which have an intermittent or regular tidal influence.</p> <p>The coastal saltmarsh community consists mainly of salt-tolerant vegetation including grasses, herbs, sedges, rushes and shrubs (Adam, 1990 cited in DSEWPac, 2013c).</p>	<p>The Subtropical and Temperate Coastal Saltmarsh TEC is listed as vulnerable (DCCEEW, 2023a). This TEC consists of organisms including and associated with saltmarsh in coastal regions of sub-tropical and temperate Australia (DSEWPac, 2013c).</p> <p>A wide range of infaunal and epifaunal invertebrates and low and high tide visitors such as fish, birds and prawns also inhabit the TEC (DSEWPac, 2013c). It is reported as an important nursery habitat for fish and prawn species. The dominant marine residents are benthic invertebrates, including molluscs and crabs (Ross et al., 2009 cited in DSEWPac, 2013c) with insects also abundant and considered an important food source for fauna (DSEWPac, 2013c).</p>

## 11.7 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 economic exclusion zone (i.e. out to 200 NM and further in some places). Within the Australian Whale Sanctuary it is an offence to kill, injure or interfere with a cetacean. Severe penalties apply to anyone convicted of such offences.

## 11.8 State Marine Parks and Reserves

State Marine Parks and Reserves, proclaimed under the *Conservation and Land Management Act 1984* (WA) (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 10 occurring in the NWMR (Table 11-6) and six occurring in the SWMR (Table 11-7).

Three new marine parks were established in 2022 in the Buccaneer Archipelago of the Kimberley. Boundaries commenced on 1 July 2023. The parks have been co-designed and are joint-managed by Traditional Owners, alongside the Department of Biodiversity, Conservation and Attractions (DBCA, 2021b). The three new marine parks are:

- Bardi Jawi Gaarra Marine Park
- Lalang-gaddam Marine Park (formed from the amalgamation of Lalang-garram/Camden Sound Marine Park, Lalang-garram/Horizontal Falls Marine Park, North Lalang-garram Marine Park and Maiyalam Marine Park along Western Australia's Kimberley Coast)
- Mayala Marine Park.

There is a marine park to be defined in the Exmouth Gulf (EPA, 2022). The Exmouth Gulf Taskforce Interim Report to the Minister for Environment (DWER, 2023) outlines the values and recommended management approach of the Exmouth Gulf Marine Park.

## 11.9 Summary of Protected Areas Within the NWMR

Table 11-6: Protected areas within the NWMR

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
World Heritage Properties					
Shark Bay World Heritage Property	-	-	✓		<b>Description</b> The Shark Bay World Heritage Property is adjacent to the Shark Bay AMP and was included on the World Heritage List in 1991 (UNESCO, 1991).
					<b>Conservation Values</b> 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 (UNESCO, 1991).
The Ningaloo Coast World Heritage Property	-	-	✓		<b>Description</b> The Ningaloo Coast World Heritage Property is approximately 710,000 ha and lies within the Ningaloo AMP and was included on the World Heritage List in 2011 (UNESCO, 2011).
					<b>Conservation Values</b> 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 (UNESCO, 2011).
National Heritage Places—Natural					
Shark Bay	-	-	✓		<b>Description</b> 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 (DEC, 2008).

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<b>Conservation Values</b> This 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 (DEC, 2008).
The Ningaloo Coast	-	-	✓		<b>Description</b> The Ningaloo Coast National Heritage Place consists of the same area included in the Ningaloo Coast World Heritage Property (refer above) and was established on the National Heritage List in 2010 (Commonwealth of Australia, 2010).
					<b>Natural Values</b> 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. The Ningaloo Coast meets the national heritage listing criteria a, b, c, d and f (Commonwealth of Australia, 2010).
The West Kimberley	✓	✓	-		<b>Description</b> The West Kimberley National Heritage Place covers an area of around 192,000 km <sup>2</sup> located in the north-west of Australia from Broome to Wyndham, and was established on the National Heritage List in 2011 (Commonwealth of Australia, 2011).



Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>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.</p> <p>This national heritage place also contains a remarkable history of First Nations occupation, with many places of Indigenous sacred value.</p> <p>The West Kimberley meets the national heritage listing criteria a, b, c, d, e, f, g, h and i (Commonwealth of Australia, 2011).</p>
<b>Commonwealth Heritage Places—Natural</b>					
Mermaid Reef—Rowley Shoals	-	✓	-		<p><b>Description</b></p> <p>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 (DCCCEEW, n.d.-a).</p>
					<p><b>Conservation Values</b></p> <p>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.</p> <p>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 (DCCCEEW, n.d.-a).</p>
Ashmore Reef National Nature Reserve	✓	-	-		<p><b>Description</b></p> <p>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 (DCCCEEW, n.d.-d).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>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.</p> <p>Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates.</p> <p>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 (DCCEEW, n.d-d).</p>
Scott Reef and Surrounds—Commonwealth Area	✓	-	-		<p><b>Description</b></p> <p>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 (DCCEEW, n.d-e).</p>
					<p><b>Conservation Values</b></p> <p>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.</p> <p>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 (DCCEEW, n.d-e).</p>
Ashmore Reef National Nature Reserve	✓	-	-		<p><b>Description</b></p> <p>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 (DCCEEW, n.d-d).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>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.</p> <p>Ashmore Reef is an important scientific reference area for migratory seabirds, sea snakes and marine invertebrates.</p> <p>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 (DCCEEW, n.d-d).</p>
Scott Reef and Surrounds—Commonwealth Area	✓	-	-		<p><b>Description</b></p> <p>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 (DCCEEW, n.d-e).</p>
					<p><b>Conservation Values</b></p> <p>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.</p> <p>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 (DCCEEW, n.d-e).</p>
Ningaloo Marine Area—Commonwealth Waters	-	-	✓		<p><b>Description</b></p> <p>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 (DCCEEW, n.d-f).</p>

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>The Ningaloo Marine Area Commonwealth Heritage Place provides a migratory pathway for humpback whales and foraging habitat for whale shark.</p> <p>The place is an important breeding area for billfish and manta ray.</p> <p>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 shark, fish and oceanography (DCCEEW, n.d-f).</p>
Yampi Defence Area	✓	-	-		<p><b>Description</b></p> <p>Located 35 km south of Koolan Island the Yampi Defence Area displays a unique mosaic of geographical landforms that is unique to the region. The occurrence of such diverse landscapes within a small area is an unusual occurrence (DCCEEW, n.d.-c).</p> <p><b>Conservation Values</b></p> <p>The Yampi Defence Area occurs at the confluence of three biogeographic regions in the North-west of Australia. It exhibits diverse landforms, soils, and vegetation representative of the sandstone plateaux of the wetter areas of the north-west Kimberley to the broad plains and pindan scrub of the drier areas in the south-west Kimberley. The Yampi peninsula contains one of the richest amphibian records in the Kimberley.</p> <p>The Yampi Defence Area meets the Commonwealth heritage listing criteria a,b,c (DCCEEW, n.d.-c).</p>
Learmonth Air Weapons Range Facility	-	-	✓		<p><b>Description</b></p> <p>Located along the Ningaloo coastline, the Learmonth Air Weapons Range.</p> <p>Facility was one of Australia's most active bombing ranges until 1990. It is of considerable importance in documenting sea level and landform changes since the late Cenozoic period (DCCEEW, n.d.-b).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>The area includes an ancient reef complex and cave fauna that is of exceptional importance. The ages of the reef terraces are key to understanding the timing of uplift events.</p> <p>The Learmonth Air Weapons Range Facility meets the Commonwealth heritage listing criteria a, b and c (DCCEEW, n.d.-b).</p>
<b>Wetlands of International Importance (Ramsar)</b>					
Ashmore Reef National Nature Reserve	✓	-	-	Ramsar	<p><b>Description</b></p> <p>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 (Commonwealth of Australia, 2002b).</p>
					<p><b>Conservation Values</b></p> <p>The 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 Western Australian 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 (Commonwealth of Australia, 2002b).</p>
					<p><b>Cultural Values</b></p> <p>Indonesian fishers have regularly visited Ashmore Reef since the early eighteenth century to fish within the area and use the islands for staging points before travelling to other reefs in the region. Indonesian artefacts have been found on Cartier Island, and West, Middle and East Islands (Commonwealth of Australia, 2002b).</p>
Eighty Mile Beach	-	✓	-	Ramsar	<p><b>Description</b></p> <p>The Eighty Mile Beach Ramsar site covers an area of 1250 km<sup>2</sup>, located along a long section of the Western Australian coastline adjacent to the Eighty Mile Beach AMP (refer below) (CALM, 2003a).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<b>Conservation Values</b> 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 (CALM, 2003a).
Roebuck Bay	-	✓	-	Ramsar	<b>Description</b> The Roebuck Bay Ramsar site covers an area of 550 km <sup>2</sup> , located south of Broome and adjacent to the Roebuck AMP (refer below) (CALM, 2003b).
					<b>Conservation Values</b> The Roebuck Bay Ramsar site is recognised as one of the most important areas for migratory shorebirds in Australia. 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. Roebuck Bay supports one of the largest known populations of Australian snubfin dolphins ( <i>Orcaella heinsohni</i> )—a species with a limited distribution, vulnerable conservation status, and high cultural value (CALM, 2003a; D'Cruz et al., 2022).
Ord River Floodplain	✓			Ramsar	<b>Description</b> 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 site is a nursery, feeding and/or breeding ground for migratory birds, waterbirds, fish, crabs, prawns, and crocodiles. The site supports vulnerable species under the EPBC Act, including: freshwater sawfish ( <i>Pristis microdon</i> ), green sawfish ( <i>Pristis zijsron</i> ) and the Australian painted snipe ( <i>Rostratula australis</i> ). The site is also one of the only two known habitats in WA of the nationally endangered northern river shark ( <i>Glyptis garricki</i> ) (DCCEEW, 2019a).

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>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.</p> <p>In addition, the False Mouths of the Ord are the most extensive mudflat and tidal waterway complex in Western Australia (DCCEEW, 2019a).</p>
<b>Wetlands of National Importance (DAWE, 2019)</b>					
Ashmore Reef	✓	-	-		<p><b>Description</b></p> <p>Ashmore Reef is a shelf-edge platform reef located among the Sahul Banks of north-western Australia. It covers an area of 583 km<sup>2</sup> and consists of three islets surrounded by intertidal reef and sand flats (DCCEEW, 2019b).</p>
					<p><b>Conservation Values</b></p> <p>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.</p> <p>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.</p> <p>The area meets criteria 1, 3, 4 and 5 for inclusion on the Directory of Important Wetlands in Australia (DCCEEW, 2019b).</p>
Mermaid Reef	-	✓	-		<p><b>Description</b></p> <p>Mermaid Reef Marine Park covers an area of around 540 km<sup>2</sup>, located ~280 km west north-west of Broome, and is the most north-easterly atoll of the Rowley Shoals (DCCEEW, 2019b).</p>
					<p><b>Conservation Values</b></p> <p>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.</p> <p>The area meets criteria 1, 2 and 3 for inclusion on the Directory of Important Wetlands in Australia (DCCEEW, 2019b).</p>

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Exmouth Gulf East	-	-	✓		<b>Description</b> Exmouth Gulf East covers an area of 800 km <sup>2</sup> and includes wetlands in the eastern part of Exmouth Gulf, from Giralia Bay; to Urala Creek, Locker Point (DCCEEW, 2019b).
					<b>Conservation Values</b> The Exmouth Gulf East is an outstanding example of tidal wetland systems of the 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 (DCCEEW, 2019b).
Hamelin Pool	-	-	✓		<b>Description</b> Hamelin Pool covers an area of 900 km <sup>2</sup> in the far south-east part of Shark Bay (DCCEEW, 2019b).
					<b>Conservation Values</b> 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 (DCCEEW, 2019b).
Shark Bay East	-	-	✓		<b>Description</b> 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 (DCCEEW, 2019b).



Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>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.</p> <p>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.</p> <p>The area meets criteria 1, 2, 3, 4, 5 and 6 for inclusion on the Directory of Important Wetlands in Australia (DCCEEW, 2019b).</p>
<b>State Marine Parks and Reserves</b>					
North Kimberley Marine Park	✓	-	-	Sanctuary, Special Purpose and General Use Zones	<p><b>Description</b></p> <p>The North Kimberley Marine Park covers 18,450 km<sup>2</sup> with its south-western boundary located ~270 km north-east of Derby (DPAW, 2016a).</p>
					<p><b>Conservation Values</b></p> <p>The marine park covers approximately 1,845,000 hectares. 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).</p>
					<p><b>Social and Economic Values</b></p> <p>The park features diverse wildlife, remarkable scenery and cultural heritage which provides excellent opportunities for tourism experiences, recreational and nature-based activities such as fishing and hunting (DPAW, 2016a).</p>
					<p><b>Cultural Values</b></p> <p>The Wunambal Gaambara, Balanggarra, Ngarinyin and Miriuwung Gajerrong people have strong and ongoing cultural connections to the North Kimberley saltwater country and rely on coastal and marine environments and resources for their cultural identity, livelihoods and economy (DPAW, 2016a).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Rowley Shoals Marine Park	-	✓	-	Sanctuary, Recreation and General Use Zones	<b>Description</b> 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 (DEC, 2007a).
					<b>Conservation Values</b> 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 <sup>2</sup> at the edge of Australia's continental shelf (DEC, 2007a). 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).
					<b>Social and Economic Values</b> Due to its remote location, the Rowley Shoals has low numbers of visitors with most arriving aboard licenced charter boats. Popular activities in the area include scuba diving, recreational fishing, and boating (DEC, 2007a).
Yawuru Nagulagun / Roebuck Bay Marine Park	-	✓	-	Special Purpose Zone	<b>Description</b> Yawuru Nagulagun / Roebuck Bay Marine Park is a series of intertidal flats lying on the coast to the south-east of Broome.
					<b>Conservation Values</b> 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 turtles (DPAW, 2016b).
					<b>Social and Economic Values</b> The marine park is adjacent to Broome and supports tourism activities and provides an active outdoor lifestyle for the residents of the region (DPAW, 2016b).

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Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<b>Cultural Values</b> The Yawuru people have lived along the shores of Roebuck Bay for thousands of years and have a dynamic and enduring relationship with the Yawuru country. The coastline is important for cultural activities and is a place for hunting, fishing, gathering and camping for the Yawuru people (DPAW, 2016b).
Eighty Mile Beach Marine Park	-	✓	-	Sanctuary, Recreation, Special Purpose and General Use Zones	<b>Description</b> Eighty Mile Beach Marine Park covers ~2000 km <sup>2</sup> stretching across 220 km of coastline between Port Hedland and Broome (DPAW, 2014a).
					<b>Conservation Values</b> 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 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, 2014a).
					<b>Social and Economic Values</b> Social values of the marine park include tourism, nature-based recreational activities and commercial fishing (DPAW, 2014a).
					<b>Cultural Values</b> The Karajarri, Nyangumarta and Ngarla people have a powerful connection to the land and sea of this region. Traditional hunting and fishing are important cultural activities for the Traditional Owners of this marine park (DPAW, 2014a).

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area (jointly managed)	-	✓	-	Sanctuary, Recreation, General Use and Special Purpose Zones	<p><b>Description</b></p> <p>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<sup>2</sup>, 42 km<sup>2</sup> and 1147 km<sup>2</sup>, respectively (DEC, 2007b).</p> <p><b>Conservation Values</b></p> <p>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.</p> <p>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).</p> <p><b>Social and Economic Values</b></p> <p>Major commercial fishing and pearling occur within the area which provide employment and economic value to surrounding communities. Nature-based tourism, water sports and recreational fishing are popular recreational activities undertaken in the area (DEC, 2007b).</p> <p><b>Cultural Values</b></p> <p>There are no recorded seabed aboriginal sites within this park. However, it is possible there are aboriginal archaeological sites on the seabed that were created before the most recent sea level rise (DEC, 2007b).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Ningaloo Marine Park and Muiron Islands Marine Management Area (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	<b>Description</b> The Ningaloo Marine Park and Muiron Islands Marine Management Area are located off the North West Cape, ~1200 km north of Perth, and cover areas of ~2633 km <sup>2</sup> and 286 km <sup>2</sup> respectively (CALM, 2005a).
					<b>Ecological Values</b> 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).
					<b>Social and Economic Values</b> The Ningaloo region has a high number of visitors enjoying the area who come to appreciate nature-based tourism which brings important economic value to the communities of the area (CALM, 2005a).
					<b>Cultural Values</b> The Ningaloo Reef has a long history of occupancy by aboriginal communities and aboriginal heritage sites. The Jinigudira and Baiyungu people have lived in this region for thousands of years and use coastal areas for fishing, camping and hunting of turtles and dugongs (CALM, 2005a).

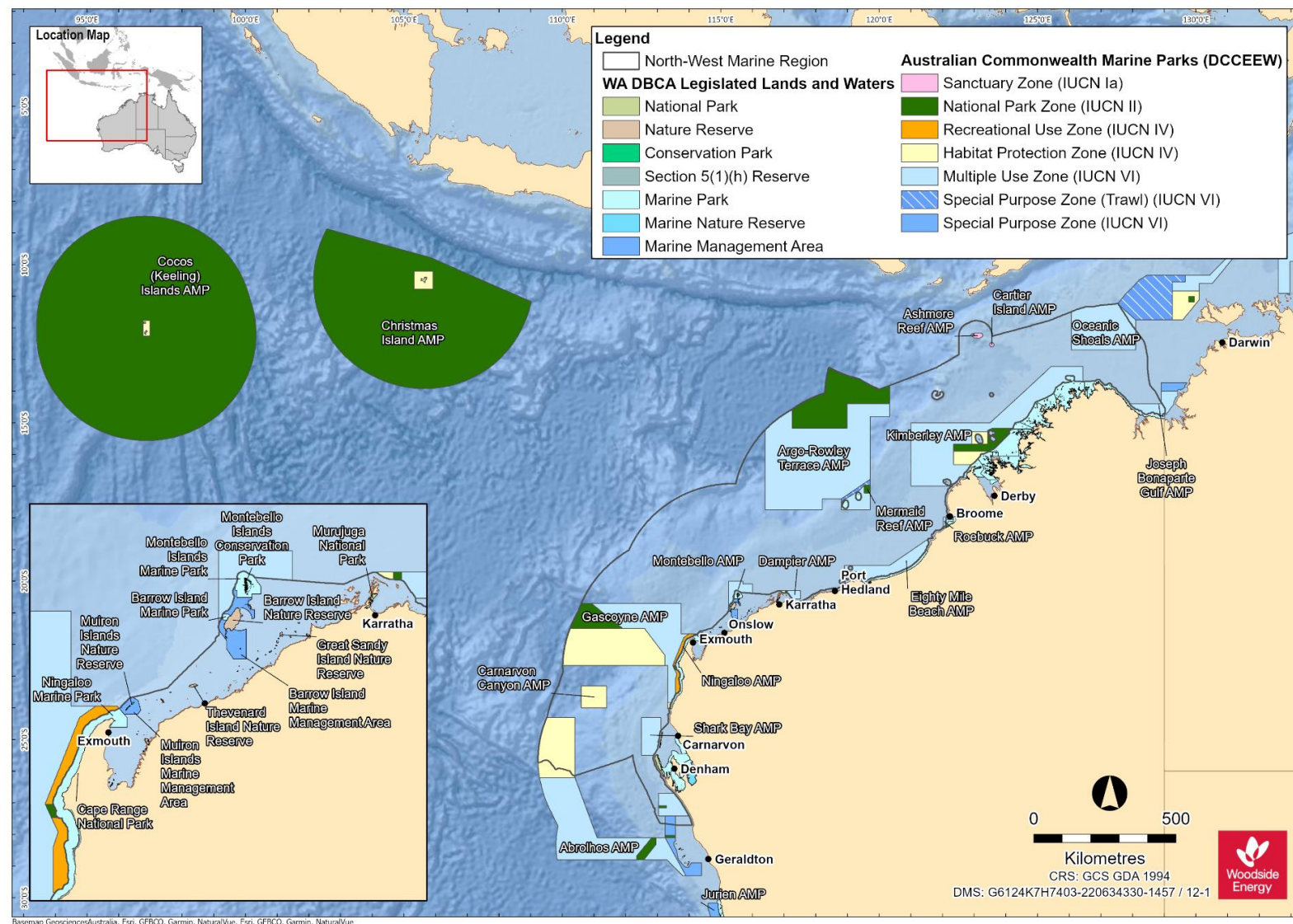
Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Shark Bay Marine Park and Hamelin Pool Marine Nature Reserve (jointly managed)	-	-	✓	Sanctuary, Recreation, General Use and Special Purpose Zones	<p><b>Description</b></p> <p>The Shark Bay Marine Park and Hamelin Pool Marine Nature Reserves are located 400 km north of Geraldton, covering areas of ~7487 km<sup>2</sup> and 1270 km<sup>2</sup>, respectively (CALM, 1996).</p> <p><b>Conservation Values</b></p> <p>Seagrass covers over 4000 km<sup>2</sup> 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.</p> <p>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).</p> <p><b>Social and Economic Values</b></p> <p>Commercial fishing and tourism are important economic values of the region. Popular recreational activities include nature-based tourism, recreational fishing and water sports (DEC, 2008).</p> <p><b>Cultural Values</b></p> <p>The Malgana people occupy the land and waters in the vicinity of Shark Bay and have strong cultural connection to the region. The area is important for cultural practices and for fishing, hunting and camping for the Malgana people (DEC, 2008).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Bardi Jawi Gaarra Marine Park	✓	-	-	Sanctuary, Recreation, Special Purpose Zones (biocultural conservation and cultural protection), and General use	<p><b>Description</b></p> <p>The Bardi Jawi Gaarra Marine Park is located in the West Kimberley region surrounding the northern part of the Dampier Peninsula and the western islands of the Buccaneer Archipelago covering areas of ~2040 km<sup>2</sup>.</p> <p><b>Conservation Values</b></p> <p>The Bardi Jawi Gaarra Marine Park has a tidal range of 11 m, which is the highest in Australia. The mangrove lined creeks, intertidal and fringing reef areas that encompass the coastline and islands are ecologically important and host a vast number of plants and animals that have adapted to the unique area. Migratory marine mammals including humpback whales migrate to the areas between June and November each year to birth their young. Dugongs visit the area in the cooler months from May to July (DBCA, 2022a).</p> <p><b>Social and Economic Values</b></p> <p>Commercial fishing, pearling and aquaculture are important economic activities that occur within this region. The area is a popular tourism destination and hosts a number of recreational activities and water sports (DBCA, 2022a).</p> <p><b>Cultural Values</b></p> <p>The Bardi and Jawi people have a significant connection to the animals, sites and places within this region which are connected by stories and songlines. The Sea Country is used for hunting, fishing, cultural activities and business (DBCA, 2022a).</p>
Lalang-gaddam Marine Park	✓	-	-	Sanctuary, Recreation, General Use and Special Purpose Zones	<p><b>Description</b></p> <p>Amended joint management plan for the Lalang-gaddam / Camden Sound, Lalang-gaddam / Horizontal Falls and North Lalang-gaddam marine parks, and indicative joint management plan for the proposed Maiyalam Marine Park.</p> <p>The Lalang-gaddam Marine Park is located in the Kimberley region of Western Australia and adjacent to Derby and the Shire of Wyndham. The Class A marine park covers ~13,085 km<sup>2</sup> (DBCA, 2022b).</p>

Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
					<p><b>Conservation Values</b></p> <p>The Lalang-gaddam / Camden Sound Marine Park is the most important humpback whale nursery in the Southern Hemisphere. It also features the spectacular coastal Montgomery Reef.</p> <p>The marine park is home to six species of threatened marine turtle. Australian snubfin and Indo-Pacific humpback dolphins, saltwater crocodiles, manta rays, several species of protected sawfish, and the world's large population of dugongs (~12,000).</p> <p>The Lalang-gaddam Marine Park's most celebrated attraction, The Horizontal Falls 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.</p> <p>This marine park has a number of islands fringed with coral reef and has been identified as an ecological hotspot and supports more than 1% of the world's population of brown boobies, with up to 2,000 breeding pairs.</p> <p>Approximately 500 pairs of crested terns also nest on the island (DBCA, 2022b).</p> <p><b>Social and Economic Values</b></p> <p>This marine park has spectacular scenery which attracts a number of tourists and generates approximately \$563 million annually. Recreational fishing and recreational maritime activities are popular within this marine park. Commercial fisheries can operate within the waters of this marine park; however, many do not regularly fish within this area. Pearling and aquaculture occur within this marine park and provide economic value for the region (DBCA, 2022b).</p> <p><b>Cultural Values</b></p> <p>The area is of cultural significance to the Dambeemangarddee people who have lived on the land and cared for land and Sea Country for tens of thousands of years. Some animals such as the barramundi and rock cod have particular cultural significance and are sacred animals to the Dambeemangarddee people. Numerous coastal and marine plants continue to be an important food source for the Traditional Owners of this marine park (DBCA, 2022b).</p>



Protected Area	Woodside Activity Area			IUCN Protected Area Category* or Relevant Park Zone	Description and Values
	Browse	NWS/S	NW Cape		
Mayala Marine Park	✓	-	-	Sanctuary, Recreation, General Use and Special Purpose Zones	<p><b>Description</b></p> <p>The Mayala Marine Park is a Class A reserve located in the West Kimberley region and covers ~3150 km<sup>2</sup> (DBCA, 2022c).</p> <p><b>Conservation Values</b></p> <p>The Mayala Marine Park has a tidal range of 11 m, the highest in Australia. The mangrove lined creeks, intertidal and fringing reef areas that encompass the coastline and islands are ecologically important and host a vast number of plants and animals that have adapted to the unique area. The seagrass communities provide habitat and food for many species including turtles and dugongs.</p> <p>Migratory marine mammals including humpback whales migrate to the areas between June and November each year to birth their young.</p> <p>Dugongs visit the area in the cooler months from May to July (DBCA, 2022c).</p> <p><b>Social and Economic Values</b></p> <p>Due to the extraordinary natural values of the area, the number of visitors to the area has continued to grow over the years. Popular activities within the park include fishing, boating, and wildlife watching. The waters of this area provide optimal conditions for commercial fishing, pearling and aquaculture (DBCA, 2022c).</p> <p><b>Cultural Values</b></p> <p>The area is of exceptional cultural significance to the Malaya people who are true saltwater people and use both land and sea resources and have a strong connection to the land, animals and plants of the region. This marine park has many sacred sites that occur on land and sea which include artefacts, fish traps, and man-made structures. This marine park is culturally significant to the Malaya people who care for country and use this marine park for fishing, hunting and camping (DBCA, 2022c).</p>



**Figure 11-1: Commonwealth and State Marine Protected Areas for the NWMR and Indian Ocean Territories (data source: GA, 2024)**

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## 11.10 Summary of Protected Areas Within the SWMR

Table 11-7: Protected areas within the SWMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
World Heritage Properties		
Australian Convict Sites (Fremantle Prison)		<b>Description</b> Fremantle Prison contains well preserved remnants of the earliest phase of European settlement of Western Australia. The Prison includes 16 intact convict-built structures surrounded by a six-metre-high limestone perimeter wall. The prison is one of the largest surviving convict establishments in the world (DCCEEW, 2021a).
		<b>Conservation Values</b> The Australian Convict Sites represent the global phenomenon of convictism—the forced migration of convicts to penal colonies in the 18th and 19th centuries (DCCEEW, 2021a).
National Heritage Places—Natural		
N/A		
Commonwealth Heritage Places—Natural		
Garden Island		<b>Description</b> Garden Island, and in particular the Cliff Point Historic Site, is highly valued by the community for its cultural associations as the site of first settlement in Western Australia. The absence of feral predators means that Garden Island provides a significant refuge for animals vulnerable to predation on the mainland (DAWE, 2004).
		<b>Conservation Values</b> It is likely that Indigenous values exist at this place. As yet these have not been identified, documented or assessed for National Estate significance by the Australian Heritage Commission. Species of particular interest include the Tammar wallaby ( <i>Macropus eugenii</i> ), carpet python ( <i>Morelia spilota</i> ), and the lined skink ( <i>Lerista lineata</i> ). The parabolic sand dunes on the western side of the island are among the best-preserved dunes of the Quindalup soil unit (DAWE, 2004).
Wetlands of International Importance (Ramsar)		
Becher Point Wetlands	Ramsar	<b>Description</b> 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 <sup>2</sup> .  The site was listed under the Ramsar Convention in 2001 (DPAW, 2014b).

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Conservation Values</b></p> <p>The wetlands support sedgelands, herblands, grasslands, open-shrublands and low open-forests. The sedgelands that occur within the linear wetland depressions of the Ramsar site are a nationally listed threatened environmental community.</p> <p>At least four species of amphibians and 21 species of reptiles have been recorded on the site. The site also supports the southern brown bandicoot.</p> <p>The site meets criteria 1 and 2 of the Ramsar Convention (DPAW, 2014b).</p>
Forrestdale and Thomsons Lakes	Ramsar	<p><b>Description</b></p> <p>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.</p> <p>The site was listed under the Ramsar Convention in 1990 (CALM, 2003c).</p>
		<p><b>Conservation Values</b></p> <p>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.</p> <p>These lakes are the best remaining examples of brackish, seasonal lakes with extensive fringing sedgeland, typical of the Swan Coastal Plain.</p> <p>The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention (CALM, 2003c).</p>
Peel-Yalgorup System	Ramsar	<p><b>Description</b></p> <p>The Peel-Yalgorup System, located adjacent to the City of Mandurah in Western Australia, is a large and diverse system of shallow estuaries, coastal saline lakes and freshwater marshes.</p> <p>The site was listed under the Ramsar Convention in 1990 (CALM, 2003d).</p>
		<p><b>Conservation Values</b></p> <p>The 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 wide variety of waterbird species. It also supports a wide variety of invertebrates, and estuarine and marine fish. The system also includes an occurrence of thrombolites.</p> <p>The site meets criteria 1, 3, 5 and 6 of the Ramsar Convention (CALM, 2003d).</p>

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
Vasse-Wonnerup System	Ramsar	<p><b>Description</b></p> <p>The Vasse-Wonnerup System Ramsar wetland is situated in the Perth Basin, south-western Western Australia. The site was listed under the Ramsar Convention in 1990 (DPAW, 2014b).</p> <p><b>Conservation Values</b></p> <p>The 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.</p> <p>The 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. 13 waterbird species are also known to breed at the Ramsar site, including the largest regular breeding colony of black swans in south-western Australia.</p> <p>The site meets criteria 5 and 6 of the Ramsar Convention (DPAW, 2014b).</p>
Lake Warden System	Ramsar	<p><b>Description</b></p> <p>The Lake Warden System Ramsar site is located adjacent to Esperance, south-western Australia. It is a system of saline lakes, lagoons and marsh areas behind beach-front dunes and at least one relatively narrow connection to the sea. The site was listed under the Ramsar Convention in 1990.</p> <p><b>Conservation Values</b></p> <p>The wetlands within the Lake Warden System form a system of inter-connected lakes and coastal brackish/saline lagoons connected by channels. It provides a significant habitat, nursery and refuge for waterbirds. Supporting up to 20,000 birds regularly. The system supports over 1% of hooded plovers in south-western Australia who breed regularly at the Lake Warden System.</p> <p>It meets criteria 1, 5 and 6 of the Ramsar Convention (DEC, 2009b).</p>
<b>Wetlands of National Importance (DAWE, 2019)</b>		
Rottneest Island Lakes		<p><b>Description</b></p> <p>The Rottneest Island Lakes site is the cluster of 18 lakes and swamps on the north-east part of Rottneest Island (DCCEEW, 2019b).</p>

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Conservation Values</b></p> <p>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.</p> <p>The area meets criteria 1, 2, 3 and 6 for inclusion on the Directory of Important Wetlands in Australia (DCCEEW, 2019b).</p>
<b>State Marine Parks and Reserves</b>		
Jurien Bay Marine Park	Sanctuary, Special Purpose and General Use Zones	<p><b>Description</b></p> <p>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<sup>2</sup> (CALM, 2005b).</p>
		<p><b>Ecological Values</b></p> <p>The Jurien Bay region is dominated by five major marine habitats: seagrass meadows, bare or sparsely vegetated mobile sand, shoreline and offshore intertidal reef platforms, subtidal limestone reefs, and reef pavement. 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).</p>
		<p><b>Social and Economic Values</b></p> <p>Commercial fishing for rock lobster has the highest economic value of any single species commercial fishery in Australia and is important for the economy of the Jurien Bay region. Recreational water activities such as fishing, boating, surfing, diving, and wind surfing are popular within the area (CALM, 2005b).</p>
		<p><b>Cultural Values</b></p> <p>The Nyungar people have occupied the land and waters in this region and depended on coastal resources for more than 30,000 years. There are burial sites, middens and other sites of significance listed within the region (CALM, 2005b).</p>
Marmion Marine Park	Sanctuary, Recreation and Special Use Zones.	<p><b>Description</b></p> <p>The Marmion Marine Park lies within State waters between Trigg Island and Burns Beach and encompasses a coastal area of ~95 km<sup>2</sup>. Marmion Marine Park was the State's first marine park, declared in 1987 (CALM, 1992).</p>



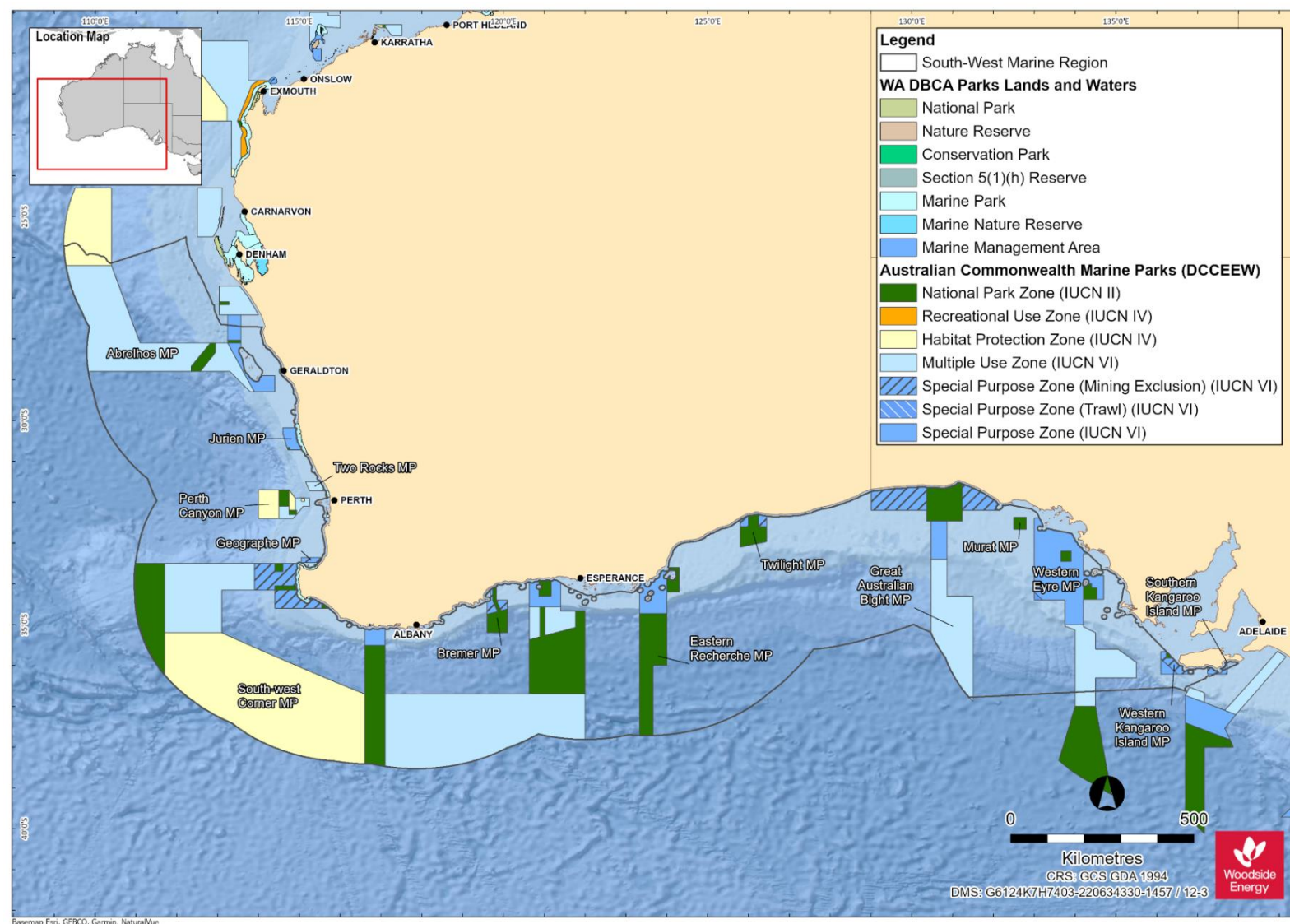
Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<b>Ecological Values</b> The marine park has a number of sanctuary zones including Little Island, The Lumps and the Boyinaboat Reef protecting a variety of habitats from limestone reefs, seagrass beds and clear shallow lagoons that support a diversity of marine life. In addition, there are the general use zone and the Waterman Recreation Area. The marine park contains important habitat for the endemic Australian sea lion, an array of seabird species, and migratory whales are regular visitors (CALM, 1992; DPAW, 2016c).
		<b>Social Values</b> The marine park is popular for recreational water activities including boating, swimming, kayaking, snorkelling, whale watching, kite and windsurfing. Scuba diving and freediving is common at the Boyinaboat Reef which is located close to Hillary's Boat Harbour. Recreational fishing is permitted in most areas (DPAW, 2016c).
South Coast Marine Park	Sanctuary Zone Special Purpose Zone (cultural protection) Special Purpose Zone (whale conservation) Special Purpose Zone (wildlife conservation) General Use Zone	<b>Description</b> The south-west marine park lies within State waters, between Bremer Bay to the WA/SA border.
		<b>Ecological Values</b> The marine park supports seagrass meadows, macroalgae, cetaceans, pinnipeds, shorebirds and seabirds, fish, sharks and rays, and marine invertebrates. The South-west region has some of the highest seagrass and macroalgal diversity globally, approximately half of the species found here occur nowhere else in the world. The marine park supports foraging areas for cetaceans and seabird and shorebirds, and habitat for the Australian sea lion and New Zealand fur seal. The region supports high proportion of endemic species and high diversity of marine invertebrates (DBCA, 2024).
		<b>Social Values</b> The marine park supports recreational and commercial fishing, and recreational activities and tourisms such as, diving and snorkelling, surfing, four-wheel driving, camping, wildlife watching, swimming, kayaking, and boating (DBCA, 2024).
		<b>Cultural and heritage values</b> First Nations people have had connection in the Western Australian south coast for tens of thousands of years. Native title or Traditional Ownership has been recognised for several First Nations groups throughout the region, including the Wagyl Kaip and Southern Noongar Traditional Owners, and the Esperance Nyungar, Ngadju People and Mirning People native title holders.
Swan Estuary Marine Park	Special Purpose and Nature Reserve Zones	<b>Description</b> 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 <sup>2</sup> (CALM, 1999).

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Ecological Values</b></p> <p>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. This Marine Park and adjacent reserves also provide habitat for a diverse assemblage of aquatic and terrestrial flora and fauna (CALM, 1999).</p> <p><b>Social and Economic Values</b></p> <p>Nature-based wildlife tourism operates in the area and this Marine Park supports commercial net fishing. Recreational activities that occur within the area include fishing, bird watching, kayaking, windsurfing, boating, and sightseeing (DBCA, 2023).</p> <p><b>Cultural Values</b></p> <p>The Whadjuk people are the Traditional Owners of the land and waters of Swan Canning Estuary and have frequented the waters of this park for many years. The estuarine and terrestrial habitats provide a source of fish, shellfish, reptiles and birds for hunting (CALM, 1999; DBCA, 2023).</p>
Shoalwater Islands Marine Park	Sanctuary, Special Purpose and General Use Zones	<p><b>Description</b></p> <p>The Shoalwater Islands Marine Park is located adjacent to Rockingham on the south-west coast of Western Australia, ~50 km south of Perth and covers an area of ~66 km<sup>2</sup> (DEC, 2007c).</p> <p><b>Ecological Values</b></p> <p>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 this 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). A recent study has also reported a recurrent aggregation of scalloped hammerheads (<i>Sphyrna lewini</i>) within this marine park (López et al., 2022).</p> <p><b>Social and Economic Values</b></p> <p>Commercial fisheries target a number of species within the area and this marine park also supports a mussel farming industry. Tourism is a popular activity within this marine park and includes water sports such as scuba diving, snorkelling, sailing, kayaking, kite surfing, and windsurfing. Recreational fishing is popular in this area and is likely to increase. The diversity of this marine park biota makes this marine park important for scientific research and education among tertiary institutions, schools and outdoors organisations (DEC, 2007c).</p>



Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Cultural Values</b></p> <p>This marine park is of cultural significance to the Gnaarla Karla Booja people who are the Traditional Owners and have frequented this marine park for thousands of years. The Gnaarla Karla Booja people have continued to use this Marine Park for fishing and hunting. Shoalwater and Garden Island areas are significant parts of the story of creation and there are a number of sites adjacent to and within this marine park that are registered as culturally significant (DEC, 2007c).</p>
Ngari Capes Marine Park	Sanctuary, Special Purpose and Recreation Zones	<p><b>Description</b></p> <p>The Ngari Capes Marine Park is located off the south-west coast of Western Australia, ~250 km south of Perth, covering ~1238 km<sup>2</sup> (DEC, 2013).</p>
		<p><b>Ecological Values</b></p> <p>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 this Marine Park as well as a diverse range of seabirds and shorebirds (DEC, 2013).</p>
		<p><b>Social and Economic Values</b></p> <p>A diverse range of commercial fisheries and aquaculture occur within and around this marine park targeting species such as abalone, salmon, sharks, demersal fish, baitfish, and western rock lobster. This marine park offers a wide range of attractions for marine based tourism which include shore-based and boat-based whale watching tours and dive and snorkel tours. Recreational activities that occur within this marine park include diving, fishing, snorkelling and wildlife watching (DEC, 2013).</p>
		<p><b>Cultural Values</b></p> <p>The Pibelman and Wardani people occupy the lands adjacent to this marine park and utilise the coastline for fishing, hunting, ceremonial activities and resource gathering as they have continued to do for thousands of years. At least 45 sites of Indigenous significance have been identified within or adjacent to this marine park. Many marine species including mammang borungar (whale) and kalda (sea mullet) are culturally significant to the Indigenous people of the southwest region (DEC, 2013).</p>
Walpole and Nornalup Inlets Marine Park	Recreation Zone	<p><b>Description</b></p> <p>The Walpole and Nornalup Inlets Marine Park is located adjacent to the towns of Walpole and Nornalup on the south coast of Western Australia, ~120 km west of Albany, and covers ~14 km<sup>2</sup> (DEC, 2009a).</p>

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Conservation Values</b> 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 this marine park (DEC, 2009a).</p> <p><b>Social Values</b> The diversity of wildlife and easily accessible terrestrial, estuarine, and coastal scenery has enhanced nature-based tourism within the area. Popular recreational activities that occur within this marine park include boating, fishing, swimming, hiking, bird watching, and wildlife watching (DEC, 2009a).</p> <p><b>Cultural Values</b> Estuaries are significant hunting, fishing and gathering areas for Minang people of south-western Australia who have a strong spiritual connection to the area. Aboriginal artefact scatters and other listed areas of cultural significance have been found within and adjacent to this marine park (DEC, 2009a).</p>



**Figure 11-2: Commonwealth and State Marine Protected Areas for the SWMR (data source: GA, 2024)**

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## 11.11 Summary of Protected Areas Within the NMR

Table 11-8: Protected Areas within the NMR

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
<b>World Heritage Properties</b>		
Kakadu National Park		<b>Description</b> 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 on the World Heritage list in three stages over 11 years. It is located in tropical north Australia covering a total area of 19,810 km <sup>2</sup> (Director of National Parks, 2016).
		<b>Ecological Values</b> 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. Coastal areas of the park are dominated by mudflats which are mostly lined by mangroves which support breeding and nursery grounds for a variety of animals. The threatened flatback turtles nest on Field Island which is within the park. Kakadu National Park is a key habitat for threatened species including one species of river shark, two sawfish species and two inshore dolphin species (Director of National Parks, 2016).
		<b>Social Values</b> Kakadu National Park is a popular tourist destination which provides important economic value to the region through boat and fishing tours and wildlife tours. Commercial tours operate within the area which provides employment opportunities for local communities. Popular recreational activities within the park include bushwalking, camping, recreational fishing and boating, swimming, wildlife watching, and viewing culturally significant sites (Director of National Parks, 2016).
		<b>Cultural Values</b> The Bininj/Mungguy people are the Traditional Owners of Kakadu National Park and have had longstanding custodianship and spiritual connection with the Kakadu region and continue to use the park for cultural practices. Kakadu holds one of the world's greatest concentrations of rock art sites and there is thought to be up to 15,000 sites in total with some sites estimated to be over 20,000 years old (Director of National Parks, 2016).

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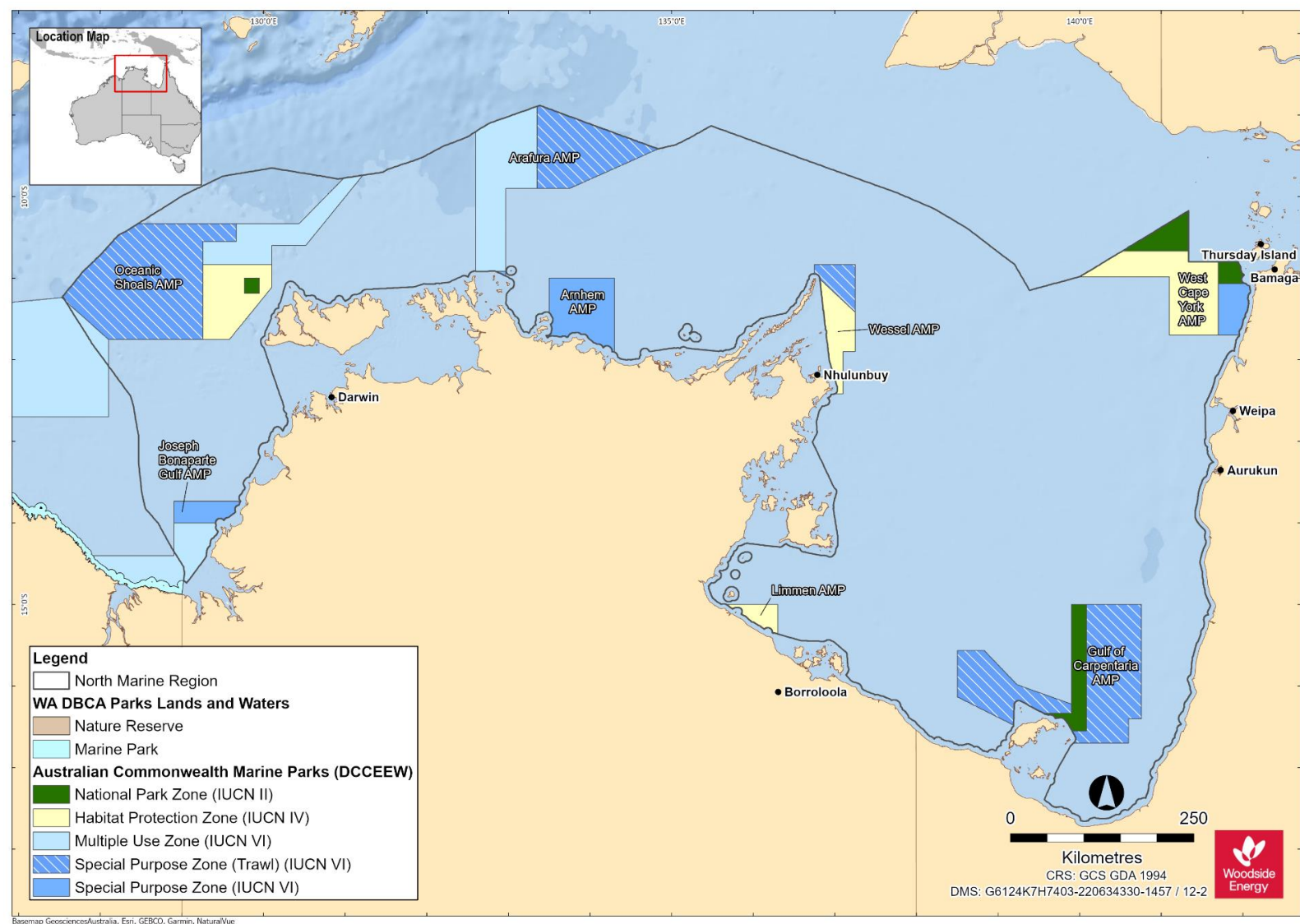
Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
<b>National Heritage Places—Natural</b>		
Kakadu National Park		Refer to World Heritage Property description and values above.
<b>Commonwealth Heritage Places—Natural</b>		
N/A		
<b>Wetlands of International Importance (Ramsar)</b>		
Kakadu National Park		<b>Description</b> 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 (BMT WBM, 2010).
		<b>Conservation Values</b> 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 (BMT WBM, 2010).
Cobourgh Peninsula		<b>Description</b> 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 (BMT WBM, 2011).
		<b>Conservation Values</b> 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 (BMT WBM, 2011).

Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
Wetlands of National Importance (DAWE, 2019)		
Southern Gulf Aggregation		<b>Description</b> The site is a complex continuous wetland aggregation in the Gulf of Carpentaria, covering an area of ~5460 km <sup>2</sup> located 58 km east of Burketown, Queensland (DCCEEW, 2019b).
		<b>Conservation Values</b> 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 (DCCEEW, 2019b).
		<b>Social Values</b> The area is an important site for recreational barramundi fishing and is a popular site for ecotourism (DCCEEW, 2019b).
Territory Marine Parks and Reserves		
Cobourg Marine Park	II, IV, VI	<b>Description</b> Cobourg Marine Park covers an area of 2290 km <sup>2</sup> and is located in the waters surrounding the Cobourg Peninsula ~220 km north-east of Darwin. This marine park is part of the larger Garig Gunak Barlu National Park. Garig Gunak Barlu National Park includes both this marine park and the Cobourg Sanctuary (Northern Territory Government, 2011)
		<b>Conservation Values</b> Cobourg Marine Park is located in the Cobourg and Van Diemen Gulf marine bioregions with the northern portion of the marine park covered by the Cobourg marine bioregion and the southern portion covered by the Van Diemen Gulf marine bioregion. This 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 marine park. The areas of the marine park that have been studied and where extensive collections have been made indicates that the Marine Park supports rich and diverse marine life including live coral reefs, seagrass, diverse reef and pelagic fish populations, saltwater crocodiles, and six species of threatened marine turtles and dugong (Northern Territory Government, 2011).
		<b>Social and Economic Values</b> A variety of commercial fisheries, aquaculture and pearling occur within this marine park. The marine park has visitors who stay within the Cobourg sanctuary, sailors who moor in the area and guests who stay at onsite accommodation. Water sports such as fishing, boating, sailing, scuba diving, recreational fishing, sightseeing and wildlife viewing are popular activities undertaken in the marine park (Northern Territory Government, 2011).

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Protected Area	IUCN Protected Area Category* or Relevant Park Zone	Description and Values
		<p><b>Cultural Values</b></p> <p>The Cobourg people have a longstanding connection to the lands and seas of Cobourg Marine Park. The marine park is a culturally significant place for the Cobourg people to practice customary activities including ceremonies and fishing and hunting of marine resources (Northern Territory Government, 2011).</p>





**Figure 11-3: Commonwealth and State Marine Protected Areas within the NMR (data source: GA, 2024)**

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## 12. SOCIO-ECONOMIC AND CULTURAL ENVIRONMENT

This section summarises the information relating to the socio-economic and cultural environment of the regions offshore of Western Australia, with a focus on the NWMR and to a lesser extent the SWMR and NWR.

### 12.1 Cultural Values and Heritage

Woodside's approach to Cultural Values and Heritage management reflects our publicly available [First Nations Communities Policy](#) (Woodside, 2022). This policy is underpinned by core principles that ensure our management of cultural heritage is thorough, transparent and supported by consultation and continued engagement with First Nations communities. Our approach to the identification, management and protection of cultural heritage is consistent with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), engaging with First Nations communities in ways that reflect the principles of seeking Free, Prior and Informed Consent (FPIC). Where heritage is concerned Woodside seeks to avoid impact, or if avoidance is not possible, to minimise and mitigate impact through consultation with relevant First Nations communities. We seek to ensure Traditional Owners and Custodians are central to heritage management so that cultural values are understood and remain protected.

Australia ICOMOS (International Council on Monuments and Sites) is a non-government peak body for cultural heritage professionals formed as a national committee for ICOMOS (international). Australia ICOMOS' mission is to lead cultural heritage conservation in Australia by issuing standards and practice notes. Woodside understands heritage value to mean the cultural significance of a place to an individual or group in line with the Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Australia ICOMOS, 2013) (Burra Charter), and associated practice notes. A cultural feature is therefore comparable to the Burra Charter term "fabric" and refers 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 or intangible dimensions (Australia ICOMOS, 2013).

#### 12.1.1 Native Title

Woodside uses established systems, such as native title, to identify First Nations groups that may have functions, interests or activities that may be affected. While acknowledging that cultural features and heritage values may exist outside of the native title framework, native title claims, determinations and ILUAs are defined under the *Native Title Act 1993* (Cth). 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 ([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 that 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.

Indigenous Land Use Agreements (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 ([Native Title Tribunal](#)).

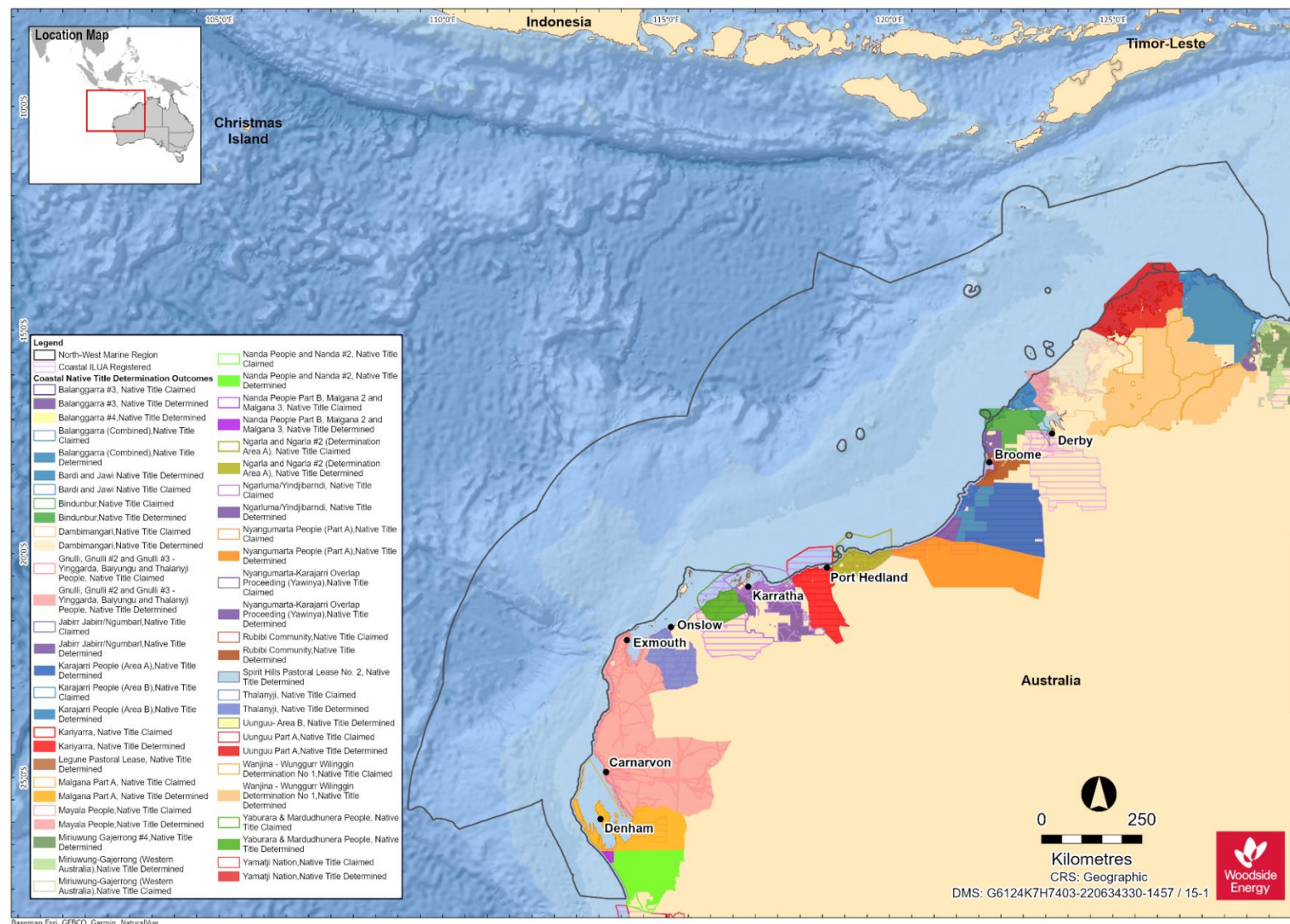
The Native Title Act provides for a Representative Aboriginal/Torres Strait Islander Body (Native Title Representative Body) to be recognised by the Commonwealth Minister for an area. Native Title Representative Bodies have specialist functions set out in the Native Title Act within the area for which 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.

### 12.1.2 Coastal First Nations Groups

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 areas of operation to be an instructive means of identifying potentially relevant First Nations groups to be consulted.

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 groups and individuals. This may also, over time, build expectations in the broader community that a group is responsible for maintaining environmental values in areas for which they do not hold traditional knowledge.

Woodside acknowledges that a First Nations group's relative proximity to any Operational Areas is not necessarily a meaningful indicator of the connection to the area and providing advice over such areas can be culturally dangerous. As a result, caution must be used when conducting broader engagement.



**Figure 12-1: Coastal Native Title Claims / Determinations and Indigenous Land Use Agreements (ILUAs) in the NWMR (data source: DPLH, 2024)**

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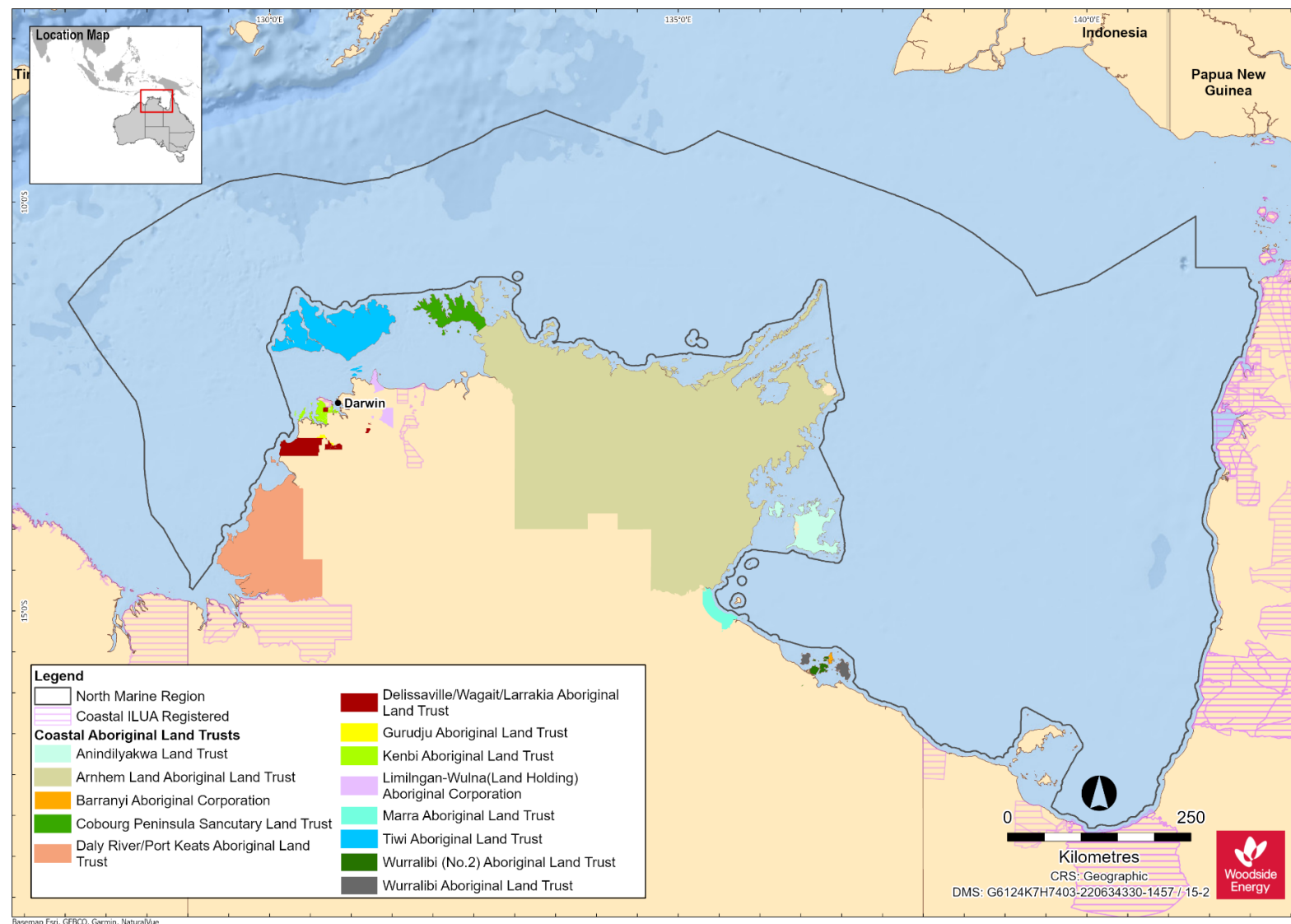
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**Figure 12-2: Coastal Native Title Claims / Determinations and ILUAs in the NMR (data source: DPLH, 2024)**

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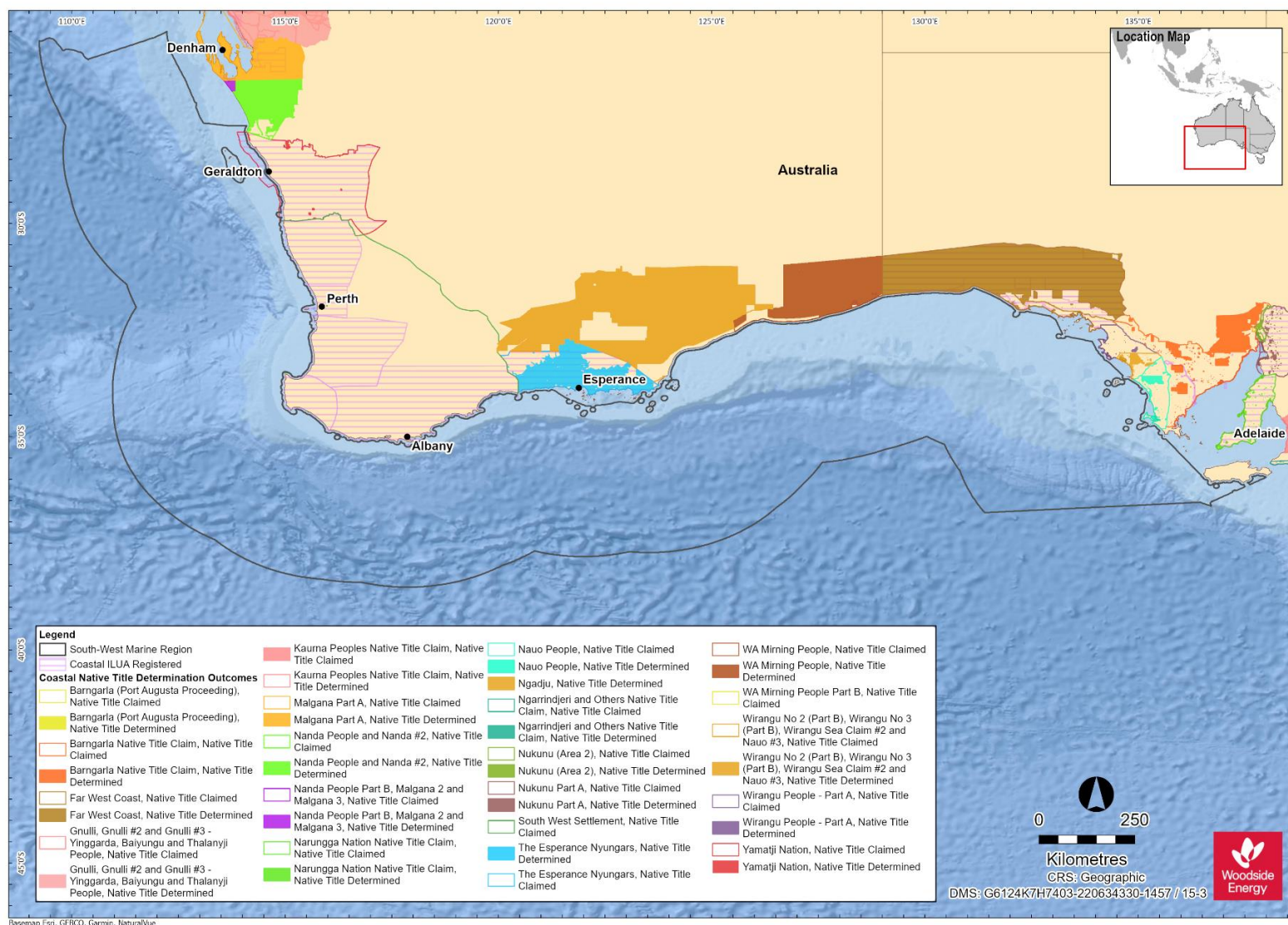
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**Figure 12-3: Coastal Native Title Claims / Determinations and ILUAs in the SWMR (data source: DPLH, 2024)**

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### 12.1.3 Sea Country

“Sea Country is valued for Indigenous cultural identity, health and wellbeing” (DNP, 2018a, 2018b).

Woodside recognises the potential for marine ecosystems to include cultural features as well as environmental values. This is one aspect of the broader concept of “Sea Country”, which 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: it is shorthand for all the values, places, resources, stories and cultural obligations associated with that geographical area.” (Smyth, 2007).

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. 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, 2024c).

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. 20–30km 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 100km 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).

Cultural features of coastal areas may include marine species that may travel many thousands of kilometres through areas with similar cultural values to multiple Indigenous 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.

**Table 12-1: Commonly identified Sea Country species and habitats**

Value	Details
<b>Marine mammals</b>	Whales, and in particular humpback whales and dugongs, are commonly identified through consultation with First Nations people as culturally important species, with totemic importance. Common interests include maintaining their populations, biodiversity and migration patterns.
<b>Marine reptiles</b>	Turtles and sea snakes are commonly identified through consultation with First Nations people as culturally important species and a favoured 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. 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).
<b>Fish and cephalopods</b>	Fish and squid are commonly 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. There are increase ceremonies/rituals for species of squid and octopus to enhance or maintain populations. Thalu are places where these increase ceremonies are performed.
<b>Seabirds</b>	Seabirds, and in particular shags, are commonly identified through literature as a culturally significant species (Malgana Land and Sea Management et al., 2021), as well as a resource (seabird eggs; Smyth, 2007).
<b>Benthic habitats</b>	First Nations groups identify benthic habitats as valuable for both their ecological and aesthetic values. Corals attract fish and seagrass providing shelters for fauna, as well as an important resource for dugongs.
<b>Shoreline habitats</b>	First Nations groups identify shoreline habitats as valuable for their ecological values, including mangroves for providing 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.

#### 12.1.4 Marine Parks

Woodside acknowledges that Commonwealth and State Marine Park Management Plans have sought to recognise cultural values and responsibilities 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 AMPs, we take values into account'. AMP summarises these values as natural values, cultural values, heritage values and socio-economic values (Refer to Section 11.5).

#### 12.1.5 Indigenous Protected Areas (IPAs)

Indigenous Protected Areas (IPAs) are areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation through voluntary agreements with the Australian Government. IPAs are an essential component of Australia's National Reserve System, which is the network of formally recognised parks, reserves and protected areas across Australia. There are currently 85 dedicated IPAs over 74 million hectares. These account for more than 50% of the National Reserve System (NIAA, 2023). As of August 2024, an additional 36 Traditional Owner consultation projects to develop management plans for proposed IPAs are underway (DCCEEW, 2024c). Ten Sea Country IPA consultation projects were announced in 2022. One of these, Tujukana pa Karajarri Kura Jurrar, is in the NWMR and extends from the existing Karajarri IPA into the sea off the south-west Kimberley coast (DCCEEW, 2024c). The Indigenous Protected Areas program is administered by the National Indigenous Australians Agency in partnership with DCCEEW. Dedicated and proposed IPAs are shown in Figure 12-4.

The following IPAs are within the NWMR:

#### **12.1.5.1 Nyangumarta Warrarn IPA**

The Nyangumarta Warrarn IPA is comprised of four areas totalling approximately 28,675 km<sup>2</sup>, including parts of the Great Sandy Desert, Walyarta Conservation Reserve, Kujungurru Warrarn Conservation Reserve Area and the Eighty Mile Beach Marine Park Intertidal Area. The Traditional Owners of the designated IPA self-identify as and are identified by other Pilbara First Nations people as Nyangumarta people. Nyangumarta people are the native title holders of the land and waters.

Ecological values in the IPA include a complex wetland system associated with Mandora Marsh, known to Nyangumarta people as Nyamaring. Walyarta (or Salt Creek). The Mandora Marsh area holds the most inland distribution of mangroves in Australia and the mound springs associated with Mandora Marsh area, such as Yalayala (Eil Eil), are recognised as important bird nesting sites (NWAC and YMAC, 2015).

#### **12.1.5.2 Karajarri IPA**

Karajarri Indigenous Protected Area (IPA) was dedicated in 2014, to manage, protect and enhance Karajarri country. The IPA covers nearly 25,000 km<sup>2</sup> of land in the southern Kimberley, including 130 km of coastline stretching from Gordon Bay to Cape Missiessy. It comprises extensive coastlines, tidal creeks and wetlands as well as arid country that stretches into the Great Sandy Desert (NIAA, n.d.).

Karajarri people want to ensure areas of cultural and natural significance are looked after correctly according to their own protocols, and they view their environmental responsibilities as Palanapayana Tukjana Ngurra meaning “everybody looking after country properly” (KTLA, 2014a).

The IPA includes two different zoning categories to help manage country: IUCN Category 2 (National Park) and Category 6 (Protected area with sustainable use of resources). The Category 2 zoning allows for the area to become part of an integrated system of protected areas with Eighty Mile Beach to the south and Roebuck Bay to the north of the IPA (KTLA, 2014a).

To assist in the planning and development of the IPA, the Karajarri Traditional Lands Association (KTLA) developed a Healthy Country Plan, which provides direction for addressing threats and for working on priorities for land and cultural site management (KTLA, 2014b).

The Tukujana pa Karajarri Kura Jurrar IPA has been announced under the Sea Country IPA Program, extending from the existing Karajarri IPA into the sea off the south-west Kimberley coast (DCCEEW, 2023b). The area includes a network of coastal habitats, such as intertidal and subtidal reefs, mangrove systems, lagoons and tidal creeks, and connects the Ramsar sites of Roebuck Bay and Eighty Mile Beach (DCCEEW, 2023b).

#### **12.1.5.3 Yawuru IPA**

The Yawuru IPA was dedicated by Yawuru people in 2017, covering 2109 km<sup>2</sup> of Yawuru coastal and inland country (YRNTBC, 2014). The Yawuru people are the Native Title holders of their land and sea—their ancestors have lived along the foreshores of Roebuck Bay, across the Pindan Plains and inland along the fringes of the Great Sandy Desert for thousands of years (NIAA, n.d.-a).

The Yawuru IPA is managed under the Walyjalajala nagulagabu birrangun buru Plan of Management for 2017-2026 (YRNTBC, 2014). The plan includes eight targets for management, being:

- Yawuru cultural knowledge and practice
- Yawuru significant areas
- Yawuru rights and responsibilities
- Niyamarri—sand dunes



- Bilarra—wetlands
- Birra—bush and pindan country
- Nagulagun—saltwater country (deepwater and intertidal)
- seasonal resources and biodiversity.

Cultural values include Yawuru named sites, tracks and areas, historical sites associated with pearling and pastoral industries, archaeological sites and traditional bush/sea resources. Ecological values include reefs and seagrass beds that provide habitat for dugongs (*Dugong dugon*) and EPBC Act-listed threatened sea turtle species including hawksbill turtle (*Eretmochelys imbricata*), loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*) and flatback turtle (*Nataden depressus*). Roebuck Bay is a Ramsar site and has a known population of snubfin dolphins (*Orcaella heinsohni*) (Figure 7-6). Other ecological values include pearl shell beds for pearl oysters and habitat for a range of EPBC Act listed threatened species (YRNTBC, 2014).

#### 12.1.5.4 Bardi Jawi IPA

Bardi Jawi IPA is located 160 km north of Broome and covers 1269.9 km<sup>2</sup> of land and Sea Country (NIAA, n.d.-b). The main communities on Bardi country are Djarindjin, Lombadina and Ardyaloon (One Arm Point). Bardi people live on the mainland of the Dampier Peninsula and islands immediately offshore from Ardyaloon. Jawi people call the islands further east, including Iwany (Sunday Island), their traditional country. Today people live in outstations spread along the mainland Peninsula coastline (KLC/BJNAC RNTBC, 2013).

During the IPA consultation process, The Bardi Jawi rangers guided meetings with individual family groups to identify what they considered important to look after. An IPA steering committee was formed, who contributed cultural knowledge to the Bardi Jawi Indigenous Protected Area Management Plan (2013–2023). They were assisted by The Nature Conservancy in Conservation Action Planning (CAP). This plan highlights targets to be protected on country:

- marnany (fringing reefs)
- aarli (fish)
- odorr (dugong) and goorlil (turtle)
- significant sites, language, law and culture
- traditional oola (water) places
- Indigenous plant resources (KLC/BJNAC RNTBC, 2013).

Jardagarr (coastal country) is classed under IUCN Category 4, and Niimidiman (inland country) is classed under Category 6. Niimidiman harbours many plant and animal species of high cultural value. For example, Irrgil trees are used for making boomerangs and Marrga, Joolgirr and Bilimangard trees are used for making shields. Some Niimidiman areas feature traditional Oola (water) places and stories attached to these places are culturally important. Ecological values of the Jardagarr (coastal) country includes many species of native garrabal (birds), including eastern curlews and fork-tailed swifts (KLC / BJNAC RNTBC, 2013).

#### 12.1.5.5 Dambimangari IPA

Dambimangari IPA is located between Broome and Darwin, stretching east to the Prince Regent area. It covers 6422.94 km<sup>2</sup> of landscape, including open grasslands, eucalyptus woodlands, intertidal flats and rocky reefs and shoals (NIAA, n.d.-c). Dambimangari is the traditional home of the Worrarra people. Dambimangari peoples' identity is interwoven with the sea and its reefs and islands. Reefs are important hunting grounds for jaya (saltwater fish) and warliny (dugong).

The targets for protection are identified in the Dambimangari Healthy Country Plan 2012–2022 as:

- cultural sites
- reefs, beaches and islands
- saltwater fish
- turtle and dugong
- whales and dolphins
- rivers, waterholes, waterfalls and wetlands (freshwater systems)
- culturally important native animals
- bush fruits and medicine plants
- right-way fire (DAC, 2012).

Jurluwarra (saltwater-turtle) and warliny (dugong) are culturally important to Dambimangari people as a food source. Cultural sites include rock art sites, stone arrangements, burial sites and important camping beaches that were used for resting when travelling through saltwater country (DAC, 2012).

#### 12.1.5.6 Uunguu IPA

Stage one of the Uunguu IPA was declared on May 23, 2011, coinciding with the Native Title Determination and release of the Healthy Country Plan. The IPA covers 7598.06 km<sup>2</sup>. It has been home to the Wunambal Gaambara people for many thousands of years and is part of the Wanjin Wunggurr culture. Wunambal Gaambara people call their country Uunguu—‘our living home’. Two of the reserves extend to the low water mark at Bougainville Peninsula, Vansittart Bay, Anjo Peninsula, Napier Broome Bay and islands in Rothsay Water (WGAC, 2017). A Saltwater IPA Plan of Management was created in 2017 as a sub-plan for the Wunambal Gaambara Healthy Country Plan (WGAC, 2017)<sup>21</sup>.

Ten targets identified in the Wunambal Gaambara Healthy Country Plan are:

- Wanjin Wunggurr Law—our culture
- right way fire
- aamba (kangaroos and wallabies) and other meat foods
- Wulo (rainforest)
- Yawal (waterholes)
- bush plants
- rock art
- cultural places on islands
- fish and other seafoods
- mangguru (marine turtles) and balguja (dugong) (WGAC, 2010).

The Uunguu Rangers look after land and Sea Country through pest control, visitor management, cultural heritage conservation, monitoring flora and fauna and fire management (NIAA, n.d.-c).

<sup>21</sup> Marine areas were proposed to be added to the Uunguu IPA as an International Union for Conservation of Nature (IUCN) Category VI (Managed Resource) Protected Area, early in 2018.

#### 12.1.5.7 Balanggarra IPA

The Balanggarra IPA was dedicated on August 7, 2013. The IPA spans over one million hectares of land and Sea Country in the Kimberley region and has been home to the Balanggarra people for thousands of years. The five big rivers of the north Kimberley intersect on Balanggarra country. These rivers include the King River, Forest River, Pentecost River, Durack River and Ord River. The region also borders the Cambridge Gulf and Timor Sea. Three species of vulnerable sawfish are found in the waters of this region (Kimberley Land Council, n.d).

Nine targets identified in the Balanggarra Healthy Country Plan 2012–2022 are:

- Balanggarra law and culture
- our gra or country (land, sea, rivers, islands)
- cultural sites (rock art sites, burial sites, heritage places)
- native animals
- accessible bush tucker / medicine plants
- right way fire
- freshwater (places and freshwater fish)
- saltwater fish and seafood
- migratory saltwater species (turtle, dugong, whales, dolphins).

The Balanggarra Rangers manage 1000 km of river and sea frontage on their country to manage and protect and enhance the unique biodiversity values of their country (Balanggarra Aboriginal Corporation, 2011).

#### 12.1.5.8 Wilinggin IPA

The Wilinggin IPA spans over 2.4 million hectares of remote country in the central north Kimberley region and was declared in 2013. It included basalt ranges and sandstone cliffs which rise 250 m high. The area has wooded grasslands, pockets of rainforest, extensive mangrove systems, tidal mudflats, rivers, creeks and billabongs. The Ngarinyin people are the Traditional Owners of this area and have lived on Wilinggin country for thousands of years (NIAA, n.d-d). Wilinggin Country is mostly landlocked, apart from two small saltwater areas which include Walcott Inlet and Prince Frederick Harbour.

Seven targets identified in the Wilinggin Healthy Country Plan 2023–2032 are:

- becoming strong on country
- food and medicine plants
- bushfire
- law and culture sites
- law and culture
- freshwater places
- wildlife and bush meats.

The Wunggurr Rangers are caretakers of the unique natural and cultural values of Wilinggin country (Wilinggin Aboriginal Corporation, 2022).

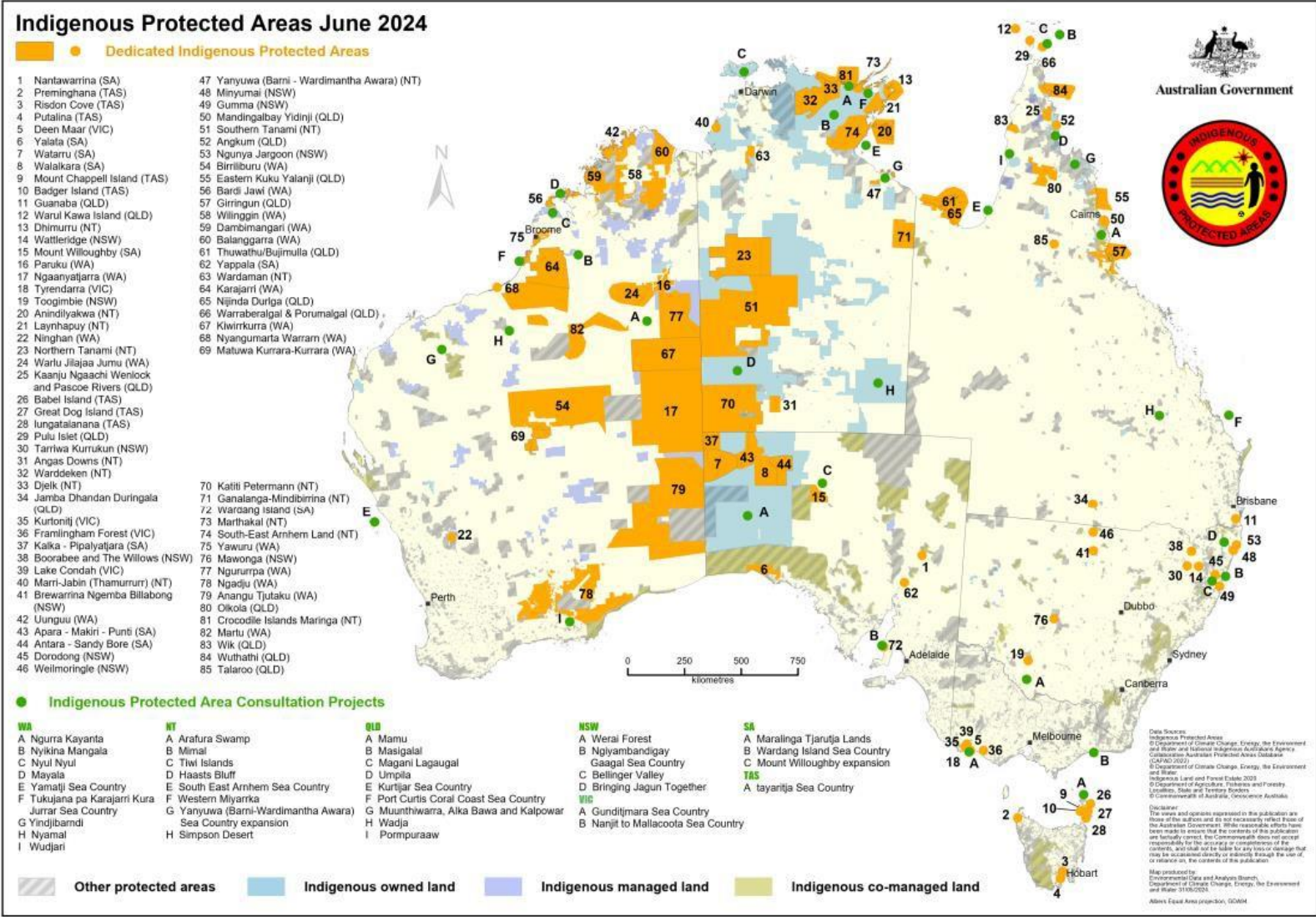


Figure 12-4: IPAs in Australia (data source: DCCEE and NIAA, 2024)

### 12.1.6 First Nations Cultural Heritage

Woodside understands that communal cultural connection exists 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 Indigenous cosmology to the beginning of time.

Archaeological sites identified onshore with the potential to exist in intertidal or submerged locations include petroglyphs, fish traps and artefact scatters or burials contained within sand dunes. As archaeological sites, these features have archaeological value which relates to the preservation of their fabric (i.e. the tangible features) and their context (i.e. their location and relationship to other archaeological and natural features). Archaeological sites may also have intangible dimensions (ICOMOS, 2013) cultural value that exist in addition to their archaeological or scientific value.

Intangible values are a living expression of cultural heritage that is prevalent across generations. These values can be traditional, and they can also be new and living at the same time. An understanding of the intangible cultural heritage of different First Nations communities helps with intercultural dialogue and encourages mutual respect (UNESCO, 2011). Intangible cultural heritage is safeguarded through practicing and passing on knowledge or expressions by the people to whom it belongs (NNTC, n.d). Figure 12-4 provides context to common intangible themes that exist in First Nations communities.

**Table 12-2: Intangible heritage values associated with Sea Country**

Value	Details
<b>Songlines</b>	<p>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.</p> <p>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 skyines in their songlines in order to communicate sacred knowledge that assists in safe navigation of the ocean (Neale and Kelly, 2020:83-84).</p>

Value	Details
<b>Creation/dreaming sites, sacred sites and ancestral beings</b>	The only published sources located by Woodside with detailed descriptions of the location of ancestral beings or creation/dreaming/sacred sites place 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.
<b>Cultural obligations to care for Country</b>	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 what are known as “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 e.g. a thalu relates to marine species populations.
<b>Knowledge of Country/customary law and transfer of knowledge</b>	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).
<b>Connection to Country</b>	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).
<b>Access to Country, including Sea Country</b>	Access is necessary for the continuation of other values including caring for Country, carrying out cultural practices 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.
<b>Kinship systems and totemic species</b>	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 above. 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).
<b>Resource collection</b>	A number of marine species are identified through consultation and literature as important resources, particularly as food sources (see Section 12.1.4). In addition to their immediate value as sustenance, the gathering and preparation of these resources is 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.

On 15 November 2023, the *Aboriginal Heritage Act 1972* (WA) was restored as the legislation that manages Aboriginal heritage in Western Australia (DPLH, 2024). Under section 17 of that Act, it is an offence to excavate, destroy, damage, conceal or alter any Aboriginal site without 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.

### 12.1.6.1 Submerged Cultural Heritage

It is understood that the sea level has risen significantly during the 65,000 years of Indigenous occupation, and areas that were once inhabited are now submerged on the continental shelf (Veth et al., 2019; UWA, 2021). At its lowest level during Indigenous occupation, the 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., 2022 for an opposing view).

Certain landscapes have been identified as archaeologically prospective on the submerged Ancient Landscape, including:

- submerged water sources (rivers, waterholes, tidal channels and seeps) which have an increased likelihood of use or habitation as past generations used the associated resources (UWA, 2021)
- submerged calcarenite ridges younger than human occupation of the continent which may have formed over and protected artefacts in-situ (Veth, 2019)
- prominent landscape features (e.g. hills, particularly of igneous rock formations) that may have been foci for cultural activity (UWA, 2021)
- karst depressions and other ‘catch points’ where artefacts may accumulate following disturbances caused by inundation (UWA, 2021; Nutley, 2022; Nutley, 2023a)
- Madeleine Shoals has been specifically identified by Murujuga Aboriginal Corporation (MAC) as an archaeologically prospective feature due to its igneous rock formations which have the potential to contain petroglyphs.

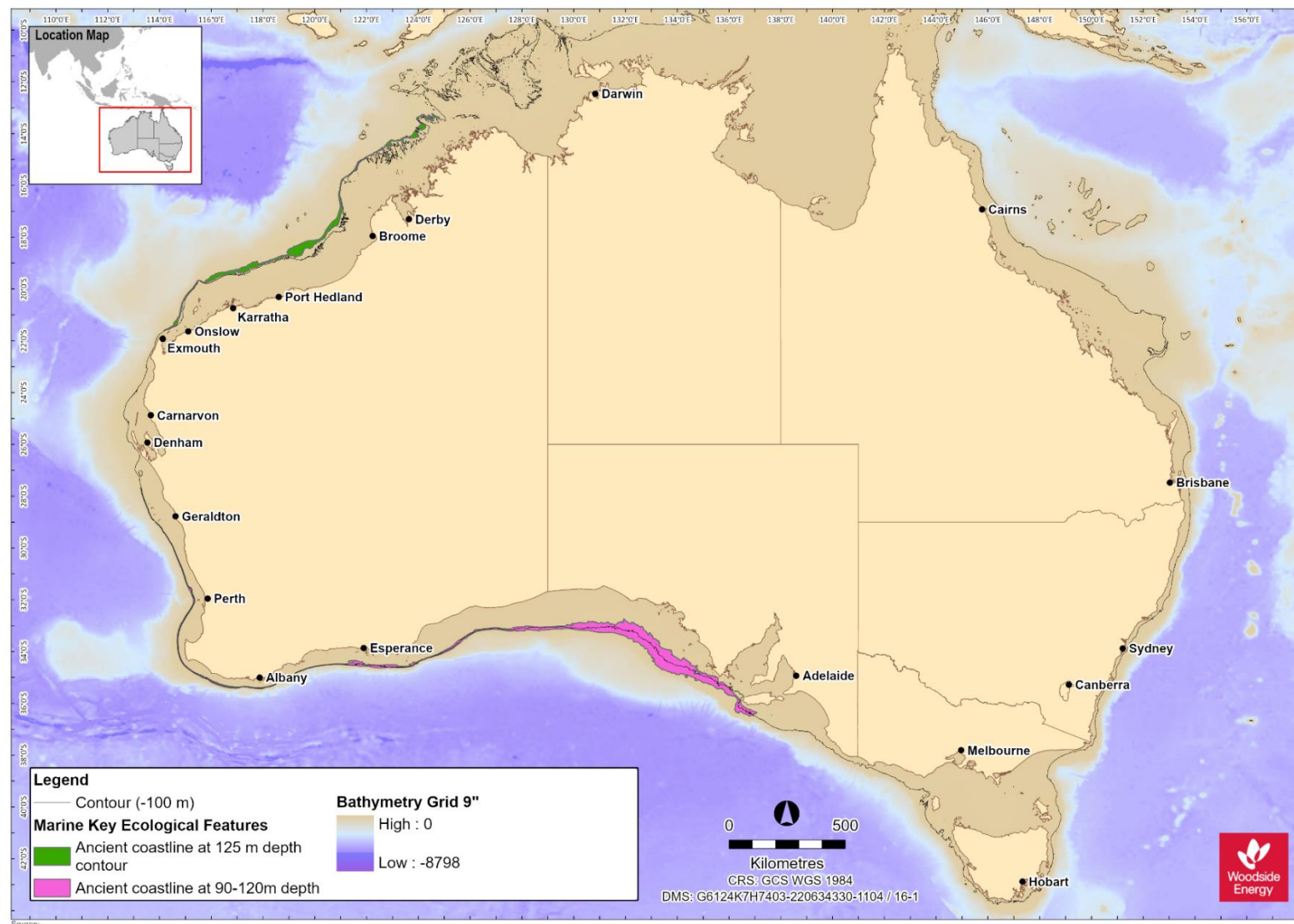
The sites considered most likely to survive inundation, based on the review of existing literature, were logically the more robust forms including:

- midden and artefacts within cemented dunes, relict water holes, and beach rock deposits
- quarry outcrops, extraction pits, and associated reduction debris in fine-grained volcanic outcrops
- curvilinear stone structures and standing stones sitting on volcanic pavements and jammed into volcanic rock piles
- lag deposits of artefacts and possibly midden on hardpan in suitable landscape contexts with good preservation conditions (e.g. shallow declination shorelines in sheltered passages of the inner archipelago or on the leeward side of hard-rock / fringing reef causeways adjacent to the outer islands)
- small overhangs and shelters with preserved deposits, facing away from the dominant wave and wind action (Veth et al., 2019).

In recognition of this, Woodside considers the Ancient Landscape between the mainland and the ancient coastline KEF as an area where potential First Nations archaeological material may exist on the seabed, as this covers the full extent of this possible occupation. Known 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. 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 currently no First

Nations archaeology known to exist anywhere within Commonwealth waters and no areas subject to declarations or prescriptions under these Acts.





**Figure 12-5: Indicative bathymetry of the ancient submerged landscape (data source: GA, 2024; DCCEEW, 2024d)**

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### 12.1.6.2 First Nations 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 First Nations 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.

The Department of Planning, Lands and Heritage maintains a register of registered sites and heritage places. 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 EPBC Act. Murujuga National Park is managed under the *Conservation and Land Management Act 1984* (WA).

### 12.1.7 Historic Sites of Significance

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 EPBC Act. Historic places may also be protected under the *Heritage Act 2018* (WA); under section 129 of this Act 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).

Historical sites of significance and heritage value are found along adjacent foreshores of the SWMR, NWMR and NWR.

### 12.1.8 Historic Underwater Heritage

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. This is applicable whether the existence or location of the article is known or unknown, as per section 16 of the Act. Other articles of underwater cultural heritage may be declared for protection as outlined in section 17 of the Act. 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).

There are no known National Heritage listed shipwrecks in the NWMR and NMR (Table 12-3 and Table 12-4). The only known National heritage listed shipwrecks are within the SWMR and include:

- the *HMAS Sydney II*
- the *HSK Kormoran*
- the *Batavia*.

Information on National Heritage listed shipwrecks in the SWMR can be found in Table 12-5.

Known historical shipwreck sites in Western Australian waters are listed in the [WA Maritime Museum Shipwreck Database](#). Known historical shipwreck sites in Commonwealth waters are listed in [Australasian Underwater Cultural Heritage Database](#). These databases only cover known historical sites. Known shipwrecks listed in these databases for the NWMR, NMR and SWMR are shown in Figure 12-6, Figure 12-7 and Figure 12-8 respectively.

### 12.1.9 World, National and Commonwealth Listed Heritage Places

The EPBC Act protects the heritage values of National Heritage Listed and World Heritage Listed places. Any action that will have or is likely to have a significant impact on the heritage values of these places are offences under Part 3, Division 1 of the EPBC Act unless the action is permitted under one of the mechanisms of the EPBC Act. These mechanisms include a number of exceptions set out in Part 4, approvals granted under Part 9 and ministerial decisions under Division 2 Part 7.

Australia's National Heritage Sites are those of outstanding natural, historic and/or Indigenous significance to Australia. Indigenous Protected Areas and National Heritage places classed as natural are discussed in Section 11.3. Historic and/or Indigenous National Heritage Listed Places of the NWMR and SWMR include:

- Dampier Archipelago (including Burrup Peninsula)
- Dirk Hartog Landing Site/Cape Inscription
- *HMAS Sydney II*, *HSK Kormoran* Shipwreck Sites
- *Batavia* Shipwreck Site and Survivor Camps Area 1629—Houtman Abrolhos
- Cheetup Rock Shelter.

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 11.3. Listed Heritage Places in the NWMR are all natural, with two related to defence activities, which include:

- Yampi Defence Area (Table 11-6)
- Learmonth Air Weapons Range Facility (Table 11-6).

World Heritage Properties are those sites that hold universal value which transcends any value that 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 11.2). There are no cultural heritage listings located within the NWMR.

Summary tables of heritage places for NWMR, SWMR and NMR are presented in Table 12-3, Table 12-4 and Table 12-5.

**Table 12-3: 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						
None						

**Table 12-4: Heritage Places (Indigenous and historic) within the NMR**

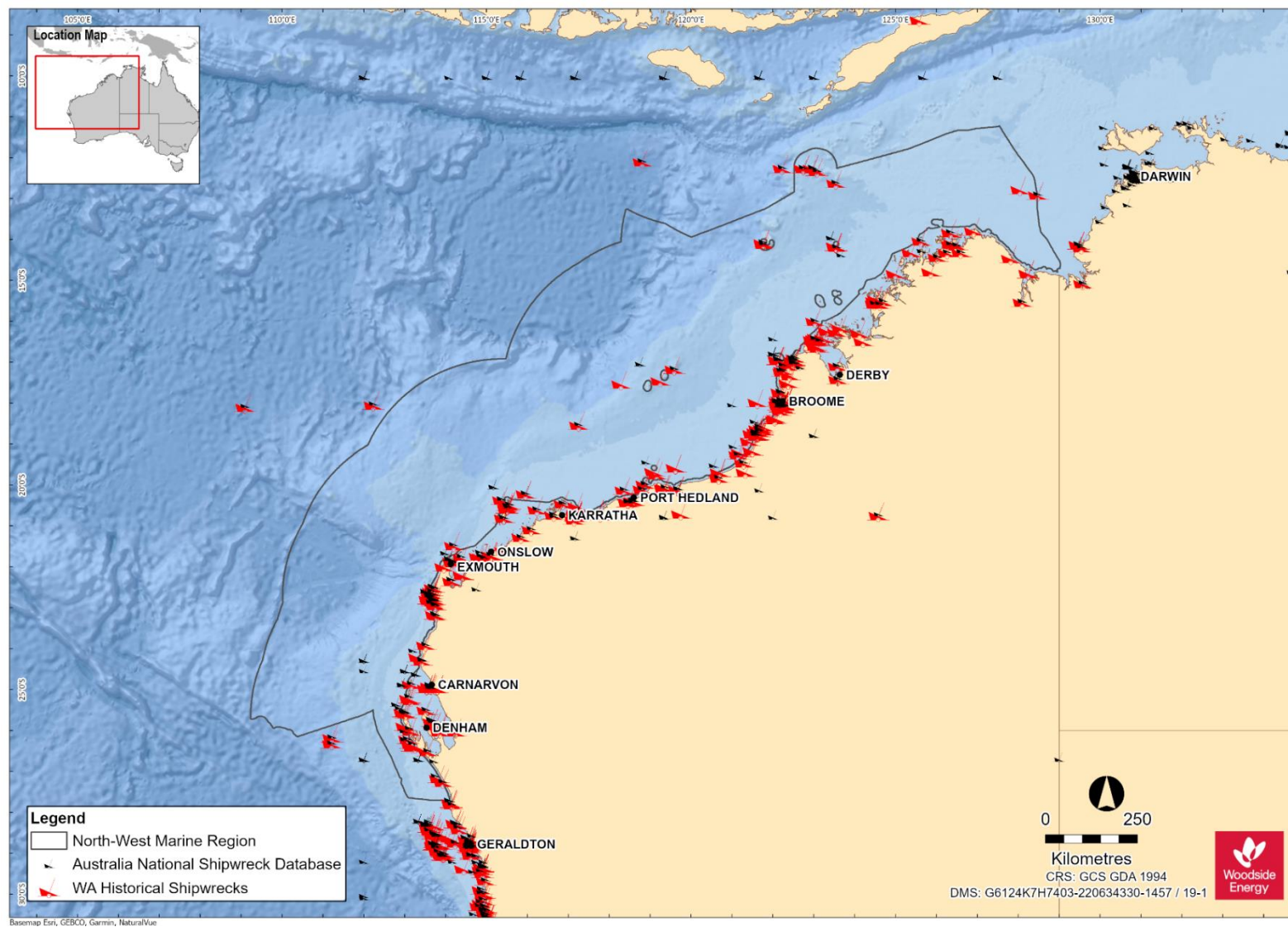
Heritage Places	Class	Description	Conservation Values
<i>National Heritage Properties</i>			
None			
<i>Commonwealth Heritage Properties</i>			
None			

**Table 12-5: Heritage Places (Indigenous and historic) within the SWMR**

Heritage Places	Class	Description	Conservation Values
<i>National Heritage Properties</i>			
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. First Nations 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 First Nations 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 First Nations 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.
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.

Heritage Places	Class	Description	Conservation Values
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, after 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.
<b>Commonwealth Heritage Properties</b>			
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 Gun 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 corner of Garden Island, elements of the J Gun Battery complex are now covered in part by sand.	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 strategic role in the coastal defences of Cockburn Sound and Fremantle after the entry of Japan into the Second World War (1939–45).





**Figure 12-6: Shipwrecks in the NWMR (data source: WAM, 2018 and AODN, 2008)**

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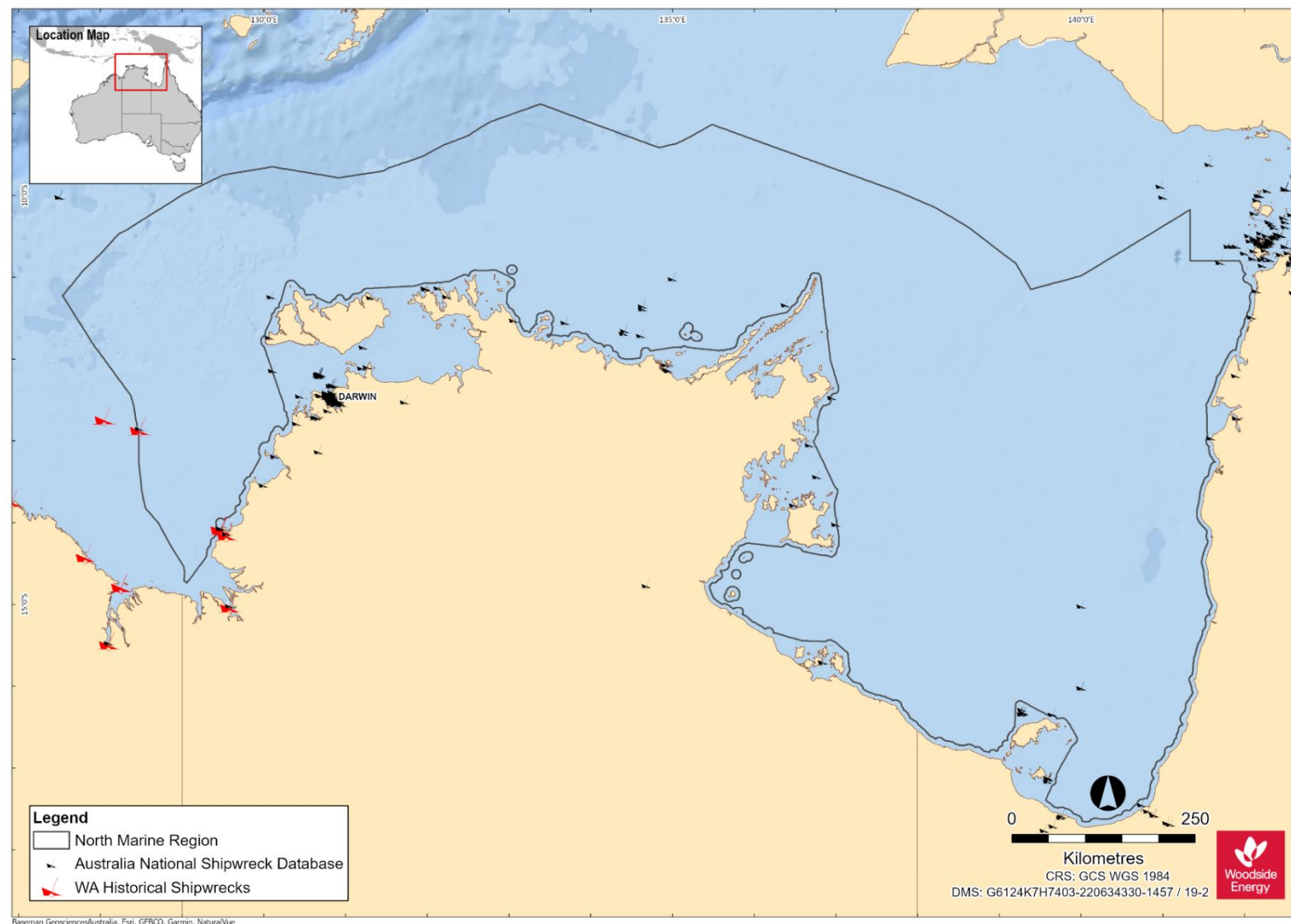
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**Figure 12-7: Shipwrecks in the NMR (data source: WAM, 2018 and AODN, 2008)**

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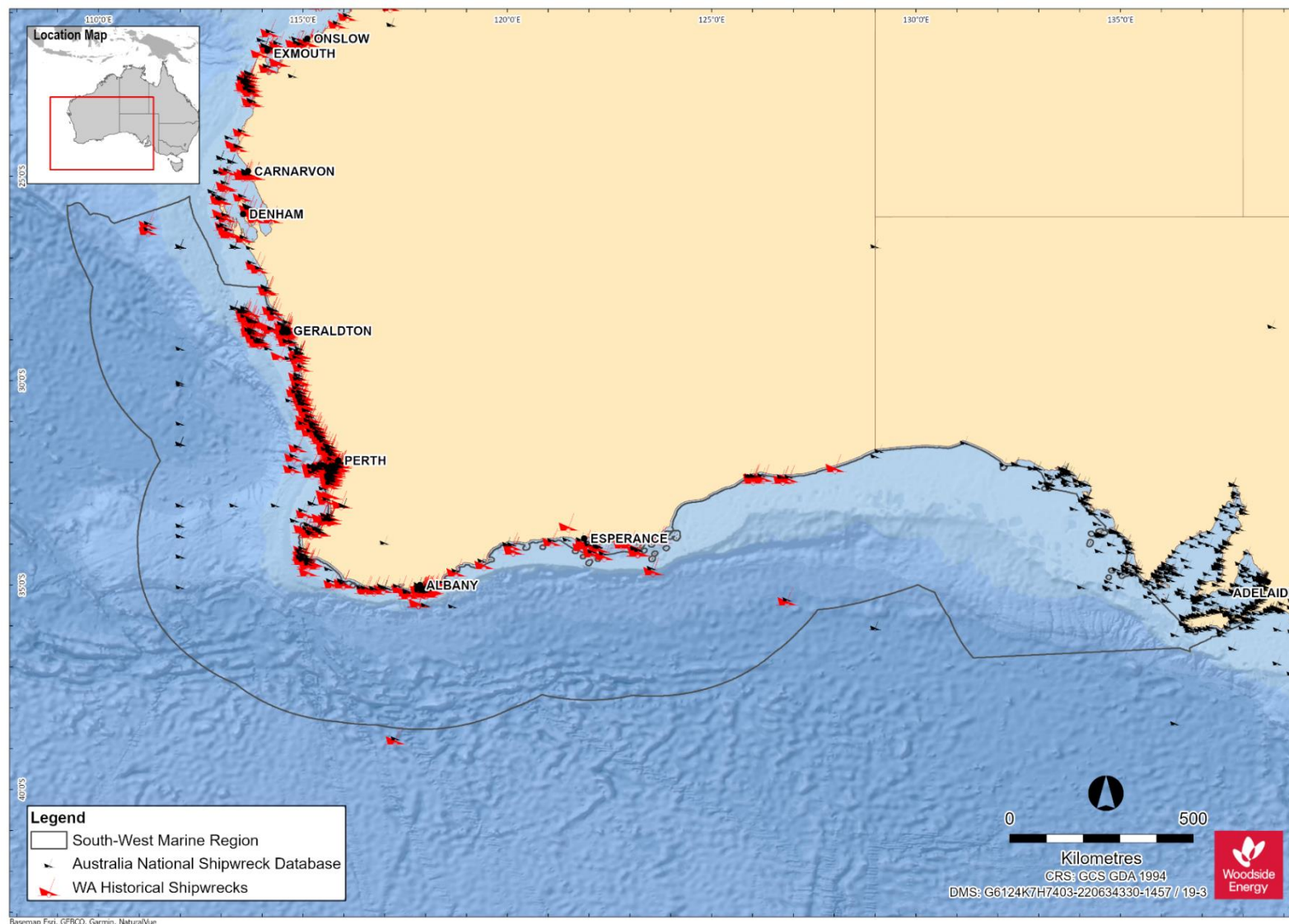
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**Figure 12-8: Shipwrecks in the SWMR (data source: WAM, 2018 and AODN, 2008)**

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## 12.2 Socio-economic Values

Socio-economic values include commercial and traditional fishing, tourism and recreation, shipping, oil and gas activities and defence activities.

### 12.2.1 Commercial Fisheries—Commonwealth and State

The Australian Fisheries Management Authority (AFMA) manages fisheries on behalf of the Commonwealth Government and is bound by objectives under the *Fisheries Management Act 1991* (Cth).

WA State commercial fisheries are managed by the WA Department of Primary Industries and Regional Development (WA DPIRD) under the *Fish Resources Management Act 1994* (WA), *Fisheries Resources Management Regulations 1995* (WA), relevant gazetted notices and licence conditions, and applicable Fishery Management Plans.

Commonwealth and State managed fisheries that are licenced to operate within the NWMR are summarised in Table 12-6.

Table 12-6: Commonwealth and State managed fisheries

Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NWC				
Commonwealth Managed Fisheries							
Southern Bluefin Tuna Fishery	✓	✓	✓	Management Area:	The Southern Bluefin Tuna Fishery 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, purse seine fishing, and minor line (troll and poling).	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 and Dylewski, 2023a). The Southern Bluefin Tuna Fishery is shared amongst countries. Australia currently has a 35% share of the total global allowable catch. Whilst wild capture fishing in Australia to sell directly to market can occur anywhere throughout the fisheries range, currently most of that quota is value-added through ranching (on-growing the wild captured fish for an extra five to six 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). 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. Young fish (one to four years of age) move from the spawning ground in the north-east Indian Ocean into the Australian EEZ and southwards along the Western Australian coast (Patterson and Dylewski, 2023). The stock is classified as not overfished (Patterson and Dylewski, 2023a). A total of 5972 t bluefin tuna catch was recorded for the 2021–22 fishing season, an increase from 5646 t in the 2020–21 period (Patterson and Dylewski, 2023a). Of the total catch, 4957 t were collected using purse seine and 1015 from pelagic longline.		
				Active Licences / Vessels:	Eight purse seine vessels and 22 longline vessels, an increase from seven purse seine vessels and 20 longline vessels in the 2020–21 period (Patterson and Dylewski, 2023a).		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Western Skipjack Tuna Fishery	✓	✓	✓	<b>Management Area:</b>	The combined western and eastern skipjack tuna ( <i>Katsuwonus pelamis</i> ) fisheries encompass the entire Australian EEZ. The Western Skipjack Tuna Fishery extends westward from the SA/ Victorian border across the Great Australian Bight and around the west coast of WA to the Cape York Peninsula.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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).
				<b>Fishing Effort:</b>	The Skipjack Tuna Fishery has not been actively fished since the 2008–09 fishing season (Patterson and Delewski, 2023b). The management arrangements for this fishery will be reviewed if active boats re-enter the fishery.	
				<b>Active Licences / Vessels:</b>	No active vessels operating since 2009 (Patterson and Delewski, 2023b).	
Western Tuna and Billfish Fishery	✓	✓	✓	<b>Management Area:</b>	The Western Tuna and Billfish Fishery extends to the Australian EEZ boundary in the Indian Ocean.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Key species caught in the fishery are bigeye tuna ( <i>Thunnus obesus</i> ), yellowfin tuna ( <i>T. albacares</i> ) and swordfish ( <i>Xiphias gladius</i> ). Striped marlin ( <i>Kajikia audax</i> ) is a minor component of the catch. Catch of albacore ( <i>T. alalunga</i> ), a non-quota species, can approach levels similar to yellowfin tuna catch in some years (Blake et al., 2022a).	Fishers mainly use pelagic longline fishing gear to catch the targeted species. Minor line (including handline, troll, rod and reel) can also be used, and purse seine.	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).
				<b>Fishing Effort:</b>	The fishery 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 (Patterson et al., 2023). A total of 145 t catch was landed in the 2021–22 seasons, a decrease from 252 t in the 2020–21 period (Patterson et al., 2023). The striped marlin, bigeye tuna, and yellowfin tuna are classified as subject to overfishing (Patterson et al., 2023).	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Active Licences / Vessels:</b>	Two pelagic longline and 3 minor line vessels were active during the 2021-22 season (Patterson et al., 2023).	
Western Deepwater Trawl Fishery			✓	<b>Management Area:</b>	The Western Deepwater Trawl Fishery is in deep water off WA, from the line approximating the 200 m isobath to the edge of the Australian Fishing Zone (AFZ). (Blake et al., 2021).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				More than 50 species, historically dominated by six commercial finfish species or species groups: <ul style="list-style-type: none"> <li>orange roughy (<i>Hoplostethus atlanticus</i>)</li> <li>oreos (<i>Oreosomatidae</i>)</li> <li>boarfish (<i>Pentacerotidae</i>)</li> <li>eteline snapper (<i>Lutjanidae: Etelinae</i>)</li> <li>apsiline snapper (<i>Lutjanidae: Apsilinae</i>)</li> <li>sea bream (<i>Lethrinidae</i>).</li> </ul>	Demersal trawl.	Water deeper than 200 m (Blake et al., 2021).
				<b>Fishing Effort:</b>	<p>The number of vessels active in the fishery and total hours trawled have fluctuated from year to year. Notably, total hours trawled were relatively high for a brief period during the early 2000s when fishers targeted ruby snapper and deep-water bugs (Patterson et al., 2020).</p> <p>Total trawl hours have been variable but relatively low since 2005–06. In 2021–22, 76 trawl-hours were recorded in the fishery, down from a recent peak of 1108 in 2017–18 (Keller et al., 2023).</p> <p>The total catch was 12 t in the 2021–22 season, up from 5 t in the 2020–21 season and no deepwater bugs were caught between 2020 and 2022 (Keller et al., 2023). Ruby snapper made up 40% of the catch in 2021–22 and 31% in 2020–21 (Keller et al., 2023).</p> <p>Ruby snapper and deepwater bugs stock are considered not subject to overfishing but the biomass status of deepwater bugs are classified as uncertain (Keller et al., 2023).</p>	
				<b>Active Licences / Vessels:</b>	Since 2004–05, one to three vessels have been active in the fishery, with two active vessels in 2021–22 (Keller et al., 2023).	

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
North-west Slope Trawl Fishery	✓	✓		<b>Management Area:</b>	The North-west Slope Trawl Fishery 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).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Australian scampi ( <i>Metanephrops australiensis</i> ) and smaller quantities of velvet and Boschma's scampi ( <i>M. velutinus</i> and <i>M. boschmai</i> ). A quantity of prawns is harvested each season, and squids are becoming an increasingly significant component of the catch.  Mixed snappers ( <i>Lutjanidae</i> ) and redspot emperor ( <i>Lethrinus lentjan</i> ) have historically been an important component of the catch (Blake et al., 2021).	Fishing for scampi occurs over soft, muddy sediments or sandy habitats, using demersal trawl gear on the continental slope (Patterson et al., 2017).	Typically, depths of 350 to 600 m (Patterson et al., 2017).
				<b>Fishing Effort:</b>	The North-west Slope Trawl Fishery commenced in 1985 and the number of active vessels peaked at 21 in the 1986–87 season, decreasing to between 1 and 6 vessels per year since 2005-06 (Keller and Curtotti, 2023). A total catch of 85.8 t was recorded in 2021–22, a decrease from 87.05 t in 2020–21 (Keller and Curtotti, 2023). Of the total catch, the Australian scampi species comprised of approximately 33% (29 t), down from 50% (44 t) in 2020–21. The stock assessment of scampi in the fishery are classified as not subject to overfishing (Keller and Curtotti, 2023).	
				<b>Active Licences / Vessels:</b>	Three vessels were active in the 2021–22 season, decline from 4 in the 2021–22 season, and trawl-hours decreased from 4420 in 2020–21 to 3950 in 2021–22 (Keller and Curtotti, 2023).	

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Pilbara Fish Trawl (Interim) Managed Fishery		✓		<b>Management Area:</b>	The Pilbara Trawl (Interim) Managed Fishery is a high intensity fishery 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 et al., 2021a).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				The fishery targets more than 50 scalefish species. The main demersal scalefish species landed by the fisheries in the Pilbara region are bluespotted emperor, red emperor and rankin cod (Newman et al., 2021a). The key species caught by the Pilbara Trawl (Interim) Managed Fishery include crimson snapper, bluespotted emperor trevally and threadfin bream (DPIRD, 2020).	Demersal trawl. The fishery operates with standard stern trawling gear (single net with extension sweeps) (Newman et al., 2021a).	The fishery operates in waters between 50 and 200 m water depth (Allen et al., 2014; Newman et al., 2015).
				<b>Fishing Effort:</b>	Based on State of the Fisheries annual reports provided by DPIRD, catch trends were seen to be increasing over the past reporting years, until the past two seasons. The Pilbara Trawl (Interim) Managed Fishery catch was 1784 t in 2022, 1928 t in 2021, 2087 t in 2020, 2142 t in 2019, 1996 t in 2018, 1780 t in 2017, 1529 t in 2016, 1172 t in 2015 and 1105 t in 2014 (Wakefield et al., 2023a). The fishery landed 72% of total commercial catches of the demersal scale fish in the Pilbara in 2022. Increasing catch rates and fishing mortality spawning biomass estimates indicate that imposed effort reductions since 2008 have resulted in increased fish abundance and stock rebuilding in the fishery (Wakefield et al., 2023a). In 2021, the total catch of the indicator species red emperor in the Pilbara Demersal Scalefish Fisheries (includes trawl, trap and line sectors) was 192 t, which is within the acceptable catch range (Wakefield et al., 2023). The biological stocks for the Pilbara Demersal Scalefish Fisheries are classified as sustainable—adequate (Wakefield et al., 2023a ).	
				<b>Active Licences / Vessels:</b>	Four active vessels in the trawl sector in 2022 (Wakefield et al., 2023a).	

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Pilbara Trap Managed Fishery		✓	✓	<b>Management Area:</b>	The Pilbara Trap Managed 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.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				The catch is made up of around 45 to 50 different fish species. The fishery generally targets long-lived, high-value demersal scalefish such as red emperor and Rankin cod but also lands significant catches of shorter-lived species such as blue spotted emperor (DPIRD, 2020).	Demersal fish traps.	Approximately 30 m isobath to 200 m isobath (DPIRD. n.d.).
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Pilbara Trap Managed Fishery caught 597 t in 2022, 662 t in 2021, 584 t in 2020, 680 t in 2019, 563 t in 2018, 573 t in 2017, 495 t in 2016, 510 t in 2015 and 268 t in 2014 (Wakefield et al., 2023a). The total catch of 597 t in 2022 made up 24% of the total catch by the Pilbara Demersal Scale Fishery and exceeded the acceptable catch range for the total catch (Wakefield et al., 2023a).	
				<b>Active Licences / Vessels:</b>	Three active vessels in the trap sector in 2022 (Wakefield et al., 2023a).	



Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Pilbara Line Managed Fishery		✓	✓	<b>Management Area:</b>	The Pilbara Line Managed Fishery boat licences are permitted to operate anywhere within 'Pilbara water', 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.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				The Pilbara Line Managed Fishery catch is made up around 45–50 different fish species. The 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 (DPIRD, 2020).	Demersal longline.	Information not available.
				<b>Fishing Effort:</b>	Based on State of the Fisheries annual reports provided by DPIRD, catch trends are as follows: The Pilbara Line Managed Fishery caught 104 t in 2022, 124 t in 2021, 167 t in 2020, 148 t in 2019, 93 t in 2018, 143 t in 2017, 126 t in 2016, 97 t in 2015 and 40 t in 2014 (Wakefield et al., 2023a). The total catch of 104 t in 2022 made up 4% of the total catch by the Pilbara Demersal Scalefish Fishery and was within the acceptable catch range (Wakefield et al., 2023a).	
				<b>Active Licences / Vessels:</b>	Four active vessels in 2022 (Wakefield et al., 2023a).	
Mackerel Managed Fishery	✓	✓	✓	<b>Management Area:</b>	The commercial fishery extends from the West Coast Bioregion to the WA/NT border. There are three managed fishing areas: Area 1: Kimberley (121° E to the WA/NT border); Area 2: Pilbara (114° E to 121° E) and Area 3: Gascoyne (27° S to 114° E) and West Coast (Cape Leeuwin to 27° S) (Lewis et al., 2020).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Spanish mackerel ( <i>Scomberomorus commerson</i> ), grey mackerel ( <i>S. semifasciatus</i> ), other species from the genus <i>Scomberomorus</i> .	Trolling, baits or lures cast, jigging (Lewis et al., 2020).	Information not available.

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b> Most of the catch is taken from waters off the Kimberley and Pilbara coasts (Lewis et al., 2020), reflecting the tropical distribution of mackerel species (Molony et al., 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 et al., 2003). Previous years catch based on State of the Fisheries annual reports provided by DPIRD: 212 t in 2022, 310 t in 2021, 290 t in 2020, 291 t in 2019, 214 t in 2018 (the lowest on record (Lewis et al., 2020), 283 t in 2017, 276 t in 2016, 302 t in 2015 and 322 t in 2014 (Lewis and Rynvis, 2023). The landed catch in 2021 was 238 t for Spanish mackerel and 10 t for grey mackerel (Lewis and Watt, 2023). The commercial landings for other large pelagic species, such as the amberjack and cobia were 19.7 t and 18.2 t, and other species contributed to the remaining <10 t of the total catch (Lewis and Watt, 2023). All species stocks are sustainable—adequate (Lewis and Rynvis, 2023).		
				<b>Active Licences / Vessels:</b> There were 16 vessels in 2022, primarily from May to November (Lewis and Rynvis, 2023).		
Marine Aquarium Fish Managed Fishery	✓	✓	✓	<b>Management Area:</b> The Marine Aquarium Fish Managed Fishery can operate throughout WA 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 et al., 2021b). There has been recent effort in the waters from Broome northwards to the NT border (Newman et al., 2023a).		
				<b>Species Targeted</b> Finfish, hard coral, soft coral, tridacnid clams, syngnathids (seahorses and pipefish), other invertebrates (including molluscs, crustaceans, echinoderms), algae, seagrasses and 'live rock'. The resource potentially includes over 1500 species of marine aquarium fishes (Newman et al., 2021b).	<b>Fishing Methods</b> The fishery is diver-based, which typically restricts effort to safe diving depths (less than 30 m).	<b>Fishing Depth</b> Information not available.

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b> Total catch for the Marine Aquarium Fish Managed Fishery in 2022 was 98,694 fishes and invertebrates, 17.83 t of coral, live rock, and living sand, and 39 L of marine plants and live feed. (Newman et al., 2023a). In 2021, the total catch for the Marine Aquarium Fish Managed Fishery was 92,227 fishes (including syngnathids, invertebrates and sponges), 27.97 t of coral, live rock and living sand, and 42 L of marine plants and live feed (Newman et al., 2023). In 2020 was 89,925 fishes, 32.12 t of coral, live rock and living sand and <20 L of marine plants and live feed (Newman et al., 2021b). Dominant fish species caught in 2022 include spotted blenny ( <i>Istiblennius meleagris</i> ), scribbled angelfish ( <i>Chaetodontoplus duboulayi</i> ), black-axil chromis ( <i>Chromis atripectoralis</i> ), stripey ( <i>Microcanthus strigatus</i> ), Vachell's glassfish ( <i>Ambassis vachellii</i> ), margined coralfish ( <i>Chelmon marginalis</i> ), black-axil chromis ( <i>Chromis atripectoralis</i> ), and blue and yellow wrasse ( <i>Anampses lennardi</i> ) (Newman et al., 2023a). The breeding stocks of landed species are classified as sustainable—adequate (Newman et al., 2023a)		
				<b>Active Licences / Vessels:</b> 13 licences were active in 2022 across the Marine Aquarium Fish Managed Fishery and the Hermit Crab Fishery (Newman et al., 2023a).		
Western Australian Sea Cucumber Fishery (formerly Beche-de-mer Fishery)	✓	✓	✓	<b>Management Area:</b> Fishing occurs mostly in the northern half of WA from Exmouth Gulf to the NT border and is managed under Ministerial Exemptions. Shark Bay was fished for the first time in 2020 (Hart et al., 2023a) and again in 2021 (Newman et al., 2022).		
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Two main species: sandfish ( <i>Holothuria scabra</i> ) and redfish ( <i>Actinopyga echinities</i> ).	Diving and wading. Collected by hand.	The targeted species typically inhabit nearshore in shallow depths.
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Western Australian Sea Cucumber Fishery caught 56.5 t in 2022, 41.3 t in 2021 3.6 t in 2020, 6.9 t in 2019, 62 t in 2018 (Gaughan and Santoro, 2020), 135 t in 2017, 93 t in 2016 and 38 t in 2015. In 2022, 45.2 t of the total catch consisted of sandfish ( <i>Holothuria scabra</i> ), 10.8 t deepwater redfish ( <i>Actinopyga echinities</i> ), and 0.5 t of black teatfish ( <i>Holothuria whitmaei</i> ) (Newman et al., 2023d). Sandfish were collected from the Kimberley only, which was last fished in 2017 (Hart et al., 2023). Deepwater redfish and black teatfish were harvested from Shark Bay (under an exception licence granted to native title holders), which was the second time this stock had been fished (Hart et al., 2023). The stock status of sandfish, in the Kimberly, and red fish species landed are considered to be sustainable—adequate, while the sandfish in the Pilbara are not sustainable—inadequate. (Hart et al., 2023f).		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Active Licences / Vessels:</b>	Two operating vessels operating in 2022 (Hart et al., 2023f).	
Onslow Prawn Managed Fishery		✓		<b>Management Area:</b>	The Onslow Prawn Managed Fishery encompasses a portion of the continental shelf off the Pilbara.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Western king prawns ( <i>Penaeus esculentus</i> ), brown tiger prawns ( <i>Penaeus esculentus</i> ), blue endeavour prawns ( <i>Metapenaeus endeavouri</i> ).	Low opening, otter prawn trawl systems.	Fishery and or fishing activity overlaps the Beadon Creek dredging scope (Sporer et al., 2015).
				<b>Fishing Effort:</b>	The total landings for the Onslow Prawn Managed Fishery in 2022 are not available due to data confidentiality (Wilkin, et al., 2023b). In 2021 were less than the target catch range of 60 t (Kangas et al., 2023a). 37 days of fishing took place in 2021, compared to 13 days in 2020 (Kangas et al., 2023a). The breeding stocks of banana, brown tiger, and western king prawns are considered sustainable—adequate (Kangas et al., 2023a).	
				<b>Active Licences / Vessels:</b>	One vessel active in 2021 (Kangas et al., 2023a).	
Pearl Oyster Managed Fishery	✓	✓	✓	<b>Management Area:</b>	The Pearl Oyster Managed Fishery is located in shallow coastal waters, designated by four zones extending from Exmouth to Kununurra and the seaward boundary demarcated by the 200 NM EEZ. The fishery is currently managed under the <i>Pearling Act 1990</i> (Hart et al., 2023b).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Silver lipped pearl oysters ( <i>Pinctada maxima</i> ).	Drift diving.	Fishing effort is mostly focused in shallow coastal waters (10–15 m depth), with a maximum depth of 35 m (Lulofs et al., 2002).
				<b>Fishing Effort:</b>	In 2021, catch was taken from Zones 2 and 3 only with no fishing in Zone 1, which has not been fished from 2017 to 2021 (Hart et al., 2023b). In 2022, the number of wild-caught pearl oysters was 756,531 (Hart et al., 2023d). Total dive hours increased in 2022 from 8175 hours in 2021 to 10,906 hours due to a 28% increase in harvest. (Hart et al., 2023d). Zones one to three are all considered to be sustainable—adequate (Hart et al., 2023b).	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Active Licences / Vessels:</b>	Six active vessels in 2022 (Hart et al., 2023b).	
<b>Pilbara Crab Managed Fishery</b>		✓	✓	<b>Management Area:</b>	The Pilbara Crab Managed Fishery covers inshore waters from Onslow to Port Hedland (between longitudes 115° 5' 60" E and 120° E), with most activity around Nickol Bay (Johnston et al., 2020b). 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).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Blue swimmer crab ( <i>Portunus armatus</i> ) (Johnston et al., 2021).	Hourglass traps (Johnston et al., 2021).	Up to 50m deep (Johnston et al., 2020a).
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: Catch for the Pilbara Crab Managed Fishery was 11.2 t in 2022, 9.7 t in 2021, 0.6 t in 2020 and 19.3 t in 2019 (Johnston et al., 2023a). The total catch in 2021 was a substantial increase from the 2.1 t caught in 2020, which was the lowest landed catch in 20 years (Johnston et al., 2023a). In 2022 the blue swimmer crab catch accounted for 2% of the State commercial catch, all taken by the fishery (Johnston et al., 2023a). The blue swimmer crab stock status is considered sustainable—adequate (Johnston et al., 2023a).	
				<b>Active Licences / Vessels:</b>	No information available currently.	
<b>South West Coast Salmon Managed Fishery</b>	✓	✓	✓	<b>Management Area:</b>	The South-west Coast Salmon Managed Fishery operates on various beaches south of the metropolitan area and includes all WA waters north of Cape Beaufort except Geographe Bay.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Western Australian salmon ( <i>Arripis truttaceus</i> ).	Beach seine nets.	Information not available.
				<b>Fishing Effort:</b>	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 commercial catch for the entire West Coast Nearshore and Estuarine Finfish resource was 302.5 t in 2022. The total catch of Western Australian salmon was 82.9 t in 2022, a decrease from 88.5 t in 2021. The Western Australian Salmon stock status is considered sustainable—adequate. (Duffy et al., 2023c).	

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Fishery	Woodside Activity Area			Description	
	Browse	NWS/S	NWC		
				<b>Active Licences / Vessels:</b>	The number of active vessels or licences in 2021 is unknown; however, there were approximately 12 commercial fishers employed in 2018 (Duffy et al., 2023)
<b>Specimen Shell Managed Fishery</b>	✓	✓	✓	<b>Management Area:</b>	The Specimen Shell Managed Fishery encompasses the entire WA coastline, but effort is concentrated in areas adjacent to the population centres such as Broome, Exmouth, Shark Bay, Geraldton, Perth, Mandurah, the Capes area and Albany (Hart et al., 2023c). There are several closed areas where the fishery is not permitted to operate. These include various marine parks and aquatic reserves, such as Ningaloo Marine Park. The Perth metropolitan area is also important because of its populations of two rare cowrie species (Hart et al., 2023c).
				<b>Species Targeted</b>	<b>Fishing Methods</b>
				The Specimen Shell Managed Fishery targets the collection of specimen shells for display, collection, cataloguing and sale.  About 200 species of specimen shell are collected each year. There is some focus of effort on mollusc families that are most popular with shell collectors, such as cowries, cones, murexes and volutes (Hart et al., 2023c).	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).
				<b>Fishing Effort:</b>	<b>Fishing Depth</b>
				A total of 5074 specimen shells were collected in 2022, distributed over 200 species (Hart et al., 2023f). A total of 5443 specimen shells were collect distributed over 200 species in 2021 (Hart et al., 2023b). Total number of specimen shells collected in 2020 was 4258 shells, across 206 species (Hart et al., 2021c).  Stocks of landed species in the Specimen Shell Managed Fishery are classified as sustainable—adequate (Hart et al., 2023f).	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 et al., 2023c).
				<b>Active Licences / Vessels:</b>	An exemption for the trial of remotely operated underwater vehicles (limited to one per licence) was in place during 2021 (Hart et al., 2023c).  There was a total of 30 licences in the fishery, of which 16 licences were fished in 2022 (Hart et al., 2023f). Effort in 2022 was 388 days (Hart et al., 2023f).

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
West Australian Abalone Fishery	✓	✓	✓	<b>Management Area:</b>	The Western Australian Abalone Managed 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. It is divided into eight management areas. The fishery for Greenlip and Brownlip abalone operates in areas 1–4 and the Roe's abalone fishery operates in areas 1, 2, 5, 6, 7 and 8 (DoF, 2011).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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).
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total catch for greenlip and brownlip abalone in 2022 was 40.1 t whole weight (26.6 t greenlip and 13.5 t brownlip), (Strain et al., 2023d), an increase from 2021 which was 39 t whole weight (greenlip 25.9 t and brownlip 13.1 t) (Strain et al., 2023a). The total catch in 2021 was the lowest catch recorded for greenlip/brownlip in 53 years (Strain et al., 2023d).  The Roe's abalone resource catch for 2022 was 28.9 t, a 2.6% decrease from the previous season (Strain et al., 2023c). In 2021 was 29.7 t whole weight, an increase from 18.2 t whole weight in 2020 (Strain et al., 2023a).  The stock status of greenlip abalone is considered inadequate and brownlip abalone is adequate (Strain et al., 2023a). The stock status of the Roe's abalone is considered adequate (Strain et al., 2023c).	
				<b>Active Licences / Vessels:</b>	There were 16 registered vessels in 2022 for the Greenlip and Brownlip Abalone Fishery (Strain et al., 2023d) and 21 for Roe's; however, only a small proportion were active (Strain et al., 2023c).	
Western Australia Joint Authority Northern Shark Fishery	✓			<b>Management Area:</b>	The Western Australia Joint Authority Northern Shark Fishery extends from longitude 12° 45'E to the Northern Territory border.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Blacktip shark ( <i>Carcharhinus tilstoni</i> ), spot-tail shark ( <i>Carcharhinus sorrah</i> ).	Gillnets and longlines.	Information not available.
				<b>Fishing Effort:</b>	Since 2005, 60% of the waters have been closed to finishing and limited on the number of fishing days. No catch has been reported since 2008/2009 (Braccini and Watt, 2023).	
				<b>Active Licences / Vessels:</b>	Information not available.	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
West Coast Deep Sea Crustacean Managed Fishery	✓	✓	✓	<b>Management Area:</b>	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.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				<p>The fishery targets deepwater crustaceans:</p> <ul style="list-style-type: none"> <li>• crystal (snow) crab (<i>Chaceon albus</i>)</li> <li>• giant (king) crab (<i>Pseudocarcinus gigas</i>)</li> <li>• champagne (spiny) crabs (<i>Hypothalassia acerba</i>).</li> </ul> <p>Catches are dominated by crystal crabs of which 99% of their total allowable catch was landed in 2020 (How and Baudains, 2021).</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.	Deeper than 150 m (and mostly at depths of between 500–800 m). Most of the commercial crystal crab catch is taken in depths of 500–800 m (WAFIC <sup>22</sup> ).
				<b>Fishing Effort:</b>	<p>Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total landings were 133.5 t in 2022, 155.5 t in 2021, 156.1 t in 2020, 155.7 t in 2019 and 168 t in 2018.</p> <p>The total landings of crustaceans in 2022 was dominated by crystal crabs (123.2 t). A further 10 t of champagne crabs and 0.1 t of giant crab were also landed in 2022 (How et al., 2023c).</p> <p>The stock status for crystal crab is considered adequate. However, it is likely that the stock biomass is near or below its threshold level, but above its limit level (How and Wiberg, 2023a).</p>	
Abrolhos Islands and Mid-West Trawl Fishery			✓	<b>Active Licences / Vessels:</b>	There were seven licence holders with five vessels active in 2022 (How et al., 2023c).	
				<b>Management Area:</b>	The Abrolhos Islands and Mid-West Trawl Fishery operates around the Abrolhos Islands within the SWMR.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Saucer scallops ( <i>Ylistrum balloti</i> , formerly <i>Amusium balloti</i> ).	Otter trawl.	Saucer scallops occur in inshore waters around 40 m depth at the Abrolhos Islands (Kangas et al., 2021a).

<sup>22</sup> <https://www.wafic.org.au/fishery/west-coast-deep-sea-crustacean-fishery/>



Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Abrolhos Islands and Mid-West Trawl Fishery did not fish in 2022 due to the stock being environmentally limited. (Wilkin et al., 2023a) The fishery landed 123.1 t meat weight (615.1 t whole weight) in 2021, 238.6 t meat.	
				<b>Active Licences / Vessels:</b>	The number of vessels is unreported. There were 10 licences in 2021 (Kangas et al., 2023b).	
Broome Prawn Managed Fishery	✓			<b>Management Area:</b>	The Broome Prawn Managed Fishery operates off Broome and forms part of the North Coast Prawn Fishery.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Western king prawn ( <i>Penaeus latisulcatus</i> ), brown tiger prawns ( <i>Penaeus esculentus</i> ), blue endeavour prawns ( <i>Metapenaeus endeavouri</i> ).	Low opening, otter prawn trawl systems.	Trawling is generally in waters between 30 and 60 m deep; however, can occur down to 100 m (DOEH, 2004).
				<b>Fishing Effort:</b>	The DPIRD state of State of the Fisheries annual reports indicate that no fishing efforts occurred in 2022 and extremely low fishing effort occurred in 2021, 2020 and 2019 (Wilkin et al., 2023b). The stock status of western king prawns is considered sustainable—adequate (Kangas et al., 2023a).	
				<b>Active Licences / Vessels:</b>	No boats undertook trial fishing activities in 2022 (Wilkin et al., 2023b).	
Exmouth Gulf Prawn Managed Fishery			✓	<b>Management Area:</b>	The Exmouth Gulf Prawn Managed Fishery operates within the sheltered waters of Exmouth Gulf. The fishery occupies a total area of 4000 km <sup>2</sup> , with only half of this area being trawled (Fletcher and Santoro, 2015).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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 merguensis</i> ).	The fishery uses low opening, otter prawn trawl systems (Kangas et al., 2021c).	Information not available.

Fishery	Woodside Activity Area			Description			
	Browse	NWS/S	NWC				
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Exmouth Gulf Prawn Managed Fishery landed 898 t in 2022, 777 t in 2021, 673 t in 2020, 821 t in 2019, 880 t in 2018, 713 t in 2017 and 822 t in 2016 (Wilkin et al., 2023c).  The total catch comprised of 411 t of brown tiger prawns, 218 t of western king prawns, and 269 t of blue endeavour prawns (Wilkin et al., 2023c).  Stock status of landed species is considered sustainable—adequate (Kangas et al., 2023c).		
				<b>Active Licences / Vessels:</b>	The number of participation vessels is six. Approximately 126 people, including skippers and other crew were employed in 2022 (Wilkin et al., 2023c).		
Gascoyne Demersal Scalefish Managed Fishery			✓	<b>Management Area:</b>	The Gascoyne Demersal Scalefish Managed Fishery is located between the southern Ningaloo Coast to south of Shark Bay with a closure area at Point Maud to Tantabiddi (WAFIC <sup>23</sup> ).		
				<b>Species Targeted</b>		<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Pink snapper ( <i>Chrysophrys auratus</i> ), goldband snapper ( <i>Pristipomoides multidens</i> ). Other demersal species caught include: <ul style="list-style-type: none"><li>tropical snappers</li><li>emperors</li><li>cods</li><li>mulloway trevallies.</li></ul>		Mechanised handlines.	The target species inhabit waters deeper than 20 m (Jackson et al., 2021a).
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Gascoyne Demersal Scalefish Managed Fishery reported a total commercial catch of 166 t in 2022, 164 t in 2020–21, 207 t in 2019–20, 173 t in 2018–19 and 210 t in 2017–18.  The total of commercial catches comprised 42 t of pink snapper, 83 t goldband snapper, and 41 t of other mixed species (Jackson et al., 2023c).  The stock status for pink snapper is considered recovering, with goldband snapper considered sustainable—adequate (Jackson et al., 2023c).		

<sup>23</sup> <https://www.wafic.org.au/fishery/gascoyne-demersal-scalefish-fishery/>

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Active Licences / Vessels:</b>	Ten vessels fished during 2022, six of which fished for more than 10 days during peak pink snapper season (Jackson et al., 2023c).	
Kimberley Crab Managed Fishery (formerly Kimberley Developing Mud Crab Fishery)	✓			<b>Management Area:</b>	Kimberley Crab Managed 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). In November 2018, the fishery transitioned from developing to fully managed (Johnston et al., 2020b).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Brown mud crab ( <i>Scylla olivacea</i> ), green mud crab ( <i>Scylla serrata</i> ).	Trap. Exemption holders use crab traps and drop nets in waters adjacent to native title lands (Johnston et al., 2023).	Information not available.
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total crab landed was 13.6 t in 2022, 9.7 t in 2021, 1.5 t in 2020, 3.2 t in 2018 and 7.4 t in 2019. In 2022, Kimberley Crab Managed Fishery landed a total catch of 2.4 t of brown mud crab represented the entire reported commercial mud crab catch (Johnston et al., 2023a). Mud crab species in the managed fishery is considered sustainable—adequate (Johnston et al., 2023a).	
				<b>Active Licences / Vessels:</b>	There is an allocation of 1200 units (equivalent to 600 traps) to licence holders (Johnston et al., 2023). An equivalent allocation of 600 traps for commercial purposes was provided to Traditional Owner groups through the granting of non-transferable Instruments of Exemption under the <i>Fish Resources Management Act 1994</i> . Two people were employed in 2022 between August and October (Johnston et al., 2023a).	
Nickol Bay Prawn Managed Fishery		✓		<b>Management Area:</b>	The Nickol Bay Prawn Managed Fishery operates in nearshore and offshore waters of the Pilbara region along the NWS. 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).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Banana prawn ( <i>Penaeus merguensis</i> ), western king prawn ( <i>Penaeus latissulcatus</i> ), brown tiger prawn ( <i>Penaeus esculentus</i> ), blue endeavour prawn ( <i>Metapenaeus endeavouri</i> ).	Low opening, otter prawn trawl systems.	Information not available.

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Nickol Bay Prawn Managed Fishery landed 51 t in 2022, 123.4 t in 2021, 202.4 t in 2020, 254 t in 2019 and 81 t in 2018 (Wilkin et al., 2023b). Of the total landings in 2022, landings were dominated by 42 t banana prawns and 7 t brown tiger, and 2 t blue endeavour (Wilkin et al., 2023b). Fishing effort was 62 boat days, a decrease from 175 days in 2021 (Wilkin et al., 2023b). The banana prawn stock status within the Nickol Bay Prawn Managed Fishery is considered sustainable—adequate (Wilkin et al., 2023b).		
				<b>Active Licences / Vessels:</b> There were three participating vessels in 2022 (Wilkin et al., 2023b).		
Northern Demersal Scalefish Managed Fishery	✓			<b>Management Area:</b> The Northern Demersal Scalefish Managed Fishery is divided into two fishing areas: an inshore sector (Area 1) and an offshore sector (Area 2) (Newman et al., 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 et al., 2017).		
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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> ).	Handline, dropline and fish trap.	Information not available.
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Northern Demersal Scalefish Managed Fishery landed 1458 t in 2022, 1544 t in 2021, 1419 t in 2020, 1507 t in 2019, and 1297 t in 2018. In 2022, the majority of the catch was landed from Zone B, with 1235 t in 2022. The 2022 catch of jobfish group ( <i>Pristipomoides spp.</i> ) was 552 t, 91% of which was goldband snapper (Wakefield et al., 2023a). The stock status of landed species in the managed fishery is classified as sustainable—adequate (Wakefield et al., 2023a).		
				<b>Active Licences / Vessels:</b> Eight active vessels in 2022 (Wakefield et al., 2023a).		

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Octopus Interim Managed Fishery	-	-	-	<b>Management Area:</b>	The Octopus Interim Managed Fishery operates from Kalbarri Cliffs in the north to Esperance in the south.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				<i>Octopus djinda</i> , which is closely related to <i>Octopus tetricus</i> .	Primary method is baited octopus trap (combination of active trapping via trigger mechanisms, and passive trapping—shelter traps) (Hart et al., 2023d).	In inshore waters to a depth of 70 m (DPIRD, 2018a).
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: Commercial catch for the Octopus Interim Managed Fishery was 744 t in 2022, 487 t in 2021, 254 t in 2020, 453 t in 2019, 314 t in 2018, 257 t in 2017 and 252 t in 2016 (Hart et al., 2023g). In 2022, the total catch of octopus was 744 t live weight, which was 53% higher than 2021 with a total catch of 487 t (Hart et al., 2023g). Octopus stock status in 2022 is considered sustainable—adequate (Hart et al., 2023g).	
				<b>Active Licences / Vessels:</b>	27 active vessels in 2022 (Hart et al., 2023g).	
Shark Bay Beach Seine and Mesh Net Managed Fishery	-	-	-	<b>Management Area:</b>	The Shark Bay Beach Seine and Mesh Net Managed Fishery operates from Denham.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Whiting (yellowfin <i>Sillago schomburgkii</i> ), sea mullet ( <i>Mugil cephalus</i> ), tailor ( <i>Pomatomus saltatrix</i> ), western yellowfin bream ( <i>Acanthopagrus australis</i> ).	Beach seine and mesh net.	Information not available.
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: Total catch was 131 t in 2022, 135 t in 2021, 171 t in 2020, 175 t in 2019 and 176 t in 2018. Of the total catch in 2022, 78 t consisted of whiting, 25 t of sea mullet, 16 t of western yellowfin bream, 6 t of tailor, and 1.5 t of pink snapper (Jackson et al., 2023b). The stock status of targeted species is sustainable—adequate (Jackson et al., 2023b).	
				<b>Active Licences / Vessels:</b>	Five vessels were active in 2022 (Jackson et al., 2023b).	

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
Shark Bay Crab Managed Fishery	-	-	-	<b>Management Area:</b>	The Shark Bay Crab Managed Fishery operates within the NWMR. It is based primarily in Carnarvon but operates throughout the waters of Shark Bay.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Blue swimmer crab ( <i>Portunus armatus</i> ).	Trap and trawl.	Information not available.
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The fishery landed 401 t in 2022, 549 t in 2020–21, 638 t in 2019–20, 529 t in 2018–19 and 518 t in 2017–18. The fishery closed for a period of 18 months in 2012 and 2013 to promote stock recovery, following a series of adverse environmental conditions between 2010 and 2011 (Chandrapavan et al., 2023). Limited commercial fishing resumed under a national quota management system between 2013 and 2017 (Chandrapavan et al., 2023). The current stock status is sustainable—adequate (Chandrapavan et al., 2023).	
				<b>Active Licences / Vessels:</b>	In the trawl sector in 2022 there were 10 licenced vessels based in Carnarvon with an additional eight vessels traveling to Carnarvon. There were three trap vessels (Chandrapavan et al., 2023a).	
Shark Bay Prawn and Scallop Managed Fishery	-	-	-	<b>Management Area:</b>	The Shark Bay Prawn Managed Fishery is the highest producing WA fishery for prawns. The Shark Bay Scallop Managed Fishery is usually Western Australia's most valuable scallop fishery (Kangas et al., 2021b).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Western king prawn ( <i>Penaeus latisulcatus</i> ), brown tiger prawn ( <i>Penaeus esculentus</i> ), endeavour prawns ( <i>Metapenaeus endeavouri</i> ), coral prawns ( <i>Metapenaeopsis sp.</i> ), saucer scallop ( <i>Amusium balloti</i> ).	Low-opening otter trawls.	Information not available.

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The Shark Bay Prawn Managed Fishery landed 831 t in 2022, 1,303 t in 2021, 1268 t in 2020, 1214 t in 2019, 1091 t in 2018 and 1608 t in 2017. Of the total landings, 503 t comprised of western king prawn, 326 t of brown tiger prawn, and 2 t of blue endeavour prawn (Wilkin et al., 2023d). The Shark Bay Scallop Managed Fishery has been managed under a quota management framework since the fishery reopened in 2015 (Kangas et al., 2021b). Scallop landings for Shark Bay were 35 t (177 t meat weight) in 2022, 123.6 t meat weight (618.2 t whole weight) in 2021, 177.1 t meat weight (885.5 t whole weight) in 2020 and 339 t meat weight (1,694 t whole weight) in 2019. All stocks for target species are considered sustainable—adequate (Wilkin et al., 2023a).		
				<b>Active Licences / Vessels:</b> In the trawl sector in 2022 there were 10 licenced vessels based in Carnarvon with an additional eight vessels traveling to Carnarvon (Wilkin et al., 2023d). In the Shark Bay Scallop Managed Fishery there are boats licenced to take scallops (11 Class A licences) and boats that also fish for prawns (18 Class B licences). There were eight vessels (Wilkin et al., 2023a).		
South Coast Crustacean Managed Fishery	-	-	-	<b>Management Area:</b> 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.		
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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> ).	Pots.	Information not available.
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The South Coast Crustacean Managed Fishery reported a total catch of 23.8 t in 2022, 27.4 t in 2020–21, 52.5 t in 2019–20, 67.5 t in 2018–19 and 101.2 t in 2017–18 season. In 2022, the total crustacean landings comprised of champagne crabs (3.6 t), southern rock lobster (6.4 t), giant crabs (5.7 t), western rock lobster (5 t), and crystal crabs (3.1 t) (How et al., 2023d). The stock status is sustainable—adequate (How and Wiberg, 2023b).		

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Fishery	Woodside Activity Area			Description	
	Browse	NWS/S	NWC		
				<b>Active Licences / Vessels:</b>	The South Coast Crustacean Managed Fishery is based on mobile vessels that employ a skipper and one to three crew. In 2022, there were nine participating vessels (How et al., 2023d).
South Coast Purse Seine Managed Fishery	-	-	-	<b>Management Area:</b>	The South Coast Purse Seine Managed Fishery is active in coastal waters between Cape Leeuwin and the South Australia border. Landings are primarily off Albany, Bremer Bay and Esperance (Norriss and Blazeski, 2020). The managed fishery has five management zones: centred on King George Sound (Zone 1), Albany (Zone 2), Bremer Bay (Zone 3), Esperance (Zone 4) and a developmental zone near Cape Leeuwin (Zone 5) where catches have been negligible (Norriss and Blazeski et al., 2023a).
				<b>Species Targeted</b>	<b>Fishing Methods</b>
				Small pelagic finfish. Australian sardine (pilchards, <i>Sardinops sagax</i> ), yellowtail scad ( <i>Trachurus novaezelandiae</i> ), Australian anchovy ( <i>Engraulis australis</i> ), scaly mackerel ( <i>Sardinella lemuru</i> ), maray ( <i>Etrumeus jacksoniensis</i> ). Entitled to take sandy sprat ( <i>Hyperlophus vittatus</i> ) and blue sprat ( <i>Spratelloides robustus</i> ); however, not reported caught since 1993/94.	Purse seine nets from vessels.
				<b>Fishing Effort:</b>	Information not available.
				<b>Active Licences / Vessels:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The South Coast Purse Seine Managed Fishery landed 1636 t in 2022, 1255 t in 2020–21, 1498 t in 2019–20, 1064 t in 2018–19 and 2168 t in the 2017–18 season. The total catch in 2022, consisted of >99% of Australian sardines (Norriss and Blazeski et al., 2023c). Fishing effort in 2022 was 576 boat days (Norriss and Blazeski et al., 2023c). The stock status for the Australian sardine is considered sustainable—adequate (Norriss and Blazeski et al., 2023c).

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
South-west Trawl Managed Fishery	-	-	-	<b>Management Area:</b>	The South-west Trawl Managed Fishery is a multi-species fishery and includes two of WA's smaller scallop fishing grounds at Fremantle and north of Geographe Bay (Fairclough and Walters, 2018).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Scallops ( <i>Ylistrum balloti</i> , formerly <i>Amusium balloti</i> ) and associated by-products. In years of low scallop catches, licencees may use trawl gear to target fin-fish species.	Trawl.	Information not available.
				<b>Fishing Effort:</b>	Catch levels are unavailable for recent years. The fishery was not active in 2015 or 2016 (Fairclough and Walters, 2018). Effort in the fishery is highly variable and typically fluctuates in response to recruitment variability in saucer scallops and prawns. In 2021 <1% of the allowable area was trawled in the South-west Trawl Managed Fishery (Kangas et al., 2023b). The stock status of scallops is considered sustainable—adequate (Wilkin et al., 2023a).	
				<b>Active Licences / Vessels:</b>	One vessel fished in 2022 (Wilkin et al., 2023a).	
The South Coast Salmon Managed Fishery	-	-	-	<b>Management Area:</b>	The South Coast Salmon Managed Fishery is one of two fisheries operating in the South Coast Bioregion that target nearshore and estuarine finfish.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				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.

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: Total catch for the South Coast Estuarine and Nearshore Scalefish and Invertebrates Resource was 267.6 t for 2022, 275.1 t in 2021 and 334 t in 2020. Of this, the South Coast Salmon Managed Fishery landed 48.5 t of Western Australian salmon in 2021, 76 t in 2020 and 56.5 t in 2019. The stock status of target species is sustainable—adequate (Duffy et al., 2023b).		
				<b>Active Licences / Vessels:</b> Catch was recorded against eight licences in 2022 (Duffy et al., 2023d).		
West Coast Beach (Beach Bait Fish Net) Managed Fishery	-	-	-	<b>Management Area:</b> Primarily active in the Bunbury areas in the SWMR, operates between 26° and 33° S.		
				<b>Species Targeted</b> Whitebait.	<b>Fishing Methods</b> Beach-based haul nets.	<b>Fishing Depth</b> Information not available.
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total catch of whitebait in 2022 was 23.3 t, an increase from 21.3 t in 2021 (Duffy et al., 2023c). The fishery continues to be environmentally limited with stocks recovering from the 2010/11 marine heat wave (Duffy et al., 2023a). The stock status is inadequate—environmentally limited (Duffy et al., 2023c).		
				<b>Active Licences / Vessels:</b> The number of active vessels in 2021 is unknown; however, five licencees reported landings of whitebait in 2011 (Smith et al., 2011)		
				<b>Management Area:</b> The West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery is part of the Temperate Demersal Gillnet and Demersal Longline Fishery, which operates between 26° and 33° S, and the Joint Authority Southern Demersal Gillnet and Demersal Longline Managed Fishery, which operates from 33° S to the WA/SA border (Braccini and Blay, 2020).		
West Coast Demersal Gillnet and Demersal Longline (Interim) Managed Fishery	-	-	-	<b>Species Targeted</b> Gummy shark ( <i>Mustelus antarcticus</i> ), dusky shark ( <i>Carcharhinus obscurus</i> ), whiskery shark ( <i>Furgaleus macki</i> ). Sandbar shark ( <i>C. plumbeus</i> ) Scalefish are a byproduct.	<b>Fishing Methods</b> Gillnet and longline.	<b>Fishing Depth</b> Information not available.

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Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
				<b>Fishing Effort:</b>	<p>Catches of elasmobranchs and fishing effort for the Temperate Demersal Gillnet and Demersal Longline Fishery peaked during the late 1980s and early 1990s and have stabilised at lower levels in recent years (Braccini and Watt, 2021).</p> <p>Previous years values from State of the Fisheries annual reports provided by DPIRD: Estimated annual value to the fishery was \$0.23 million for 2021–22, \$0.17 million for 2020–21, \$0.11 million for 2019–20, \$0.2 million for 2018–19 and \$0.3 million for 2017–18.</p> <p>Stock status for the gummy and whiskery shark is considered sustainable—adequate, with the dusky and sandbar shark status sustainable—recovering (Braccini and Rynvis, 2023).</p>	
				<b>Active Licences / Vessels:</b>	Vessel and licence data is not available. There were approximately 10 to 11 skippers and crew employed during the 2020–22 period (Braccini and Rynvis, 2023).	
West Coast Demersal Scalefish Interim Managed Fishery	-	-	-	<b>Management Area:</b>	The West Coast Demersal Scalefish Interim 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.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				The resource comprises over 100 species, including: <ul style="list-style-type: none"> <li>• baldchin groper (<i>Choerodon rubescens</i>)</li> <li>• dhufish (<i>Glaucosoma hebraicum</i>)</li> <li>• pink snapper (<i>Pagrus auratus</i>).</li> </ul>	Lines.	Information not available.
				<b>Fishing Effort:</b>	<p>Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The West Coast Demersal Scalefish Interim Managed Fishery retained 240 t in 2022, 259 t in 2021, 227 t in 2020, 254 t in 2019 and 230 t in 2018.</p> <p>Management commenced to recover stocks for the West Coast Demersal Scalefish Resource in 2008. Landings since 2008 have been below the stock recovery benchmark of 450 t (Fisher et al., 2023a).</p>	
				<b>Active Licences / Vessels:</b>	30 licenced vessels operated in 2022 (Fisher et al., 2023a).	

Fishery	Woodside Activity Area			Description		
	Browse	NWS/S	NWC			
West Coast Purse Seine Managed Fishery	-	-	-	<b>Management Area:</b>	Most of the catch in the West Coast Purse Seine Managed fishery are taken from between Cape Leeuwin and Geraldton. This region is separated into three zones (Northern Development Zone, Perth Metropolitan, and Southern Development zone (Norriss and Blazeski, 2023b).	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Small pelagic finfish such as: <ul style="list-style-type: none"> <li>• scaly mackerel (<i>Sardinella lemuru</i>)</li> <li>• pilchards (<i>Sardinops sagax</i>)</li> <li>• Australian anchovy (<i>Engraulis australis</i>)</li> <li>• yellowtail scad (<i>Trachurus novaezelandiae</i>)</li> <li>• maray (<i>Etrumeus teres</i>).</li> </ul>	Purse seine.	Information not available.
				<b>Fishing Effort:</b>	Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total combined catch taken by the West Coast Purse Seine Managed Fishery and developmental licencees was 259 t in 2022, 504 t in 2021, 493 t in 2020, 527 t in 2019 and 340 t in 2018. In 2022, the total catch consisted of 66% scaley mackerel and 31% Australian sardine (Norriss and Blazeski, 2023d). Both the scaley mackerel and Australian sardine have a stock status classified as sustainable—adequate (Norriss and Blazeski, 2023d).	
				<b>Active Licences / Vessels:</b>	Five active vessels in 2022 (Norriss and Blazeski, 2023d).	
West Coast Rock Lobster Managed Fishery			✓	<b>Management Area:</b>	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.	
				<b>Species Targeted</b>	<b>Fishing Methods</b>	<b>Fishing Depth</b>
				Western rock lobster ( <i>Panulirus cygnus</i> ).	Baited pots.	Information not available.

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Fishery	Woodside Activity Area			Description	
	Browse	NWS/S	NWC		
				<b>Fishing Effort:</b> Previous years catch based on State of the Fisheries annual reports provided by DPIRD: The total catch for the West Coast Rock Lobster Fishery was 6342 t in 2022 (De Lestang and Walsh, 2023). Due to COVID-19 related logistics and marketing issues, the 2020–21 season was extended from 12 to 18 months. Since the current extended season is still in progress, data has been reported on a 12-month period (15 Jan 2021 to 14 Jan 2022) (How and Wiberg, 2023a). Landings for the 12-month (2021–22) season was 6334 t and the 18-month 2020–21 season was 9132 t. Commercial landings over the traditional 12-month season (15 Jan 2020 to 14 Jan 2021) were 5696 t. The fishery landed 6397 t in 2019 and 6400 t in 2018 and 2017. The stock status for the western rock lobster is classified as sustainable—adequate (How and Wiberg, 2023a).	
				<b>Active Licences / Vessels:</b> 218 vessels were active in the 2022 season (De Lestang and Walsh, 2023).	

### 12.2.2 Fish Habitat Protection Areas

Fish Habitat Protection Areas (FHPAs) are areas of special protection and management in Western Australian waters. They are established in areas identified as having a particular value for the protection of fish and their habitats, education and/or aquaculture and which is considered to require a higher level of protection than other parts of the marine environment (DPIRD, 2013). They are set under section 115 of the *Fish Resources Management Act 1994* (WA) for:

- the conservation and protection of fish, fish breeding areas, fish fossils or the aquatic ecosystem
- the culture and propagation of fish and experimental purposes related to that culture and propagation, or
- the management of fish and activities relating to the appreciation or observation of fish.

Under the Act, fish can include a range of organisms including finfish, crustaceans, molluscs, corals, seagrass and algae at all stages of their life cycles. FHPAs and a marine reserve declared under the *Conservation and Land Management Act 1984* (WA) cannot exist in the same area (DPIRD, 2013).

Management of an FHPA is designed and carried out to achieve the purposes outlined in a Plan of Management. FHPAs may restrict non-fishing related activities, such as the use of anchors, if they are considered to be inconsistent with the purpose of the FHPA; for example, if there is a risk to damage of fragile marine formations such as coral reefs. Protection may also involve the management of human activities such as dredging, draining of wetlands, and fishing or diving near sensitive marine habitats (DPIRD, 2013). Western Australia has six FHPAs (four within the NWMR and two within the SWMR):

- Abrolhos Islands
- Kalbarri Blue Holes
- Miaboolya Beach
- Point Quobba
- Cottesloe Reef
- Lancelin Island Lagoon.

#### 12.2.2.1 FHPAs Within the NWMR

##### Abrolhos Islands

The Houtman Abrolhos Islands (Abrolhos) is an archipelago of up to 210 small islands and associated reefs located approximately 65–90 km offshore from Geraldton, Western Australia (WA) (Evans et al., 2022). The Abrolhos FHPA includes all waters from the high-water mark of the Abrolhos Islands out to three nautical miles; an area of about 2500 km<sup>2</sup> (Evans et al., 2022).

The islands and waters of the Abrolhos are of significance for both land-based (e.g. seabird breeding, migratory shorebirds, carpet pythons, tammar wallabies, and significant flora and vegetation) and marine-based values (e.g. diverse and unique range of fish and marine aquatic species, significant commercial and recreational fisheries, aquaculture and marine tourism) (Evans et al., 2022). The reefs of the Abrolhos are extremely diverse, with approximately 184 species of coral, 295 species of marine algae and 389 species of fish (Evans et al., 2022).

The Abrolhos Includes specific regulations such as:

- temporal (seasonal) closures (e.g. closed season for baldchin groper, *Choerodon rubescens*, between 1 November and 31 January)
- spatial closures (e.g. Reef Observation Areas ~64.3 km<sup>2</sup> or 2.6% of Abrolhos FHPA)

- recreational fishing specific bag and possession limits (Evans et al., 2022).

The marine state territorial waters of the Abrolhos continue to be managed by the Department of Primary Industries and Regional Development.

### Kalbarri Blue Holes

The Blues Holes form part of an inshore coastal limestone reef system to the west of the town of Kalbarri. The northern boundary of the FHPA is located immediately west of the northern end of the Blue Holes car park and extends south from this point for approximately 420 m. The width of the FHPA varies from around 130 m wide at the southern end, to approximately 140 m wide at the northern end (DoF, 2007).

The Kalbarri Blue Holes FHPA includes part of a near-shore limestone reef system, which stretches intermittently from Red Bluff in the South to the Murchison River Mouth in the North (DoF, 2007). To First Nations people, access to the reef system—near to the river mouth—is likely to have made it a significant site for hunting fish and gathering seafood. The river mouth beside Kalbarri, is called ‘Wudumalu’ or ‘Wutumalu’ by the local Nhanda language group (DoF, 2014a).

The reef provides a base for a range of recreational activities including swimming, scuba diving and snorkelling. There is an abundance of finfish, shellfish, crustaceans, corals, seagrasses and sponges living there. There are up to 70 species of finfish, 10 types of sponge, and 11 species of coral found in the reef system (DoF, 2014a).

Regulations for protection of Kalbarri Blue Holes include:

- All marine life is protected, and no fishing activities are permitted.
- The use of all motorised vessels (boats and jet skis) is prohibited within the FHPA’s waters (DoF, 2014a).

### Miaboolya Beach

Miaboolya Beach is an area of the Gascoyne River delta near Carnarvon. The FHPA covers the nearshore waters and extends north to South Bejaling and south to the northern side of the Gascoyne River mouth. In addition, it includes the adjoining mangrove system, associated seasonal creeks and salt marshes (DoF, 2003).

The Miaboolya system has regional importance as a fish nursery and general fish habitat. Native fauna includes juvenile finfish species such as tailor (*Pomatomus saltatrix*), mullet (*Argyrosomus spp.*) and sand whiting (*Sillago ciliata*), and various crab species including mud crabs, blue swimmer and green mud crabs (family *Portunidae*). The fish and crab stocks use this environment for breeding, growth and development. Resident and migratory populations of birds, marine turtles and dolphins also exist within the area and contribute to its environmental value (DoF, 2003).

The Miaboolya area is of important cultural and historical value to the Gnulli native title group. The area is a place for traditional food collection and gathering for social occasions (DoF, 2003).

Recreational fishing is permitted; however, there are restrictions in place by the Department of Fisheries (DoF, 2014b).

### Point Quobba

The Point Quobba FHPA adjoins the well-known ‘Blowholes’ tourist attraction at Quobba Station, 75 km north-west of Carnarvon WA, at the northernmost point of Shark Bay (DoF, 2004).

The marine life and habitats of the area are of considerable scientific and recreational interest and are highly valued in the local community. However, the area is at risk from a high level of use and conflict between users, due to the area’s proximity to popular tourism sites, the boat ramp, camping and settlement areas (DoF, 2004).

The marine habitat at Point Quobba is in a transition zone between tropical and temperate climatic zones and is therefore highly diverse. It contains a mix of endemic temperate south-west Australian

species and tropical and temperate Indo-Pacific species. The FHPA provides relatively sheltered breeding and feeding habitat for more than 100 species (DoF, 2015)

Point Quobba lies within the traditional area of the Baiyungu people, who are members of the Gnulli Group. The Baiyungu people use the area regularly, sometimes to collect trochus for consumption at Point Quobba and Black Rock (DoF, 2004).

There is a designated 'restricted area' within the FHPA to protect vulnerable habitats and fish species from human activity. Within this area commercial and recreational fishing and jet-skiing are prohibited. Restrictions on fishing in the rest of the FHPA are defined by the Department of Fisheries (DoF, 2015).

### 12.2.2.2 FHPAs Within the SWMR

#### Cottesloe Reef

The Cottesloe reef system stretches intermittently for approximately 4.4 km from a point 300 m south of the artificial surfing reef at the Cable Station to North Street, Cottesloe. It is located on a limestone shelf, which is known locally as the Cottesloe Fringing Bank. This shelf extends approximately 1.5 km offshore from the beach. Limestone pinnacles, elevated platforms, and water-eroded limestone outcrops form most of the surface reef structure. In places, sea-grass patches and kelp beds occur within 100 m of the shoreline (DoF, 2001a).

The reef is readily accessible to the public and intensively used by locals and other Perth metropolitan residents and is therefore vulnerable to human impacts. The reef system and its waters are highly popular for recreational activities including surfing, windsurfing, swimming, paddle skiing, line fishing, spear fishing, snorkelling and scuba diving.

The Cottesloe Reef system contains a unique and diverse range of marine habitats. These include sand, sand with seagrass, limestone reef with large kelp and macroalgae, sponge beds and garden bottoms. In deeper water, corals, sea cucumbers and sponge gardens thrive and the slope of the reef platform at Mudurup Rocks provides habitat for animals such as feather stars and small molluscs, which are protected from heat and drying during low summer tides. An abundance of finfish can be found in and around the reef system, including herring, tailor, skipjack (silver trevally), whiting, morwong and tarwhine (silver bream). The reef is also a breeding ground for squid, Port Jackson sharks and other elasmobranchs including stingrays (DoF, 2001a; DoF 2010).

Regulations for protection of Cottesloe Reef include:

- Spearfishing is prohibited throughout the FHPA.
- Commercial fishing is prohibited throughout the FHPA.
- Recreational fishing (except net fishing) for fish such as tailor, herring, whiting, skipjack and garfish is permitted in the FHPA, subject to recreational fishing rules for the West Coast region.
- Anchoring of any craft in the FHPA is prohibited.
- Five yellow moorings have been provided within the FHPA for use by boats up to 12 m. These moorings are removed during winter (April–November) to prevent damage from winter storms (DoF, 2010).

#### Lancelin Island Lagoon

Lancelin Island is an emergent limestone feature of the coastal marine environment of the mid-west coast of Western Australia. The island is located approximately 110 km north of Perth and 800 m offshore from the Lancelin town site (DoF, 2001b).

The Lancelin Island Lagoon is a small area of reef habitat on the western side of Lancelin Island and a popular snorkelling and diving destination. Water depth ranges from less than 0.3 m on the intertidal reefs to less than 3 m on the sand or seagrass-covered bottom. The area has a diverse



array of benthic marine habitat. During a marine survey of the area, over 200 flora and fauna species were positively identified, with more remaining unidentified due to the diversity of species (DoF, 2001a).

The management strategy for the Lancelin Island Lagoon includes the following regulations:

- Prohibit all recreational and commercial fishing, aquaculture and collecting in the FHPA.
- Prohibit boat anchorage within the FHPA.
- Investigate the means to prohibit mining and exploration within the FHPA and in adjacent areas where the environmental values of the FHPA may be compromised (DoF, 2001a).

### 12.2.3 Aquaculture

Aquaculture operations in the northwest are typically restricted to inland and shallow coastal waters.

#### 12.2.3.1 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 near Geraldton.

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 (DPIRD, 2023).

#### 12.2.3.2 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 (DPIRD, 2023).

#### 12.2.3.3 North Coast Bioregion

Aquaculture activities in the North Coast bioregion is dominated by the production of pearls (from the *Pinctada margaritifera* oyster). 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 (DPIRD, 2023). 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).

Finfish aquaculture in the Kimberley region is dominated by Barramundi located in the Kimberley Aquaculture Development Zone which lies approximately 200 km north-east of Broome. Rock oyster trials are nearing completion near Karratha in the Pilbara region; however, there is no commercial production of the species in this region at this stage (DPIRD, 2023).

There is one Indigenous project at One Arm Point that operates a marine hatchery that focuses on a variety of ornamental and edible marine species (DPIRD, 2023).

#### 12.2.3.4 South Coast Bioregion

Aquaculture activities in the South Coast bioregion is dominated by the production of edible oysters (Akoya and rock oysters) and mussels within King George Sound in Albany. Other forms of private aquaculture in the region include sea cage farming of abalone, which are restricted to the South Coast near Augusta (Flinders Bay) and Esperance (Wylie Bay) (DPIRD, 2023).

### 12.3 Fisheries—Traditional

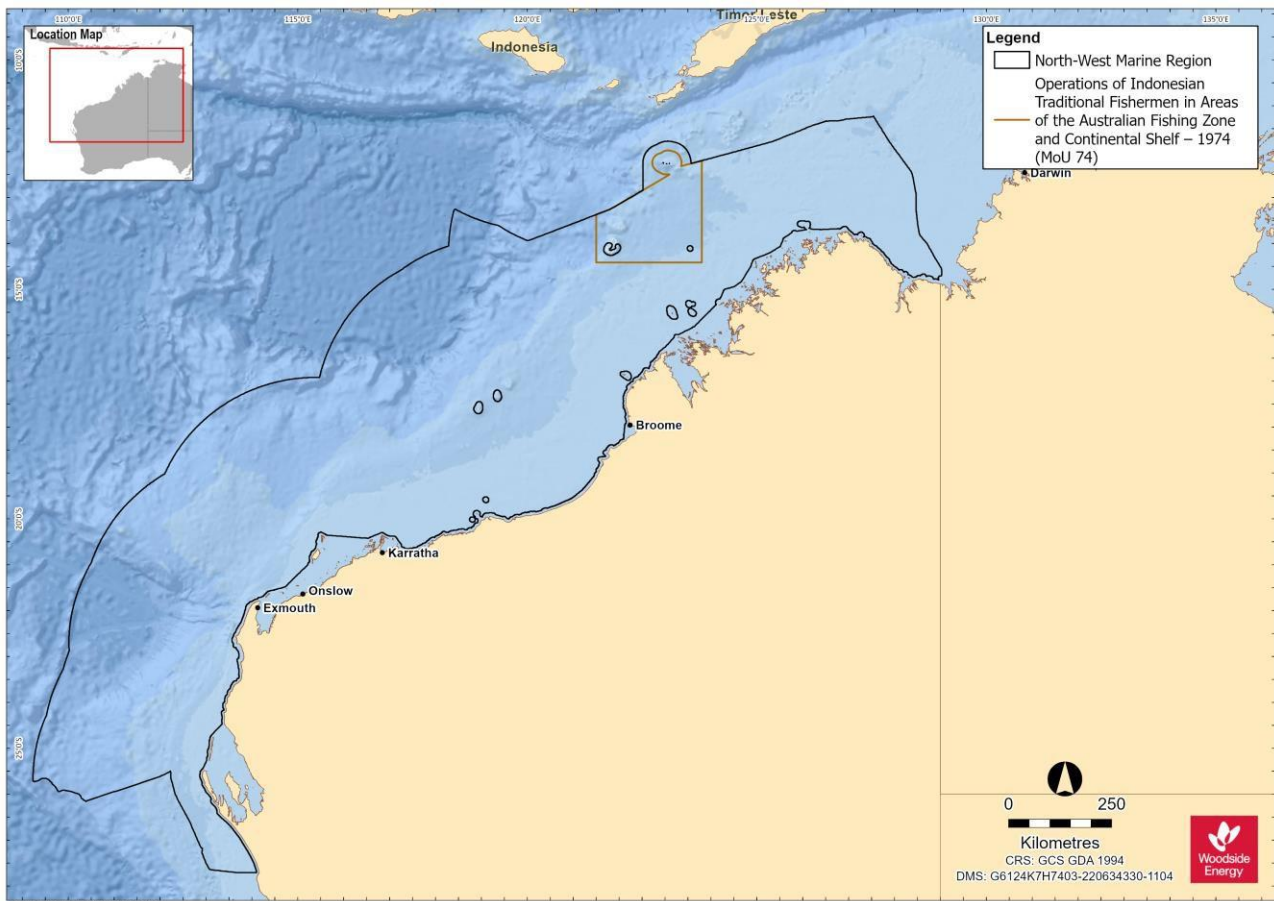
Traditional or customary fisheries are typically restricted to shallow coastal waters and/or areas with structures such as reef. The Western Australia Recreational Fishing Guide (2024) states that First Nations people do not need a recreational fishing licence in any waters if it is in accordance with continuing tradition and for individual or familial consumption, not for a commercial purpose.

Dugong, fish and marine turtles that move between coastal and Commonwealth waters are important components of the First Nations people's culture and diet. First Nations 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 12-9), 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.

The Agreement between the Government of Australia and the Government of the Republic of Indonesia Relating to Cooperation in Fisheries (*1992 Fisheries Cooperation Agreement*) provides the framework for fisheries and marine cooperation between Australia and Indonesia. Cooperation under the Agreement today takes place under the auspices of the Working Group on Marine Affairs and Fisheries. Research reports on reef top species in the MoU Box indicate that stocks in the area are severely depleted. In 2009 the Working Group on Marine Affairs and Fisheries agreed to a Roadmap for MoU Box Cooperative Management (DAWE, 2020a).



**Figure 12-9: MoU 74 Box: operations of Indonesian traditional fishermen in areas of the Australian Fishing Zone and Continental Shelf – 1974**

## 12.4 Tourism and Recreation

Western Australia's tourism sector is important to industry and the economy. In 2022–23, tourism accounted for 6.8% of WA's total jobs and generated a gross total value added of \$11.9 billion (Tourism Western Australia, 2024a).

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, recreational fishing, diving, snorkelling, marine fauna watching, and yachting (Tourism Western Australia, 2024b).

Australia's Coral Coast and North West had a 27% and 22% growth respectively, in intrastate spend compared to 2019. The state's highest intrastate spend on record occurred with WA residents spending \$9.3 billion on trips within the state (Tourism Western Australia, 2024b).

### 12.4.1 Gascoyne Region

Tourism has the fourth largest economic output of all the major industries of the Gascoyne region (GDC, 2023). It contributes significantly to the local economy in terms of both income and employment. In 2022, the region had over 271,100 overnight visitors and tourism had an average economic output of \$182 million between 2021 and 2022 (GDC, 2023).

The COVID-19 pandemic disrupted the tourism industry of the Gascoyne region in previous years, particularly by reducing availability of the overseas workforce. However, the phasing out of restrictions has increased interstate and international travel, and visitor numbers have remained high

with inter-state tourism numbers increasing in 2021 in comparison to 2020 (GDC, 2022). The main attraction of the coastline for tourists is the quality of marine life. The region supports extensive scuba diving, snorkelling and fishing and specialised eco-tourism activities include whale shark and manta ray observation at Ningaloo, and dolphin and dugong viewing in Shark Bay (Newman et al., 2023b). 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). Dark sky tourism flourished in 2023 with an influx of visitors coming together in Exmouth to witness a rare hybrid solar eclipse (GDC, 2023). The natural phenomena brought thousands of visitors both interstate and international to the region in April 2023.

The first Cultural Tourism experience was launched in 2022 on the Ningaloo Coast. Departing from Coral Bay, the Cultural Tour provides visitors the opportunity to experience a unique perspective on the coastline's rich cultural heritage and unique environment. The main marine nature-based tourist activities are concentrated around and within the Ningaloo WHA (GDC, 2022). The Aboriginal AstroTourism Project was launched where First Nations people were consulted on night sky constellations and trained in dark sky tourism. Through this program star gazing experiences were successfully delivered to approximately 665 visitors over 10 nights during the Ningaloo Eclipse (GDC, 2023).

#### 12.4.2 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. Tourism visitation continued to grow in 2022, with the number of visitors to Karajini National Park in 2022 having doubled in comparison to 2020 (PDC, 2022). Multi-year tourism infrastructure development funding has been provided for the Niminjarra Highway to provide easier access to the Karlamilyi National Park and enhance cultural tourism opportunities and to the Whim Creek Hotel to re-establish a tourism destination between Karratha and Hedland (PDC, 2023).

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. Once at sea, charter vessels may also frequent the waters surrounding the Montebello Islands (Williamson et al., 2006).

#### 12.4.3 Kimberley Region

Tourism is one of the main industries in the Kimberley region, alongside resources, construction, agriculture and retail (KDC, 2022).

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 (Newman et al., 2023b).

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 (Newman et al., 2023b).

## 12.5 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 9594 vessel movements in the Port of Dampier, 6,786 vessel movements in the Port of Port Hedland, and 807 vessel movements in the Port of Ashburton in the 2022/23 reporting period (PPA, 2023). 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).

## 12.6 Petroleum Basins

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 (GA, 2023). 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.

## 12.7 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 (DEWHA, 2008).
- The Taylor Barracks are the headquarters of the Pilbara regiment, one of three Regional Force Surveillance Units conducting surveillance and reconnaissance of remote areas of northern Australia. This base is located in Karratha (DoD, n.d.).
- 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 (DEWHA, 2008).
- Areas may be subject to Unexploded Ordnance (UXO) as a result of military activities. These are offshore sites where ammunition and explosives have been dumped, or which have been used as live bombing or firing ranges. Defence maintains a record of sites confirmed as, or reasonably suspected of being affected by UXO. There are several suspected UXO sites in the NWMR (Australian Government Defence, n.d.).

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## **APPENDIX A. PROTECTED MATTER SEARCH REPORTS FOR NWMR, SWMR AND NMR**

The PMST tool conducts searches on a grid-based function. Accordingly, the PMST results can indicate features or species that do not actually intersect or have a presence in the area. To validate search results, comprehensive literature and scientific expertise is used. As such, only species considered relevant to the scope of this document have been described.



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: 06-Jun-2024 [Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#) [Extra Information](#)

[Caveat](#) [Acknowledgements](#)

Figure 1: NWMR PMST subarea 1



# 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](#).

<a href="#">World Heritage Properties:</a>	2
<a href="#">National Heritage Places:</a>	5
<a href="#">Wetlands of International Importance (Ramsar)</a>	2
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	9
<a href="#">Listed Threatened Ecological Communities:</a>	1
<a href="#">Listed Threatened Species:</a>	105
<a href="#">Listed Migratory Species:</a>	97

### 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.

<a href="#">Commonwealth Lands:</a>	65
<a href="#">Commonwealth Heritage Places:</a>	5
<a href="#">Listed Marine Species:</a>	174
<a href="#">Whales and Other Cetaceans:</a>	34
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	29
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	5

### Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	78
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	8
<a href="#">EPBC Act Referrals:</a>	317
<a href="#">Key Ecological Features (Marine):</a>	13
<a href="#">Biologically Important Areas:</a>	92
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

Matters of National Environmental Significance

World Heritage Properties			[ Resource Information ]
Name	State	Legal Status	
<a href="#">Shark Bay, Western Australia</a>	WA	Declared property	
<a href="#">The Ningaloo Coast</a>	WA	Declared property	

National Heritage Places		[ Resource Information ]
Name	State	Legal Status
Historic		
<a href="#">Dirk Hartog Landing Site 1616 - Cape Inscription Area</a>	WA	Listed place
Indigenous		
<a href="#">Dampier Archipelago (including Burrup Peninsula)</a>	WA	Listed place
Natural		
<a href="#">Shark Bay, Western Australia</a>	WA	Listed place
<a href="#">The Ningaloo Coast</a>	WA	Listed place
<a href="#">The West Kimberley</a>	WA	Listed place

Wetlands of International Importance (Ramsar Wetlands)		[ Resource Information ]
Ramsar Site Name	Proximity	
<a href="#">Eighty-mile beach</a>	Within Ramsar site	
<a href="#">Roebuck bay</a>	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)	Commonwealth Marine Areas (EPBC Act)	Commonwealth Marine Areas (EPBC Act)	Commonwealth Marine Areas (EPBC Act)

Feature Name

Commonwealth Marine Areas (EPBC Act) Commonwealth Marine Areas (EPBC Act) Commonwealth Marine Areas (EPBC Act) 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
<a href="#">Monsoon vine thickets on the coastal sand dunes of Dampier Peninsula</a>	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		
<a href="#">Anous tenuirostris melanops</a>		
Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area
<a href="#">Aphelocephala leucopsis</a>		
Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a>		
Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris acuminata</a>		
Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris canutus</a>		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a>		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a>		
Great Knot [862]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Charadrius leschenaultii](#)  
 Greater Sand Plover, Large Sand Plover Vulnerable      Species or species habitat known to occur within area [877]

[Charadrius mongolus](#)  
 Lesser Sand Plover, Mongolian Plover    Endangered      Roosting known to occur within area [879]

[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] Endangered      Species or species habitat may 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

[Limnodromus semipalmatus](#)  
 Asian Dowitcher [843]    Vulnerable      Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Malurus leucopterus edouardi</a> White-winged Fairy-wren (Barrow Island), Barrow Island Black-and-white Fairy-wren [26194]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Malurus leucopterus leucopterus</a> 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
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Papasula abbotti</a> Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
<a href="#">Pezoporus occidentalis</a> Night Parrot [59350]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus fulvus</a> Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Breeding known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]	Vulnerable	Roosting known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Polytelis alexandrae</a> Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
<a href="#">Tyto novaehollandiae kimberli</a> Masked Owl (northern) [26048]	Vulnerable	Species or species habitat likely to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area

<a href="#">Zanda latirostris listed as Calyptorhynchus latirostris</a> Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Species or species habitat likely to occur within area
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FISH

<a href="#">Milyeringa veritas</a> Cape Range Cave Gudgeon, Blind Gudgeon [66676]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Ophisternon candidum</a> Blind Cave Eel [66678]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Thunnus maccoyii</a> Southern Bluefin Tuna [69402] Dependent	Conservation	Breeding known to occur within area
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MAMMAL

<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
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<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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<a href="#">Bettongia lesueur Barrow and Boodie Islands subspecies</a> Boodie, Burrowing Bettong (Barrow and Boodie Islands) [88021]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Bettongia lesueur lesueur</a> Burrowing Bettong (Shark Bay), Boodie [66659]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Bettongia penicillata ogilbyi</a> Woylie [66844]	Endangered	Species or species habitat likely to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat may occur within area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Isoodon auratus auratus</a> Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Isoodon auratus barrowensis</a> Golden Bandicoot (Barrow Island) [66666]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lagorcheses conspicillatus conspicillatus</a> Spectacled Hare-wallaby (Barrow Island) [66661]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lagorcheses hirsutus bernieri</a> Rufous Hare-wallaby (Bernier Island) [66662]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lagorcheses hirsutus Central Australian subspecies</a> Mala, Rufous Hare-Wallaby (Central Australia) [88019]	Endangered	Translocated population known to occur within area
<a href="#">Lagorcheses hirsutus dorreae</a> Rufous Hare-wallaby (Dorre Island) [66663]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lagostrophus fasciatus fasciatus</a> Banded Hare-wallaby, Merrnine, Marnine, Munning [66664]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Leporillus conditor</a> Wopilkara, Greater Stick-nest Rat [137]	Vulnerable	Translocated population known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Macrotis lagotis</a> Greater Bilby [282]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
<a href="#">Osphranter robustus isabellinus</a> Barrow Island Wallaroo, Barrow Island Euro [89262]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Perameles bougainville</a> Shark Bay Bandicoot [278]	Endangered	Species or species habitat known to occur within area
<a href="#">Petrogale concinna monastria</a> Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat known to occur within area
<a href="#">Petrogale lateralis lateralis</a> Black-flanked Rock-wallaby, Moororong, Black-footed Rock Wallaby [66647]	Endangered	Species or species habitat known to occur within area
<a href="#">Phascogale tapoatafa kimberleyensis</a> Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pseudomys fieldi</a> Shark Bay Mouse, Djoongari, Alice Springs Mouse [113]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Rhinonicteris aurantia (Pilbara form)</a> Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Saccolaimus saccolaimus nudicluniatus</a> Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Trichosurus vulpecula arnhemensis](#)

Northern Brushtail Possum [83091] 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

PLANT

[Caladenia barbarella](#)

Small Dragon Orchid, Common Dragon Orchid [68686] Endangered      Species or species habitat may occur within area

[Caladenia hoffmanii](#)

Hoffman's Spider-orchid [56719] Endangered      Species or species habitat likely to occur within area

[Eucalyptus beardiana](#)

Beard's Mallee [18933] Vulnerable      Species or species habitat likely to occur within area

[Minuria tridens](#)

Minnie Daisy [13753] Vulnerable      Species or species habitat known to occur within area

REPTILE

[Aipysurus apraefrontalis](#)

Short-nosed Sea Snake, Short-nosed Seasnake [1115] Critically Endangered      Species or species habitat known to occur within area

[Aipysurus foliosquama](#)

Leaf-scaled Sea Snake, 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 zastictus](#)

Hamelin Ctenotus [25570] Vulnerable      Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Dermochelys coriacea](#)  
 Leatherback Turtle, Leathery Turtle, Luth [1768]

Endangered  
 within area

Foraging, feeding or related behaviour known to occur

[Egernia stokesii badia](#)  
 Western Spiny-tailed Skink, Baudin Island Spiny-tailed Skink [64483]

Endangered

Species or species habitat 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

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](#)  
 Pilbara Olive Python [66699]

Vulnerable

Species or species habitat known to occur within area

[Natator depressus](#)  
 Flatback Turtle [59257]

Vulnerable

Breeding known to occur within area

[Tiliqua scincoides intermedia](#)  
 Northern Blue-tongued Skink [89838]

Critically Endangered

Species or species habitat known to occur within area

[Varanus mertensi](#)  
 Mertens' Water Monitor, Mertens's Water Monitor [1568]

Endangered

Species or species habitat known to occur within area

[Varanus mitchelli](#)  
 Mitchell's Water Monitor [1569]

Critically Endangered

Species or species habitat likely to occur within area

SHARK

[Carcharias taurus \(west coast population\)](#)  
 Grey Nurse Shark (west coast population) [68752]

Vulnerable

Congregation or aggregation known to occur within area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Carcharodon carcharias</a>		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Centrophorus uyato</a>		
Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area

<a href="#">Glyphis garricki</a>		
Northern River Shark, New Guinea River Shark [82454]	Endangered	Breeding likely to occur within area

<a href="#">Pristis clavata</a>		
Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area

<a href="#">Pristis pristis</a>		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area

<a href="#">Pristis zijsron</a>		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area

<a href="#">Rhincodon typus</a>		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

<a href="#">Sphyrna lewini</a>		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

<b>SPIDER</b>		
<a href="#">Idiosoma nigrum</a>		
Shield-backed Trapdoor Spider, Black Rugose Trapdoor Spider [66798]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species

[ Resource Information ]

Scientific Name	Threatened Category	Presence Text
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<b>Migratory Marine Birds</b>	<a href="#">Anous stolidus</a>	
Common Noddy [825]		Species or species habitat likely to occur within area

<a href="#">Apus pacificus</a>		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Ardenna pacifica</a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]		Breeding known to occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Breeding known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]		Breeding known to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding known to occur within area
<a href="#">Sternula albifrons</a> Little Tern [82849]		Breeding known to occur within area
<a href="#">Sula dactylatra</a> Masked Booby [1021]		Breeding known to occur within area
<a href="#">Sula leucogaster</a> Brown Booby [1022]		Breeding known to occur within area
<a href="#">Sula sula</a> Red-footed Booby [1023]		Breeding known to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
<a href="#">Anoxypristis cuspidata</a> Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera bonaerensis</a> Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Dugong dugon</a> Dugong [28]		Breeding known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Eubalaena australis as Balaena glacialis australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
<a href="#">Isurus paucus</a> Longfin Mako [82947]		Species or species habitat likely to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Congregation or aggregation known to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Breeding known to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Breeding known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Sousa sahalensis as Sousa chinensis</a> Australian Humpback Dolphin [87942]		Breeding known to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Terrestrial Species		
<a href="#">Cecropis daurica</a> Red-rumped Swallow [80610]		Species or species habitat may occur within area
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat known to occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat known to occur within area
Migratory Wetlands Species		
<a href="#">Acrocephalus orientalis</a> Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area
<a href="#">Calidris pugnax as Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Roosting known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]	Vulnerable	Roosting known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Roosting known to occur within area
<a href="#">Thalasseus bergii</a> Greater Crested Tern [83000]	Endangered	Breeding known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]	Vulnerable	Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Roosting known to occur within area

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 - LEARMONTH - RAAF BASE [50106]	WA
Defence - LEARMONTH - RAAF BASE [50109]	WA
Defence - LEARMONTH - RAAF BASE [50108]	WA
Defence - LEARMONTH - RAAF BASE [50101]	WA
Defence - LEARMONTH - RAAF BASE [50107]	WA
Defence - LEARMONTH - RAAF BASE [50097]	WA
Defence - LEARMONTH - RAAF BASE [50103]	WA
Defence - LEARMONTH - RAAF BASE [50100]	WA
Defence - LEARMONTH RADAR SITE - VLAMING HEAD EXMOUTH	WA [50001]
Defence - YAMPI SOUND TRAINING AREA [50145]	WA
Unknown	Commonwealth Land - [51698]
Commonwealth Land - [51699]	WA
Commonwealth Land - [51707]	WA
Commonwealth Land - [51704]	WA
Commonwealth Land - [51696]	WA
Commonwealth Land - [51705]	WA
Commonwealth Land - [51709]	WA
Commonwealth Land - [51700]	WA
Commonwealth Land - [51706]	WA



Commonwealth Land Name		State
Commonwealth Land - [52116]	WA	
Commonwealth Land - [51695]	WA	
Commonwealth Land - [51671]	WA	
Commonwealth Land - [52104]	WA	
Commonwealth Land - [51672]	WA	
Commonwealth Land - [51670]	WA	
Commonwealth Land - [51055]	WA	
Commonwealth Land - [51054]	WA	
Commonwealth Land - [51702]	WA	
Commonwealth Land - [51053]	WA	
Commonwealth Land - [51708]	WA	
Commonwealth Land - [51703]	WA	
Commonwealth Land - [52198]	WA	
Commonwealth Land - [51716]	WA	
Commonwealth Land - [52236]	WA	
Commonwealth Land - [52099]	WA	
Commonwealth Land - [52097]	WA	
Commonwealth Land - [51719]	WA	
Commonwealth Land - [52100]	WA	
Commonwealth Land - [52195]	WA	
Commonwealth Land - [52109]	WA	
Commonwealth Land - [52098]	WA	
Commonwealth Land - [51710]	WA	
Commonwealth Land - [51714]	WA	
Commonwealth Land - [51715]	WA	
Commonwealth Land - [52106]	WA	
Commonwealth Land - [52107]	WA	





Scientific Name	Threatened Category	Presence Text
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[Acrocephalus orientalis](#)

Oriental Reed-Warbler [59570]      Species or species habitat may 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

[Ardenna carneipes as Puffinus carneipes](#)

Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]      Foraging, feeding or related behaviour likely to occur within area

[Ardenna pacifica as Puffinus pacificus](#)

Wedge-tailed Shearwater [84292]    Breeding known to occur within area

[Arenaria interpres](#)

Ruddy Turnstone [872]    Vulnerable      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]    Vulnerable      Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris pugnax as Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area overfly marine area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area overfly marine area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Cecropis daurica as Hirundo daurica</a> Red-rumped Swallow [80610]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
<a href="#">Chalcites osculans as Chrysococcyx osculans</a>		
Black-eared Cuckoo [83425]	Species or species habitat known to occur within area	overfly marine area
<a href="#">Charadrius leschenaultii</a>		
Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a>		
Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius ruficapillus</a>		
Red-capped Plover [881]		Roosting known to occur within area
<a href="#">Charadrius veredus</a>		
Oriental Plover, Oriental Dotterel [882]		Roosting known to occur within area
<a href="#">Chroicocephalus novaehollandiae as Larus novaehollandiae</a>		
Silver Gull [82326]		Breeding known to occur within area
<a href="#">Diomedea amsterdamensis</a>		
Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea exulans</a>		
Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
<a href="#">Fregata ariel</a>		
Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
<a href="#">Fregata minor</a>		
Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
<a href="#">Gallinago megala</a>		
Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a>		
Pin-tailed Snipe [841]		Roosting likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Glareola maldivarum](#)

Oriental Pratincole [840]    Roosting known to occur within area overfly marine area

[Haliaeetus leucogaster](#)

White-bellied Sea-Eagle [943]    Species or species habitat known to 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]    Vulnerable    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]    Endangered    Roosting known to occur within area overfly marine area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant    Endangered    Species or species habitat may occur within area  
Petrel [1060]

Scientific Name	Threatened Category	Presence Text
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[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 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]    Roosting 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

[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]    Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Phaethon lepturus fulvus](#)

Christmas Island White-tailed Tropicbird, Endangered      Species or species habitat may occur within area  
Golden Bosunbird [26021]

[Phaethon rubricauda](#)

Red-tailed Tropicbird [994]      Breeding known to occur within area

[Pluvialis fulva](#)

Pacific Golden Plover [25545] Roosting known to occur within area

[Pluvialis squatarola](#)

Grey Plover [865]      Vulnerable      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 likely to occur within area

[Puffinus assimilis](#)

Little Shearwater [59363] 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

Scientific Name	Threatened Category	Presence Text
<a href="#">Sternula albifrons as Sterna albifrons</a> Little Tern [82849]		Breeding known to occur within area
<a href="#">Sternula nereis as Sterna nereis</a> Fairy Tern [82949]	Breeding known to occur within area	
<a href="#">Stiltia isabella</a> Australian Pratincole [818]	Roosting known to occur within area	overfly marine area
<a href="#">Sula dactylatra</a> Masked Booby [1021]	Breeding known to occur within area	
<a href="#">Sula leucogaster</a> Brown Booby [1022]	Breeding known to occur within area	
<a href="#">Sula sula</a> Red-footed Booby [1023]	Breeding known to occur within area	
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalasseus bengalensis as Sterna bengalensis</a> Lesser Crested Tern [66546]	Breeding known to occur within area	
<a href="#">Thalasseus bergii as Sterna bergii</a> Greater Crested Tern [83000]	Breeding known to occur within area	



Scientific Name	Threatened Category	Presence Text
<a href="#">Tringa brevipes</a> as <a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]	Species or species habitat known to occur within area overfly marine area	
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered Species or species habitat known to occur within area overfly marine area	
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]	Roosting known to occur within area overfly marine area	
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]	Vulnerable Roosting known to occur within area overfly marine area	
<b>Fish</b> <a href="#">Acentronura australe</a> Southern Pygmy Pipehorse [66185]	Species or species habitat may occur within area	
<a href="#">Acentronura larsonae</a> Helen's Pygmy Pipehorse [66186]	Species or species habitat may occur within area	
<a href="#">Bhanotia fasciolata</a> Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area
<a href="#">Bulbonaricus brauni</a> Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
<a href="#">Campichthys galei</a> Gale's Pipefish [66191]	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
<a href="#">Campichthys tricarinatus</a> Three-keel Pipefish [66192]		Species or species habitat may occur within area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
<a href="#">Choeroichthys latispinosus</a> Muiron Island Pipefish [66196]	Species or species habitat may occur within area	
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]	Species or species habitat may occur within area	
<a href="#">Corythoichthys amplexus</a> Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
<a href="#">Corythoichthys           flavofasciatus</a> Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
<a href="#">Corythoichthys intestinalis</a> Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
<a href="#">Corythoichthys schultzi</a> Schultz's Pipefish [66205]	Species or species habitat may occur within area	
<a href="#">Cosmocampus banneri</a> Roughridge Pipefish [66206]	Species or species habitat may occur within area	
<a href="#">Doryrhamphus       dactyliophorus</a> Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
<a href="#">Doryrhamphus excisus</a> Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Doryrhamphus janssi</a> Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
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<a href="#">Doryrhamphus multiannulatus</a> Many-banded Pipefish [66717]	Species or species habitat may occur within area	
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<a href="#">Doryrhamphus negrosensis</a> Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
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<a href="#">Festucalex scalaris</a> Ladder Pipefish [66216]	Species or species habitat may occur within area	
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<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]	Species or species habitat may occur within area	
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<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]	Species or species habitat may occur within area	
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<a href="#">Halicampus dunckeri</a> Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
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<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]	Species or species habitat may occur within area	
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<a href="#">Halicampus nitidus</a> Glittering Pipefish [66224]	Species or species habitat may occur within area	
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<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]	Species or species habitat may occur within area	
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<a href="#">Haliichthys taeniophorus</a> Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus breviceps</a> Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]	Species or species habitat may occur within area	
<a href="#">Hippocampus spinosissimus</a> Hedgehog Seahorse [66239]	Species or species habitat may occur within area	
<a href="#">Hippocampus subelongatus</a> West Australian Seahorse [66722]	Species or species habitat may occur within area	
<a href="#">Hippocampus trimaculatus</a> Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
<a href="#">Lissocampus fatiloquus</a> Prophet's Pipefish [66250]	Species or species habitat may occur within area	
<a href="#">Maroubra perserrata</a> Sawtooth Pipefish [66252]	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
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[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

[Stigmatopora argus](#)

Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]      Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Stigmatopora nigra</a> Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
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<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
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<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
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<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
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<a href="#">Urocampus carinirostris</a> Hairy Pipefish [66282]	Species or species habitat may occur within area
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<a href="#">Vanacampus margaritifer</a> Mother-of-pearl Pipefish [66283]	Species or species habitat may occur within area
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<b>Mammal</b> <a href="#">Dugong dugon</a> Dugong [28]	Breeding known to occur within area
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<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
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<b>Reptile</b> <a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
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<a href="#">Aipysurus duboisii</a> Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
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<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Aipysurus fuscus</a> Dusky Sea Snake [1119]		Species or species habitat known to occur within area
<a href="#">Aipysurus laevis</a> Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
<a href="#">Aipysurus mosaicus as Aipysurus eydouxii</a> Mosaic Sea Snake [87261]	Species or species habitat may occur within area	
<a href="#">Aipysurus pooleorum</a> Shark Bay Sea Snake [66061]	Species or species habitat may occur within area	
<a href="#">Aipysurus tenuis</a> Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Crocodylus johnstoni</a> Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Emydocephalus annulatus</a> Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Ephalophis greyae</a> as <a href="#">Ephalophis greyi</a> Mangrove Sea Snake [93738]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Hydrelaps darwiniensis</a> Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
<a href="#">Hydrophis coggeri</a> Cogger's Sea Snake [25925]		Species or species habitat may occur within area
<a href="#">Hydrophis czeblukovi</a> Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis hardwickii</a> as <a href="#">Lapemis hardwickii</a> Spine-bellied Sea Snake [93516]		Species or species habitat may occur within area
<a href="#">Hydrophis kingii</a> as <a href="#">Disteira kingii</a> Spectacled Sea Snake [93511]		Species or species habitat may occur within area
<a href="#">Hydrophis macdowelli</a> as <a href="#">Hydrophis mcdowelli</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
<a href="#">Hydrophis major</a> as <a href="#">Disteira major</a> Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
<a href="#">Hydrophis ornatus</a> Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Hydrophis peronii as Acalyptophis peronii</a> Horned Sea Snake [93509]		Species or species habitat may occur within area
<a href="#">Hydrophis platura as Pelamis platurus</a> Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
<a href="#">Hydrophis stokesii as Astrotia stokesii</a> Stokes' Sea Snake [93510]		Species or species habitat may occur within area
<a href="#">Hydrophis zweiffei as Enhydrina schistosa</a> Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Congregation or aggregation known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Whales and Other Cetaceans		[ <a href="#">Resource Information</a> ]
Current Scientific Name	Status	Type of Presence
Mammal		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area
<a href="#">Balaenoptera bonaerensis</a> Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Globicephala melas</a> Long-finned Pilot Whale [59282]		Species or species habitat may occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Indopacetus pacificus</a> Longman's Beaked Whale [72]		Species or species habitat may occur within area
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]		Species or species habitat may occur within area
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Lagenodelphis hosei</a> Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Breeding known to occur within area	
<a href="#">Mesoplodon densirostris</a> Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
<a href="#">Mesoplodon ginkgodens</a> Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
<a href="#">Mesoplodon grayi</a> Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Breeding known to occur within area	
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]		Species or species habitat likely to occur within area
<a href="#">Sousa sahulensis</a> Australian Humpback Dolphin [87942]	Breeding known to occur within area	
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]	Species or species habitat may occur within area	
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]	Species or species habitat may occur within area	
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]	Species or species habitat may occur within area	
<a href="#">Ziphius cavirostris</a> 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)	
Dampier	Habitat Protection Zone (IUCN IV)	
Gascoyne	Habitat Protection Zone (IUCN IV)	
Gascoyne	Habitat Protection Zone (IUCN IV)	
Kimberley	Habitat Protection Zone (IUCN IV)	

Park Name		Zone & IUCN Categories	
Kimberley IV)		Habitat Protection Zone (IUCN	
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)		
Kimberley	Multiple Use Zone (IUCN VI)		
Montebello	Multiple Use Zone (IUCN VI)		
Roebuck	Multiple Use Zone (IUCN VI)		
Shark Bay	Multiple Use Zone (IUCN VI)		
Abrolhos	National Park Zone (IUCN II)		
Argo-Rowley Terrace	National Park Zone (IUCN II)		
Dampier	National Park Zone (IUCN II)		
Gascoyne	National Park Zone (IUCN II)		
Kimberley	National Park Zone (IUCN II)		
Mermaid Reef	National Park Zone (IUCN II)		
Ningaloo	National Park Zone (IUCN II)		
Ningaloo	Recreational Use Zone (IUCN IV)		
Ningaloo	Recreational Use Zone (IUCN IV)		
Abrolhos	Special Purpose Zone (IUCN VI)		
Argo-Rowley Terrace	Special Purpose Zone (Trawl) (IUCN VI)		
Habitat Critical to the Survival of Marine Turtles		[ Resource Information ]	
Scientific Name		Behaviour	Presence
Aug - Sep			

Scientific Name	Behaviour	Presence
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Nesting	Known to occur
May - Jul		
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle [1767]	Nesting	Known to occur
Nov-Feb		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Nesting	Known to occur
Nov - May		
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Nesting	Known to occur

Extra Information

State and Territory Reserves		[ Resource Information ]
Protected Area Name	Reserve Type	State
Adele Island	Nature Reserve	WA
Airlie Island	Nature Reserve	WA
Bardi Jawi	Indigenous Protected Area	WA
Barrow Island	Nature Reserve	WA
Barrow Island	Marine Management Area	WA
Barrow Island	Marine Park	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
Bundegi Coastal Park	5(1)(h) Reserve	WA
Cape Range (South)	National Park	WA

Protected Area Name	Reserve Type	State
Coulomb Point	Nature Reserve	WA
Dambimangari	Indigenous Protected Area	WA
Dirk Hartog Island	National Park	WA
Eighty Mile Beach	Marine Park	WA
Faure Island	Private Nature Reserve	WA
Francois Peron	National Park	WA
Freycinet, Double Islands etc	Nature Reserve	WA
Gnandaroo Island	Nature Reserve	WA
Great Sandy Island	Nature Reserve	WA
Hamelin Pool	Marine Nature Reserve	WA
Jarrkunpungu	Nature Reserve	WA
Jurabi Coastal Park	5(1)(h) Reserve	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
Little Rocky Island	Nature Reserve	WA
Locker Island	Nature Reserve	WA
Lowendal Islands	Nature Reserve	WA
Miaboolya Beach	Fish Habitat Protection Area	WA
Montebello Islands	Conservation Park	WA
Montebello Islands	Marine Park	WA
Montebello Islands	Conservation Park	WA
Muiron Islands	Nature Reserve	WA

Protected Area Name	Reserve Type	State
Muiron Islands	Marine Management Area	WA
Nanga Station	NRS Addition - Gazettal in Progress	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
Nyangumarta Warrarn	Indigenous Protected Area	WA
Nyingguulu (Ningaloo) Coastal Reserve	5(1)(h) Reserve	WA
Rocky Island	Nature Reserve	WA
Round Island	Nature Reserve	WA
Rowley Shoals	Marine Park	WA
Scott Reef	Nature Reserve	WA
Sedimentary Deposits Reserve	5(1)(g) Reserve	WA
Serrurier Island	Nature Reserve	WA
Shark Bay	Marine Park	WA
Swan Island	Nature Reserve	WA
Tanner Island	Nature Reserve	WA
Tent Island	Nature Reserve	WA
Thevenard Island	Nature Reserve	WA
Unnamed WA28968	5(1)(h) Reserve	WA
Unnamed WA36909	5(1)(h) Reserve	WA
Unnamed WA36913	Nature Reserve	WA
Unnamed WA36915	Nature Reserve	WA
Unnamed WA37168	5(1)(h) Reserve	WA



Protected Area Name		Reserve Type	State
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 WA44665	5(1)(h) Reserve	WA	
Unnamed WA44667	5(1)(h) Reserve	WA	
Unnamed WA44669	5(1)(h) Reserve	WA	
Unnamed WA44672	5(1)(h) Reserve	WA	
Unnamed WA44673	5(1)(h) Reserve	WA	
Victor Island	Nature Reserve	WA	
Whalebone Island	Nature Reserve	WA	
Yawuru	Indigenous Protected	WA Area	
Yawuru Nagulagun / Roebuck Bay	Marine Park	WA Y Island	Nature Reserve
			WA

Nationally Important Wetlands		<a href="#">[ Resource Information ]</a>	
Wetland Name		State	
<a href="#">Cape Range Subterranean Waterways</a>	WA		
<a href="#">Eighty Mile Beach System</a>	WA		
<a href="#">Exmouth Gulf East</a>	WA		
<a href="#">Hamelin Pool</a>	WA		
<a href="#">Leslie (Port Hedland) Saltfields System</a>	WA		
<a href="#">Mermaid Reef</a>	EXT		
<a href="#">Shark Bay East</a>	WA		
<a href="#">Yampi Sound Training Area</a>	WA		

EPBC Act Referrals			[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Browse to North West Shelf Development, Indian Ocean, WA</a>	2018/8319		Approval
<a href="#">Cockatoo Island Multi-User Supply Base, WA</a>	2017/7986		Assessment
<a href="#">Gorgon Gas Development</a>	2003/1294		Post-Approval
<a href="#">Koolan Island Operations</a>	2022/09392		Assessment
<a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West</a>	2024/09826		Referral Decision
<a href="#">Midwest Offshore Wind Farm</a>	2022/09264		Assessment
<a href="#">Ningaloo Lighthouse Development, 17km north west Exmouth, Western Australia</a>	2020/8693		Post-Approval
<a href="#">North West Shelf Project Extension, Carnarvon Basin, WA</a>	2018/8335		Approval
<a href="#">Ocean Barramundi Expansion Project</a>	2022/09272		Assessment
<a href="#">Optimised Mardie Solar Salt Project</a>	2022/9169		Approval
<a href="#">Project Highclere Cable Lay and Operation</a>	2022/09203		Completed
<a href="#">Ridley Magnetite Project</a>	2023/09477		Referral Decision
Action clearly unacceptable			
<a href="#">Asian Renewable Energy Hub Revised Proposal, WA</a>	2021/8891	Action Clearly Unacceptable	Completed
<a href="#">Highlands 3D Marine Seismic Survey</a>	2012/6680	Action Clearly Unacceptable	Completed
Controlled action			
<a href="#">'Van Gogh' Petroleum Field Development</a>	2007/3213	Controlled Action	Post-Approval
<a href="#">2-D seismic survey Scott Reef</a>	2000/125	Controlled Action	Post-Approval
<a href="#">Anketell Point Iron Ore Processing &amp; Export Port</a>	2009/5120	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
<a href="#">Balmoral South Iron Ore Mine</a>	2008/4236	Controlled Action	Post-Approval
<a href="#">Binowee Iron Ore Project</a>	2001/366	Controlled Action	Proposed Decision
<a href="#">Browse FLNG Development, Commonwealth Waters</a>	2013/7079	Controlled Action	Post-Approval
<a href="#">Cape Lambert Port B Development</a>	2008/4032	Controlled Action	Post-Approval
<a href="#">Conduct an exploration drilling campaign</a>	2010/5718	Controlled Action	Completed
<a href="#">Construct and operate LNG &amp; domestic gas plant including onshore and offshore facilities - Wheatston</a>	2008/4469	Controlled Action	Post-Approval
<a href="#">Construction and operation of a Solar Salt Project, SW Onslow, WA</a>	2016/7793 Approach	Controlled Action	Assessment
<a href="#">Develop Ichthys gas-condensate field permit area W</a>	2006/2767	Controlled Action	Completed
<a href="#">Develop Jansz-lo deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-</a>	2005/2184	Controlled Action	Post-Approval
<a href="#">Development of Angel gas and condensate field, North West Shelf</a>	2004/1805	Controlled Action	Post-Approval
<a href="#">Development of an iron ore mine and associated infrastructure</a>	2010/5630 Approach	Controlled Action	Assessment
<a href="#">Development of Browse Basin Gas Fields (Upstream)</a>	2008/4111	Controlled Action	Completed
<a href="#">Development of Coniston/Novara fields within the Exmouth Sub-basin</a>	2011/5995	Controlled Action	Post-Approval
<a href="#">Development of Stybarrow petroleum field incl drilling and facility installation</a>	2004/1469	Controlled Action	Post-Approval
<a href="#">Echo-Yodel Production Wells</a>	2000/11	Controlled Action	Post-Approval
<a href="#">Enfield full field development</a>	2001/257	Controlled Action	Post-Approval
<a href="#">Equus Gas Fields Development Project, Carnarvon Basin</a>	2012/6301	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
<a href="#">Eramurra Industrial Salt Project Approach</a>	2021/9027	Controlled Action	Assessment
<a href="#">Eramurra Industrial Salt Project, near Karratha, WA</a>	2019/8448	Controlled Action	Completed
<a href="#">Gorgon Gas Development 4th Train Proposal</a>	2011/5942	Controlled Action	Post-Approval
<a href="#">Gorgon Gas Revised Development</a>	2008/4178	Controlled Action	Post-Approval
<a href="#">Greater Enfield (Vincent) Development</a>	2005/2110	Controlled Action	Post-Approval
<a href="#">Greater Gorgon Development - Optical Fibre Cable, Mainland to Barrow Island</a>	2005/2141	Controlled Action	Completed
<a href="#">Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline</a>	2008/4208	Controlled Action	Post-Approval
<a href="#">Iron ore mine</a>	2006/2522	Controlled Action	Post-Approval
<a href="#">Light Crude Oil Production</a>	2001/365	Controlled Action	Post-Approval
<a href="#">Mardie Project, 80 km south west of Karratha, WA</a>	2018/8236	Controlled Action	Post-Approval
<a href="#">Mauds Landing Marina</a>	2000/98	Controlled Action	Completed
<a href="#">Nava-1 Cable System</a>	2001/510	Controlled Action	Completed
<a href="#">Pluto Gas Project</a>	2005/2258	Controlled Action	Completed
<a href="#">Pluto Gas Project Including Site B</a>	2006/2968	Controlled Action	Post-Approval
<a href="#">Pluton Irvine Island Iron Ore Project</a>	2011/6064	Controlled Action	Proposed Decision
<a href="#">Port Hedland Outer Harbour Development and associated marine and terrestrial in</a>	2008/4159	Controlled Action	Post-Approval
<a href="#">Port Hedland Spoilbank Marina, WA</a>	2019/8520	Controlled Action	Post-Approval
<a href="#">Proposed West Pilbara Iron Ore Project</a>	2009/4706	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
<a href="#">Pyrenees Oil Fields Development</a>	2005/2034	Controlled Action	Post-Approval
<a href="#">Shark Bay Resources Dredging</a>	2020/8717	Controlled Action	Post-Approval
<a href="#">Shark Bay Salt Facilities upgrade for direct ocean disposal of bitterns discharge</a>	2011/5984	Controlled Action	Completed
<a href="#">Simpson Development</a>	2000/59	Controlled Action	Completed
<a href="#">Simpson Oil Field Development</a>	2001/227	Controlled Action	Post-Approval
<a href="#">The Scarborough Project - FLNG &amp; assoc subsea infrastructure, Carnarvon Basin</a>	2013/6811	Controlled Action	Post-Approval
<a href="#">Torosa South Initial Appraisal Drilling</a>	2007/3500	Controlled Action	Completed
<a href="#">Vincent Appraisal Well</a>	2000/22	Controlled Action	Post-Approval
<a href="#">Yannarie Solar Salt Project</a>	2004/1679	Controlled Action	Completed
<a href="#">Yardie Creek Road Realignment Project</a>	2021/8967 Approach	Controlled Action	Assessment
Not controlled action			
<a href="#">'Goodwyn A' Low Pressure Train Project</a>	2003/914	Not Controlled Action	Completed
<a href="#">'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)</a>	2006/3148 Action	Not Controlled	Completed
<a href="#">3D marine seismic survey in WA 314P and WA 315P</a>	2004/1927 Action	Not Controlled	Completed
<a href="#">Adele Trend TQ3D Seismic Survey Action</a>	2001/252	Not Controlled	Completed
<a href="#">Airlie Island soil and groundwater investigations, Exmouth Gulf, offshore Pilbara coast</a>	2014/7250 Action	Not Controlled	Completed
<a href="#">APX-West Fibre-optic telecommunications cable system, WA to Singapore</a>	2013/7102 Action	Not Controlled	Completed
<a href="#">Aquaculture - Barramundi grow out, Yampi Sound</a>	2005/2476 Action	Not Controlled	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">archaeological surveys &amp; excavation at historic sites, Cape Inscription</a>	2006/3027 Action	Not Controlled	Completed
<a href="#">Baniyas-1 Exploration Well, EP-424, near Onslow</a>	2007/3282 Action	Not Controlled	Completed
<a href="#">Barrow Island 2D Seismic survey</a> Action	2006/2667	Not Controlled	Completed
<a href="#">Bollinger 2D Seismic Survey 200km North of North West Cape WA</a>	2004/1868 Action	Not Controlled	Completed
<a href="#">Bultaco-2, Laverda-2, Laverda-3 and Montesa-2 Appraisal Wells</a>	2000/103 Action	Not Controlled	Completed
<a href="#">Cape Lambert Port A Marine Structures Refurbishment Project</a>	2018/8370 Action	Not Controlled	Completed
<a href="#">Carnarvon 3D Marine Seismic Survey</a> Controlled Action	2004/1890	Not	Completed
<a href="#">Cazadores 2D seismic survey</a> Action	2004/1720	Not Controlled	Completed
<a href="#">Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for</a>	2004/1703 Action	Not Controlled	Completed
<a href="#">Construction of a Commodities Berth, Wharf and Associated Infrastructure</a>	2008/4129 Action	Not Controlled	Completed
<a href="#">Controlled Source Electromagnetic Survey</a>	2007/3262 Action	Not Controlled	Completed
<a href="#">Development of Halyard Field off the west coast of WA</a>	2010/5611 Action	Not Controlled	Completed
<a href="#">Development of iron ore facilities</a> Action	2013/7013	Not Controlled	Completed
<a href="#">Development of Mutineer and Exeter petroleum fields for oil production, Permit</a>	2003/1033 Action	Not Controlled	Completed
<a href="#">Drilling between Kalbarri and Cliff Head</a>	2005/2185 Action	Not Controlled	Completed
<a href="#">Drilling of an exploration well Gats-1 in Permit Area WA-261-P</a>	2004/1701 Action	Not Controlled	Completed
<a href="#">Drilling of exploration wells, Permit areas WA-301-P to WA-305-P</a>	2002/769 Action	Not Controlled	Completed



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Eagle-1 Exploration Drilling, North West Shelf, WA</a>	2019/8578 Action	Not Controlled	Completed
<a href="#">Echo A Development WA-23-L, WA-24-L</a>	2005/2042 Action	Not Controlled	Completed
<a href="#">Expansion of Monkey Mia Resort</a> Action	2003/1146	Not Controlled	Completed
<a href="#">Expansion of the Sino Iron Ore Mine and export facilities, Cape Preston, WA</a>	2017/7862 Action	Not Controlled	Completed
<a href="#">Expansion Proposal, Mineralogy Cape Preston Iron Ore Project, Cape Preston, WA</a>	2009/5010 Action	Not Controlled	Completed
<a href="#">Exploration drilling well WA-155-P(1)</a> Action	2003/971	Not Controlled	Completed
<a href="#">Exploration of appraisal wells</a> Action	2006/3065	Not Controlled	Completed
<a href="#">Exploration Well (Taunton-2)</a> Action	2002/731	Not Controlled	Completed
<a href="#">Exploration Well in Permit Area WA-155-P(1)</a>	2002/759 Action	Not Controlled	Completed
<a href="#">Exploratory drilling in permit area WA-225-P</a>	2001/490 Action	Not Controlled	Completed
<a href="#">Extension of Simpson Oil Platforms &amp; Wells</a>	2002/685 Action	Not Controlled	Completed
<a href="#">Extention to the existing Blind Strait Black Lip Pearl Oyster Farm</a>	2004/1342 Action	Not Controlled	Completed
<a href="#">Gulf Fishing Lodge</a>	2010/5499	Not Controlled Action	Completed
<a href="#">Hadda 1,Flying Foam 1,Magnat 1 exploration drill</a>	2004/1697 Action	Not Controlled	Completed
<a href="#">HCA05X Macedon Experimental Survey</a>	2004/1926 Action	Not Controlled	Completed
<a href="#">Hess Exploration Drilling Programme</a> Controlled Action	2007/3566	Not	Completed
<a href="#">Huascaran-1 exploration well (WA-292-P)</a>	2001/539 Action	Not Controlled	Completed

<a href="#"><u>Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</u></a>	2015/7522 Action	Not Controlled	Completed
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Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">INDIGO West Submarine Telecommunications Cable, WA</a>	2017/8126 Action	Not Controlled	Completed
<a href="#">Infill Production Well (Griffin-9) Action</a>	2001/417	Not Controlled	Completed
<a href="#">Jansz-2 and 3 Appraisal Wells Action</a>	2002/754	Not Controlled	Completed
<a href="#">Klammer 2D Seismic Survey Action</a>	2002/868	Not Controlled	Completed
<a href="#">Koolan Island Mine - Reconstruction of seawall and capital dewatering of mine pit,130km northwest of</a>	2016/7848 Action	Not Controlled	Completed
<a href="#">Maia-Gaea Exploration wells Action</a>	2000/17	Not Controlled	Completed
<a href="#">Manaslu - 1 and Huascaran - 1 Offshore Exploration Wells</a>	2001/235 Action	Not Controlled	Completed
<a href="#">Marine Seismic Survey in WA-239-P Action</a>	2000/24	Not Controlled	Completed
<a href="#">Mermaid Marine Australia Desalination Project</a>	2011/5916 Action	Not Controlled	Completed
<a href="#">Montesa-1 and Bultaco-1 Exploration Wells</a>	2000/102 Action	Not Controlled	Completed
<a href="#">Murujuga archaeological excavation, collection and sampling, Dampier Archipelago, WA</a>	2014/7160 Action	Not Controlled	Completed
<a href="#">North Rankin B gas compression facility</a>	2005/2500 Action	Not Controlled	Completed
<a href="#">Pipeline System Modifications Project Action</a>	2000/3	Not Controlled	Completed
<a href="#">Port Hedland Channel Risk and Optimisation Project, WA</a>	2017/7915 Action	Not Controlled	Completed
<a href="#">Project Highclere Geophysical Survey</a> Controlled Action	2021/9023	Not	Completed
<a href="#">Rail and Port Facilities</a>	2001/474	Not Controlled	Action Completed
<a href="#">Searipple gas and condensate field development</a>	2000/89 Action	Not Controlled	Completed
<a href="#">Spool Base Facility</a>	2001/263	Not Controlled	Action Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline</a>	2005/2033 Action	Not Controlled	Completed
<a href="#">sub-sea tieback of Perseus field wells</a> Controlled Action	2004/1326	Not	Completed
<a href="#">Telfer Gold Mine Project - Mine and Borefield Extensions and Upgrade of Storage</a>	2002/787 Action	Not Controlled	Completed
<a href="#">Telstra North Rankin Spur Fibre Optic Cable</a>	2016/7836 Action	Not Controlled	Completed
<a href="#">Thevenard Island Retirement Project</a> Controlled Action	2015/7423	Not	Completed
<a href="#">To construct and operate an offshore submarine fibre optic cable, WA</a>	2014/7373 Action	Not Controlled	Completed
<a href="#">WA-295-P Kerr-McGee Exploration Wells</a>	2001/152 Action	Not Controlled	Completed
<a href="#">Walkway Lighting Upgrade</a> Action	2009/4965	Not Controlled	Completed
<a href="#">Wanda Offshore Research Project, 80 km north-east of Exmouth, WA</a>	2018/8293 Action	Not Controlled	Completed
<a href="#">Western Flank Gas Development</a> Action	2005/2464	Not Controlled	Completed
<a href="#">Wheatstone 3D seismic survey, 70km north of Barrow Island</a>	2004/1761 Action	Not Controlled	Completed
Not controlled action (particular manner)			
<a href="#">'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km</a>	2005/2037 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">'Tourmaline' 2D marine seismic survey, permit areas WA-323-P, WA-330-P and WA-32</a>	2005/2282 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">"Leanne" offshore 3D seismic exploration, WA-356-P</a>	2005/1938 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">2D and 3D seismic surveys</a> Action (Particular Manner)	2005/2151	Not Controlled	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">2D marine seismic survey</a> Action (Particular Manner)	2012/6296	Not Controlled	Post-Approval
<a href="#">2D seismic survey</a> Manner)	2008/4493	Not Controlled Action (Particular	Post-Approval
<a href="#">2D Seismic Survey</a> Manner)	2005/2146	Not Controlled Action (Particular	Post-Approval
<a href="#">2D seismic survey in permit areas WA-274P and WA-281P</a>	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey Permit Area WA-352-P</a>	2008/4628	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D seismic survey within permit WA-291</a>	2007/3265	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2 geotechnical surveys - preliminary and final</a>	2006/2886	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D marine seismic survey</a> (Particular Manner)	2008/4281	Not Controlled Action	Post-Approval
<a href="#">3D Marine Seismic Survey (WA-482-P, WA-363-P), WA</a>	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">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</a>	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey in WA 457-P &amp; WA 458-P, North West Shelf, offshore WA</a>	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D marine seismic Survey - Maxima 3D MSS</a>	2006/2945	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner) Manner)			
<a href="#">3D marine seismic survey over petroleum title WA-268-P</a>	2007/3458	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Surveys - Contos CT-13 &amp; Supertubes CT-13, offshore WA</a>	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D seismic survey</a> Manner)	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, Browse Basin, WA</a>	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, near Scott Reef, Browse Basin</a>	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, WA</a> (Particular Manner)	2008/4428	Not Controlled Action	Post-Approval
<a href="#">3D Seismic Survey in the Carnarvon Bsin on the North West Shelf</a>	2002/778	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D sesmic survey</a> Manner)	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Acacia East Pit Cutback Mining Project,northern Kimberley, WA</a>	2013/6752	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Acheron Non-Exclusive 2D Seismic Survey</a>	2009/4968	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Acheron Non-Exclusive 2D Seismic Survey</a>	2008/4565	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Agrippina 3D Seismic Marine Survey Action (Particular Manner)</a>	2009/5212	Not Controlled	Post-Approval
<a href="#">Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program</a>	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Aperio 3D Marine Seismic Survey, WA</a>	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Artemis-1 Drilling Program (WA-360-P)</a>	2010/5432	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Aurora MC3D Marine Seismic Survey Action (Particular Manner)</a>	2010/5510	Not Controlled	Post-Approval
<a href="#">Australia to Singapore Fibre Optic Submarine Cable System</a>	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA</a>	2013/7081	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Balnaves Condensate Field Development</a>	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bonaventure 3D seismic survey Action (Particular Manner)</a>	2006/2514	Not Controlled	Post-Approval
<a href="#">Braveheart 2D Infill Marine Seismic Survey 100km offshore</a>	2008/4442	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Braveheart 2D Marine Seismic Survey</a>	2005/2322	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cable Seismic Exploration Permit areas WA-323-P and WA-330-P</a>	2008/4227	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Cape Preston East - Iron Ore Export Facilities, Pilbara, WA</a>	2013/6844	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Caswell MC3D Marine Seismic Survey</a>	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cerberus exploration drilling campaign, Carnarvon Basin, WA</a>	2016/7645	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CGGVERITAS 2010 2D Seismic Survey</a>	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Charon 3D Marine Seismic Survey</a>	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Conduct an exploration drilling campaign</a>	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Consturction &amp; operation of the Varanus Island kitchen &amp; mess cyclone refuge building, compression p</a>	2013/6952	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Coverack Marine Seismic Survey</a>	2001/399	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P</a>	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CVG 3D Marine Seismic Survey</a>	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">DAVROS MC 3D marine seismic survey northwaet of Dampier, WA</a>	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Decommissioning of the Legendre facilities</a>	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Deep Water Drilling Program Action (Particular Manner)</a>	2010/5532	Not Controlled	Post-Approval
<a href="#">Deep Water Northwest Shelf 2D Seismic Survey</a>	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Demeter 3D Seismic Survey, off Dampier, WA</a>	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Draeck 3D Marine Seismic Survey, WA-205-P</a>	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Dredging of marine sediment to enable construction of eight berths and a turnin</a>	2010/5678	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Drilling 35-40 offshore exploration wells in deep water</a>	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Earthworks for kitchen/mess, cyclone refuge building &amp; Compression Plant, Varanus Island</a>	2013/6900	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Eendracht Multi-Client 3D Marine Seismic Survey</a>	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA</a>	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Endurance 3D Marine Seismic Data Acquisition Survey</a>	2007/3667	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Enfield M3 &amp; Vincent 4D Marine Seismic Surveys</a>	2008/3981	Not Controlled Action (Particular	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Enfield M3 4D, Vincent 4D &amp; 4D Line Test Marine Seismic Surveys</a>	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Enfield M4 4D Marine Seismic Survey</a>	2008/4558	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">Enfield oilfield 3D Seismic Survey</a>	2006/3132	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">Exmouth West 2D Marine Seismic Survey</a>	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Exploration drilling of Zeus-1 well</a>	2008/4351	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.</a>	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Fletcher-Finucane Development, WA26-L and WA191-P</a>	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Foxhound 3D Non-Exclusive Marine Seismic Survey</a>	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L</a>	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Geco Eagle 3D Marine Seismic Survey</a>	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Geoscience Australia - Marine survey in Browse Basin to acquire data to assist assessment of CO2 sto</a>	2013/6747	Not Controlled Action (Particular Manner)	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Gigas 2D Pilot Ocean Bottom Cable Marine Seismic Survey</a>	2007/3839	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Glencoe 3D Marine Seismic Survey WA-390-P</a>	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Greater Western Flank Phase 1 gas Development</a>	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Grimalkin 3D Seismic Survey</a> 2008/4523	Not Controlled Action (Particular Manner)		Post-Approval
<a href="#">Guacamole 2D Marine Seismic Survey</a>	2008/4381	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Harmony 3D Marine Seismic Survey</a> Action (Particular Manner)	2012/6699	Not Controlled	Post-Approval
<a href="#">Harpy 1 exploration well</a> 2001/183	Not Controlled Action (Particular Manner)	Post-Approval	
<a href="#">Honeycombs MC3D Marine Seismic Survey</a>	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA</a>	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA</a>	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ichthys 3D Marine Seismic Survey</a> Action (Particular Manner)	2010/5550	Not Controlled	Post-Approval
<a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>	2017/7996	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">John Ross &amp; Rosella Off Bottom Cable Seismic Exploration Program</a>	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Julimar Brunello Gas Development Project</a>	2011/5936	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Kingtree &amp; Ironstone-1 Exploration Wells</a>	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Klimt 2D Marine Seismic Survey</a> Action (Particular Manner)	2007/3856	Not Controlled	Post-Approval
<a href="#">Koolama 2D Seismic Survey Dampier Basin</a>	2010/5420	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Kraken, Lusca &amp; Asperus 3D Marine Seismic Survey</a>	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey</a>	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta</a>	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Leopard 2D marine seismic survey</a> Action (Particular Manner)	2005/2290	Not Controlled	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Lion 2D Marine Seismic Survey</a> Action (Particular Manner)	2007/3777	Not Controlled	Post-Approval
<a href="#">Macedon Gas Field Development</a> Action (Particular Manner)	2008/4605	Not Controlled	Post-Approval
<a href="#">Marine Geotechnical Drilling Program</a> Action (Particular Manner)	2008/4012	Not Controlled	Post-Approval
<a href="#">Marine reconnaissance survey</a> Action (Particular Manner)	2008/4466	Not Controlled	Post-Approval
<a href="#">Mariner Non-Exclusive 2D Seismic Survey</a>	2011/6172 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">Millstream 20GL Pipeline, Bungaroo, Borefield Integration</a>	2012/6379 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">Moosehead 2D seismic survey within permit WA-192-P</a>	2005/2167 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">Munmorah 2D seismic survey within permits WA-308/9-P</a>	2003/970 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">Nelson Point Dredging</a> (Particular Manner)	2009/4920	Not Controlled	Action Post-Approval
<a href="#">Ocean Bottom Cable Seismic Program, WA-264-P</a>	2007/3844 Action (Particular Manner)	Not Controlled	Post-Approval
<a href="#">Ocean Bottom Cable Seismic Survey</a> Action (Particular Manner)	2005/2017	Not Controlled	Post-Approval
<a href="#">Offshore Canning Multi Client 2D Marine Seismic Survey</a>	2010/5393 Action (Particular	Not Controlled	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Offshore Drilling Campaign Action (Particular Manner)</a>	2011/5830	Not Controlled	Post-Approval
<a href="#">Offshore Exploration Drilling Campaign</a>	2011/6222	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Fibre Optic Cable Network Construction &amp; Operation, Port Hedland WA to Darwin NT</a>	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Gas Exploration Drilling Campaign</a>	2012/6384	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Orcus 3D Marine Seismic Survey in WA-450-P</a>	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Osprey and Dionysus Marine Seismic Survey</a>	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Outer Canning exploration drilling program off NW coast of WA</a>	2012/6618	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Palta-1 exploration well in Petroleum Permit Area WA-384-P</a>	2011/5871	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Phoenix 3D Seismic Survey, Bedout Sub-Basin</a>	2010/5360	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pilot Appraisal Well - Torosa South 1 Action (Particular Manner)</a>	2008/3991	Not Controlled	Post-Approval
<a href="#">Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P</a>	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Port Headland Outer Harbour Pre-construction Pilling program</a>	2012/6341	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Port of Port Hedland channel marker replacement project, WA</a>	2017/8010	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Port Walcott upgrade, dredging &amp; spoil disposal, &amp; channel realignment</a>	2006/2806	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pyrenees 4D Marine Seismic Monitor Survey, HCA12A</a>	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pyrenees-Macedon 3D marine seismic survey</a>	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Quiberon 2D Seismic Survey, permit area WA-385P, offshore of Carnarvon</a>	2009/5077	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Reindeer gas reservior development, Devil Creek, Carnarvon Basin - WA</a>	2007/3917	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Repsol 3d &amp; 2D Marine Seismic Survey</a>	2012/6658	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Rose 3D Seismic Program</a>	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Rosebud 3D Marine Seismic Survey in WA-30-R and TR/5</a>	2012/6493	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Rydal-1 Petroleum Exploration Well, WA</a>	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Salsa 3D Marine Seismic Survey</a>	2010/5629	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Sampling of Stromatolites, additional sites, Mamelin Pool, WA</a>	2013/7071	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Sampling of Stromatolites and Sediments</a>	2012/6307	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Santos Winchester three dimensional seismic survey - WA-323-P &amp; WA- 330-P</a>	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Scarborough Development nearshore component, NWS, WA</a>	2018/8362	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Schild MC3D Marine Seismic Survey</a> Action (Particular Manner)	2012/6373	Not Controlled	Post-Approval
<a href="#">Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin</a>	2013/6894	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Scott Reef Seismic Research</a> Action (Particular Manner)	2006/2647	Not Controlled	Post-Approval
<a href="#">Skorpion Marine Seismic Survey WA</a> Action (Particular Manner)	2001/416	Not Controlled	Post-Approval
<a href="#">Sovereign 3D Marine Seismic Survey</a> Action (Particular Manner)	2011/5861	Not Controlled	Post-Approval
<a href="#">Stag 4D &amp; Reindeer MAZ Marine Seismic Surveys, WA</a>	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Stag Off-bottom Cable Seismic Survey</a>	2007/3696	Not Controlled Action (Particular Manner)	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Stybarrow 4D Marine Seismic Survey Action (Particular Manner)</a>	2011/5810	Not Controlled	Post-Approval
<a href="#">Stybarrow Baseline 4D marine seismic survey</a>	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Tantabiddi Boat Ramp Sand Bypassing</a>	2015/7411	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Tidepole Maz 3D Seismic Survey Campaign</a>	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Torosa-5 Apraisal Well, WA-30-R Action (Particular Manner)</a>	2008/4430	Not Controlled	Post-Approval
<a href="#">Tortilla 2D Seismic Survey, WA Action (Particular Manner)</a>	2011/6110	Not Controlled	Post-Approval
<a href="#">Tridacna 3D Ocean Bottom Cable Marine Seismic Survey</a>	2011/5959	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R</a>	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Undertake a 3D marine seismic survey</a>	2010/5695	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Undertake a three dimensional marine seismic survey</a>	2010/5679	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Undertake a three dimensional marine seismic survey</a>	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">upgrade of 3 community recreation sites</a>	2005/2349	Not Controlled Action (Particular	Post-Approval

Title of referral Reference	Referral Outcome	Assessment Status	Not controlled action (particular manner)
<a href="#">Useless Loop Port Maintenance Works and Infrastructure Upgrade</a>	2009/4791	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Vampire 2D Non Exclusive Seismic Survey, WA</a>	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Veritas Voyager 2D Marine Seismic Survey</a>	2009/5151	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Vincent M1 and Enfield M5 4D Marine Seismic Survey</a>	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Warramunga Non-Inclusive 3D Seismic Survey</a>	2008/4553	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">West Anchor 3D Marine Seismic Survey</a>	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">West Panaeus 3D seismic survey</a>	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Westralia SPAN Marine Seismic Survey, WA &amp; NT</a>	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone 3D MAZ Marine Seismic Survey</a>	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone Iago Appraisal Well Drilling</a>	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone Iago Appraisal Well Drilling</a>	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Woodside Southern Browse 3D Seismic Survey, WA</a>	2007/3534	Not Action Manner)	ControlledPost-Approval (Particular
<a href="#">Zeemeermin MC3D seismic survey, Browse Basin, Offshore WA</a>	2009/5023	Not Action Manner)	ControlledPost-Approval (Particular
Referral decision			
<a href="#">3D Marine Seismic Survey in the offshore northwest Carnarvon Basin</a>	2011/6175	Referral Decision	Completed
<a href="#">3D Seismic Survey</a>	2008/4219	Referral Decision	Completed
<a href="#">Aurora extension MC3D Marine Seismic Survey</a>	2011/5887	Referral Decision	Completed
<a href="#">Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA</a>	2013/7078	Referral Decision	Completed
<a href="#">BRSN08 3D Marine Seismic Survey</a>	2008/4582	Referral Decision	Completed
<a href="#">CVG 3D Marine Seismic Survey</a>	2012/6270	Referral Decision	Completed
<a href="#">Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L</a>	2005/2370	Referral Decision	Completed
<a href="#">Experimental Study of Behavioural and Physiological Impact on Fish of Seismic Ex</a>	2006/2625	Referral Decision	Completed
<a href="#">Mardie Salt Project, Pilbara region, WA</a>	2018/8183	Referral Decision	Completed
<a href="#">Outer Harbour Development and associated marine and terrestrial infrastructure</a>	2008/4148	Referral Decision	Completed
<a href="#">Pilot Appraisal Well - Torosa South-1</a>	2008/3985	Referral Decision	Completed
<a href="#">Rose 3D Seismic acquisition survey</a>	2008/4220	Referral Decision	Completed
<a href="#">Seismic Data Acquisition, Browse Basin</a>	2010/5475	Referral Decision	Completed
<a href="#">Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-</a>	2008/4165	Referral Decision	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision <a href="#">Tidal Power Generation Turbine</a>	2009/5235	Referral Decision	Completed
<a href="#">Two Dimensional Transition Zone Seismic Survey - TP/7 (R1)</a>	2010/5507	Referral Decision	Completed
<a href="#">Varanus Island Compression Project</a>	2012/6698	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
<a href="#">Ancient coastline at 125 m depth contour</a>	North-west
<a href="#">Ancient coastline at 90-120m depth</a>	South-west
<a href="#">Canyons linking the Argo Abyssal Plain with the Scott Plateau</a>	North-west
<a href="#">Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula</a>	North-west
<a href="#">Commonwealth waters adjacent to Ningaloo Reef</a>	North-west
<a href="#">Continental Slope Demersal Fish Communities</a>	North-west
<a href="#">Exmouth Plateau</a>	North-west
<a href="#">Glomar Shoals</a>	North-west
<a href="#">Mermaid Reef and Commonwealth waters surrounding Rowley Shoals</a>	North-west
<a href="#">Seringapatam Reef and Commonwealth waters in the Scott Reef Complex</a>	North-west
<a href="#">Wallaby Saddle</a>	North-west
<a href="#">Western demersal slope and associated fish communities</a>	South-west
<a href="#">Western rock lobster</a>	South-west

Biologically Important Areas

[ [Resource Information](#) ]

Scientific Name	Behaviour	Presence
Dolphins		
<a href="#">Orcaella heinsohni</a>		
Australian Snubfin Dolphin [81322]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
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[Orcaella heinsohni](#)

Australian Snubfin Dolphin [81322] Calving    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    Likely to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50]            Breeding    Known to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50]            Calving    Known to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50]            Calving    Likely to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50]            Foraging    Likely to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50]            Foraging (high density prey)                      Known 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

[Tursiops aduncus](#)

Indo-Pacific/Spotted Bottlenose Dolphin [68418]    Foraging likely Known to occur

Scientific Name	Behaviour	Presence
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[Tursiops aduncus](#)

Indo-Pacific/Spotted Bottlenose Dolphin [68418]      Migration likely 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      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

[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

Scientific Name	Behaviour	Presence
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[Chelonia mydas](#)

Green Turtle [1765] Aggregation      Known to occur

[Chelonia mydas](#)

Green Turtle [1765] Basking      Known to occur

[Chelonia mydas](#)

Green Turtle [1765] Foraging      Known to occur

[Chelonia mydas](#)

Green Turtle [1765] Foraging      Likely to occur

[Chelonia mydas](#)

Green Turtle [1765] Internesting      Likely 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]      Foraging      Likely to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]      Internesting      Known to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]      Internesting buffer      Known to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]      Mating      Known to occur

Scientific Name	Behaviour	Presence
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[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Migration    Known to occur  
corridor

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Nesting    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

[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

Scientific Name	Behaviour	Presence
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<a href="#">Pristis pristis</a> Freshwater Sawfish [60756]	Nursing	Likely to occur
<a href="#">Pristis pristis</a> Freshwater Sawfish [60756]	Nursing	Known to occur
<a href="#">Pristis pristis</a> Freshwater Sawfish [60756]	Pupping	Likely to occur
<a href="#">Pristis zijsron</a> Green Sawfish [68442]	Foraging	Known to occur
<a href="#">Pristis zijsron</a> Green Sawfish [68442]	Nursing	Known to occur
<a href="#">Pristis zijsron</a> Green Sawfish [68442]	Pupping	Known to occur

Seabirds

[Ardenna pacifica](#)  
Wedge-tailed Shearwater [84292]

Breeding

Known to occur

[Ardenna pacifica](#)  
Wedge-tailed Shearwater [84292]

Foraging (in high numbers)

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]  
(provisioning young)

Foraging

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

Known to occur

Scientific Name	Behaviour	Presence
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numbers)

[Phaethon lepturus](#)

White-tailed Tropicbird [1014] Breeding 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] 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

[Sula leucogaster](#)

Brown Booby [1022] Breeding Known to occur

[Sula sula](#)

Red-footed Booby [1023] Breeding Known to occur

[Thalasseus bengalensis](#)

Lesser Crested Tern [66546] Breeding Known to occur

Sharks [Rhincodon typus](#)

Whale Shark [66680] Foraging Known to occur

[Rhincodon typus](#)

Whale Shark [66680] Foraging (high density prey) Known to occur

Whales [Balaenoptera musculus brevicauda](#)

Pygmy Blue Whale [81317] Distribution Known to occur



Scientific Name	Behaviour	Presence
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[Balaenoptera musculus brevicauda](#)

Pygmy Blue Whale [81317]    Foraging    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    Known to occur  
(north)

[Megaptera novaeangliae](#)

Humpback Whale [38]    Migration    Known to occur  
(north and south)

[Megaptera novaeangliae](#)

Humpback Whale [38]    Nursing    Known to occur

[Megaptera novaeangliae](#)

Humpback Whale [38]    Resting    Known to occur

## Caveat

### 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.

### 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

### 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

### 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.



**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: 06-Jun-2024 [Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#) [Extra Information](#)

[Caveat](#) [Acknowledgements](#)

NWMR PMST sub area 2 (North area)



# 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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance (Ramsar</a>	2
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	8
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	53
<a href="#">Listed Migratory Species:</a>	64

**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.

<a href="#">Commonwealth Lands:</a>	3
<a href="#">Commonwealth Heritage Places:</a>	1
<a href="#">Listed Marine Species:</a>	107
<a href="#">Whales and Other Cetaceans:</a>	27
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	7
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	3

**Extra Information**

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	14
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	1
<a href="#">EPBC Act Referrals:</a>	118
<a href="#">Key Ecological Features (Marine):</a>	7
<a href="#">Biologically Important Areas:</a>	57
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

Matters of National Environmental Significance

National Heritage Places		[ Resource Information ]
Name	State	Legal Status
Natural		
<a href="#">The West Kimberley</a>	WA	Listed place

Wetlands of International Importance (RamsarWetlands)		[ Resource Information ]
Ramsar Site Name		Proximity
<a href="#">Ashmore reef national nature reserve</a>		Within Ramsar site
<a href="#">Ord river floodplain</a>		Within 10km of Ramsar site

Commonwealth Marine Area	[ Resource Information ]
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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) Commonwealth Marine Areas (EPBC Act) Commonwealth Marine Areas (EPBC Act) Commonwealth Marine Areas (EPBC Act) Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species	[ Resource Information ]
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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		
<a href="#">Anous tenuirostris melanops</a>		
Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area



Scientific Name	Threatened Category	Presence Text
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[Calidris acuminata](#)  
 Sharp-tailed Sandpiper [874] Vulnerable Species or species  
 habitat known to occur within area

[Calidris canutus](#)  
 Red Knot, Knot [855] Vulnerable 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

[Charadrius leschenaultii](#)  
 Greater Sand Plover, Large Sand Plover Vulnerable Species or species habitat known to occur within area  
 [877]

[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 likely to occur within area

[Falco hypoleucos](#)  
 Grey Falcon [929] Vulnerable Species or species habitat likely to occur within area

[Falcunculus frontatus whitei](#)  
 Crested Shrike-tit (northern), Northern Vulnerable Species or species habitat likely to occur within area  
 Shrike-tit [26013]

[Geophaps smithii blaaui](#)  
 Partridge Pigeon (western) [66501] Vulnerable Species or species  
 habitat likely to occur within area

[Limnodromus semipalmatus](#)  
 Asian Dowitcher [843] Vulnerable Species or species habitat known to occur within area

[Limosa lapponica baueri](#)  
 Nunivak Bar-tailed Godwit, Western Endangered Species or species habitat may occur within area  
 Alaskan Bar-tailed Godwit [86380]



Scientific Name	Threatened Category	Presence Text
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[Limosa lapponica menzbieri](#)  
 Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]

Endangered
 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

[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
 Foraging, feeding or related behaviour likely to occur within area

[Phaethon rubricauda westralis](#)  
 Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]

Endangered
 Breeding known to occur within area

[Rostratula australis](#)  
 Australian Painted Snipe [77037]

Endangered
 Species or species habitat likely to occur within area

[Tringa nebularia](#)  
 Common Greenshank, Greenshank [832]

Endangered
 Species or species habitat likely to occur within area

[Tyto novaehollandiae kimberli](#)  
 Masked Owl (northern) [26048]

Vulnerable
 Species or species habitat likely to occur within area

FISH

[Thunnus maccoyii](#)  
 Southern Bluefin Tuna [69402]  
 Dependent

Conservation
 Breeding known 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

Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Conilurus penicillatus</a> Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
<a href="#">Isoodon auratus auratus</a> Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Mesembriomys gouldii gouldii</a> Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat may occur within area
<a href="#">Petrogale concinna monastria</a> Nabarlek (Kimberley) [87607]	Endangered	Species or species habitat known to occur within area
<a href="#">Phascogale tapoatafa kimberleyensis</a> Kimberley brush-tailed phascogale, Brush-tailed Phascogale (Kimberley) [88453]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Saccolaimus saccolaimus nudicluniatus</a> Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Trichosurus vulpecula arnhemensis</a> Northern Brushtail Possum [83091]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Xeromys myoides</a> Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area

REPTILE

Scientific Name	Threatened Category	Presence Text
<a href="#">Acanthophis hawkei</a> Plains Death Adder [83821]	Vulnerable	Species or species habitat may occur within area
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<a href="#">Tiliqua scincoides intermedia</a> Northern Blue-tongued Skink [89838]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Varanus mertensi</a> Mertens' Water Monitor, Mertens's Water Monitor [1568]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Varanus mitchelli](#)  
 Mitchell's Water Monitor [1569]

Critically Endangered

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 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 likely 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

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

Listed Migratory Species

[ [Resource Information](#) ]

Scientific Name	Threatened Category	Presence Text
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Migratory Marine Birds
 [Anous stolidus](#)  
 Common Noddy [825]

Breeding known to occur within area

[Apus pacificus](#)  
 Fork-tailed Swift [678]

Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna pacifica</a> Wedge-tailed Shearwater [84292]	Breeding known to occur within area	
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]	Species or species habitat known to occur within area	
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]	Breeding known to occur within area	
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]	Breeding known to occur within area	
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]	Breeding known to occur within area	
<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]	Breeding known to occur within area	
<a href="#">Sterna dougallii</a> Roseate Tern [817]	Breeding known to occur within area	
<a href="#">Sternula albifrons</a> Little Tern [82849]	Breeding known to occur within area	
<a href="#">Sula dactylatra</a> Masked Booby [1021]	Breeding known to occur within area	
<a href="#">Sula leucogaster</a> Brown Booby [1022]	Breeding known to occur within area	
<a href="#">Sula sula</a> Red-footed Booby [1023]	Breeding known to occur within area	
Migratory Marine Species		

Scientific Name	Threatened Category	Presence Text
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[Anoxypristis cuspidata](#)  
Narrow Sawfish, Knifetooth Sawfish  
[68448]

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 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, LuthEndangered [1768]

Breeding likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Dugong dugon](#)

Dugong [28]    Breeding known to occur within area

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Vulnerable    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

[Lepidochelys olivacea](#)

Olive Ridley Turtle, Pacific Ridley Turtle [1767]    Endangered    Foraging, feeding or related behaviour 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

[Mobula birostris as Manta birostris](#)

Giant Manta Ray [90034]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] 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]    Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[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 likely 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

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 likely 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 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



Scientific Name	Threatened Category	Presence Text
<a href="#">Acrocephalus orientalis</a> Oriental Reed-Warbler [59570]		Species or species habitat known to occur within area
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat may occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Numenius madagascariensis](#)

Eastern Curlew, Far Eastern Curlew [847] Critically Endangered Species or species habitat known 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 nebularia](#)

Common Greenshank, Greenshank [832] Endangered Species or species habitat likely 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
Unknown	

Commonwealth Land - [52278] ACI

Commonwealth Land - [52276] ACI

Commonwealth Land - [52277] ACI

Commonwealth Heritage Places

[ [Resource Information](#) ]

Name	State	Status
Natural		

[Ashmore Reef National Nature Reserve](#) EXT Listed place

Listed Marine Species

[ [Resource Information](#) ]

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

Scientific Name	Threatened Category	Presence Text
<a href="#">Anous minutus</a> Black Noddy [824]		Breeding known to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Breeding known to occur within area
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Breeding known to occur within area
<a href="#">Anseranas semipalmata</a> Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Ardenna pacifica as Puffinus pacificus</a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#">Bubulcus ibis as Ardea ibis</a> Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]	Species or species habitat known to occur within area	
<a href="#">Cecropis daurica as Hirundo daurica</a> Red-rumped Swallow [80610]	Species or species habitat may occur within area overfly marine area	
<a href="#">Chalcites osculans as Chrysococcyx osculans</a> Black-eared Cuckoo [83425]	Species or species habitat known to occur within area overfly marine area	
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable Species or species habitat known to occur within area	
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]	Species or species habitat may occur within area overfly marine area	
<a href="#">Chroicocephalus novaehollandiae as Larus novaehollandiae</a> Silver Gull [82326]	Breeding known to occur within area	
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]	Species or species habitat may occur within area overfly marine area	
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]	Species or species habitat known to occur within area	
<a href="#">Hirundo rustica</a> Barn Swallow [662]	Species or species habitat known to occur within area overfly marine area	

Scientific Name	Threatened Category	Presence Text
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[Hydroprogne caspia as Sterna caspia](#)

Caspian Tern [808] Breeding known to occur within area

[Limnodromus semipalmatus](#)

Asian Dowitcher [843] Vulnerable 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

[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

[Onychoprion anaethetus as Sterna anaethetus](#)

Bridled Tern [82845] Breeding 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] Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Phaethon lepturus fulvus</a>		
Christmas Island White-tailed Tropicbird, Endangered Golden Bosunbird [26021]	Foraging, feeding or related behaviour likely to occur within area	
<a href="#">Phaethon rubricauda</a>		
Red-tailed Tropicbird [994]	Breeding known to occur within area	
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a>		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
<a href="#">Sterna dougallii</a>		
Roseate Tern [817]	Breeding known to occur within area	
<a href="#">Sternula albifrons as Sterna albifrons</a>		
Little Tern [82849]	Breeding known to occur within area	
<a href="#">Sula dactylatra</a>		
Masked Booby [1021]	Breeding known to occur within area	
<a href="#">Sula leucogaster</a>		
Brown Booby [1022]	Breeding known to occur within area	
<a href="#">Sula sula</a>		
Red-footed Booby [1023]	Breeding known to occur within area	
<a href="#">Thalasseus bengalensis as Sterna bengalensis</a>		
Lesser Crested Tern [66546]	Breeding known to occur within area	
<a href="#">Thalasseus bergii as Sterna bergii</a>		
Greater Crested Tern [83000]	Breeding known to occur within area	
<a href="#">Tringa nebularia</a>		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area
Fish		
<a href="#">Bhanotia fasciolata</a>		
Corrugated Pipefish, Barbed Pipefish [66188]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Campichthys tricarinatus</a> Three-keel Pipefish [66192]		Species or species habitat may occur within area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]	Species or species habitat may occur within area	
<a href="#">Corythoichthys amplexus</a> Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
<a href="#">Corythoichthys flavofasciatus</a> Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
<a href="#">Corythoichthys intestinalis</a> Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
<a href="#">Corythoichthys schultzi</a> Schultz's Pipefish [66205]	Species or species habitat may occur within area	
<a href="#">Cosmocampus banneri</a> Roughridge Pipefish [66206]	Species or species habitat may occur within area	
<a href="#">Doryrhamphus dactyliophorus</a> Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
<a href="#">Doryrhamphus excisus</a> Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
<a href="#">Doryrhamphus janssi</a> Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species habitat may occur within area
<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]	Species or species habitat may occur within area	
<a href="#">Halicampus dunckeri</a> Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]	Species or species habitat may occur within area	
<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]	Species or species habitat may occur within area	
<a href="#">Haliichthys taeniophorus</a> Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]	Species or species habitat may occur within area	



Scientific Name	Threatened Category	Presence Text
<a href="#">Hippocampus spinosissimus</a> Hedgehog Seahorse [66239]		Species or species habitat may occur within area
<a href="#">Micrognathus micronotopterus</a> Tidepool Pipefish [66255]	Species or species habitat may occur within area	
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
<a href="#">Solegnathus lettiensis</a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal <a href="#">Dugong dugon</a> Dugong [28] Breeding known to occur within area		
Reptile <a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered within area	Species or species habitat known to occur
<a href="#">Aipysurus duboisii</a> Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Aipysurus fuscus</a> Dusky Sea Snake [1119]	Species or species habitat known to occur within area	
<a href="#">Aipysurus laevis</a> Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
<a href="#">Aipysurus mosaicus as Aipysurus eydouxii</a> Mosaic Sea Snake [87261]	Species or species habitat may occur within area	
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Crocodylus johnstoni</a> Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<a href="#">Emydocephalus annulatus</a> Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hydrelaps darwiniensis</a> Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
<a href="#">Hydrophis atriceps</a> Black-headed Sea Snake [1101]	Species or species habitat may occur within area	
<a href="#">Hydrophis coggeri</a> Cogger's Sea Snake [25925]	Species or species habitat may occur within area	
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis hardwickii as Lapemis hardwickii</a> Spine-bellied Sea Snake [93516]	Species or species habitat may occur within area	
<a href="#">Hydrophis inornatus</a> Plain Sea Snake [1107]	Species or species habitat may occur within area	
<a href="#">Hydrophis kingii as Disteira kingii</a> Spectacled Sea Snake [93511]	Species or species habitat may occur within area	
<a href="#">Hydrophis macdowellii as Hydrophis mcdowellii</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
<a href="#">Hydrophis major as Disteira major</a> Olive-headed Sea Snake [93512]	Species or species habitat may occur within area	
<a href="#">Hydrophis ornatus</a> Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
<a href="#">Hydrophis peronii as Acalyptophis peronii</a> Horned Sea Snake [93509]	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
<a href="#">Hydrophis platura</a> as <a href="#">Pelamis platurus</a> Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
<a href="#">Hydrophis stokesii</a> as <a href="#">Astrotia stokesii</a> Stokes' Sea Snake [93510]		Species or species habitat may occur within area
<a href="#">Hydrophis zweiffei</a> as <a href="#">Enhydrina schistosa</a> Australian Beaked Sea Snake [93514]		Species or species habitat may occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
Whales and Other Cetaceans		[ <a href="#">Resource Information</a> ]
Current Scientific Name	Status	Type of Presence
Mammal		
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]		Species or species habitat may occur within area
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
<a href="#">Lagenodelphis hosei</a> Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Breeding known to occur within area	
<a href="#">Mesoplodon densirostris</a> Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Breeding known to occur within area	
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]		Species or species habitat likely to occur within area
<a href="#">Sousa sahalensis</a> Australian Humpback Dolphin [87942]	Breeding known to occur within area	
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]	Species or species habitat may occur within area	
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]	Species or species habitat may occur within area	
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]	Species or species habitat may occur within area	
<a href="#">Ziphius cavirostris</a> 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	
Joseph Bonaparte Gulf	Multiple Use Zone (IUCN VI)	
Kimberley	Multiple Use Zone (IUCN VI)	

Park Name	Zone & IUCN Categories
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Ashmore Reef Recreational Use Zone (IUCN IV)	
Ashmore Reef Sanctuary Zone (IUCN Ia)	
Cartier Island Sanctuary Zone (IUCN Ia)	
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles			[ Resource Information ]
Scientific Name	Behaviour	Presence	
Aug - Sep			
<a href="#">Natator depressus</a>			
Flatback Turtle [59257]	Nesting	Known to occur	
Dec - Jan <a href="#">Chelonia mydas</a>			
Green Turtle [1765]	Nesting	Known to occur	
May - Jul <a href="#">Lepidochelys olivacea</a>			
Olive Ridley Turtle [1767]	Nesting	Known to occur	

### Extra Information

State and Territory Reserves		[ Resource Information ]
Protected Area Name	Reserve Type	State
Balanggarra	Indigenous Protected Area	WA
Browse Island	Nature Reserve	WA
Dambimangari	Indigenous Protected Area	WA
Lalang-garram / Camden Sound	Marine Park	WA
Lesueur Island	Nature Reserve	WA
Low Rocks	Nature Reserve	WA
Niiwalarra Islands	National Park	WA
North Kimberley	Marine Park	WA
Nort Lalang-garram	Marine Park	WA



Protected Area Name	Reserve Type	State
Pelican Island	Nature Reserve	WA
Prince Regent	National Park	WA
Unnamed WA41775	5(1)(h) Reserve	WA
Unnamed WA44677	5(1)(h) Reserve	WA
Uunguu	Indigenous Protected Area	WA

Nationally Important Wetlands		[ Resource Information ]
Wetland Name		State
<a href="#">Ashmore Reef</a>		EXT

EPBC Act Referrals			[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West</a>	2024/09826		Referral Decision
<a href="#">Project Crux Cable Lay and Operation</a>	2022/09441		Completed
<a href="#">Project Fitzroy Expansion Offshore Cable Lay</a>	2023/09674		Referral Decision

Controlled action Approval	<a href="#">2-D seismic survey Scott Reef</a>	2000/125	Controlled Action	Post-
<a href="#">Audacious Oil Field Standalone Development</a>	2001/407	Controlled Action	Completed	
<a href="#">Bonaparte Liquified Natural Gas Project</a>	2011/6141	Controlled Action	Post-Approval	
<a href="#">Conduct an exploration drilling campaign</a>	2010/5718	Controlled Action	Completed	
<a href="#">Decommissioning of Challis Oilfield</a>	2003/942	Controlled Action	Post-Approval	
<a href="#">Develop Ichthys gas-condensate field permit area W</a>	2006/2767	Controlled Action	Completed	
<a href="#">Development of Blacktip Gas Field</a>	2003/1180	Controlled Action	Post-Approval	
<a href="#">Development of Browse Basin Gas Fields (Upstream)</a>	2008/4111	Controlled Action	Completed	



Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
<a href="#">Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline</a>	2008/4208	Controlled Action	Post-Approval
<a href="#">Montara 4, 5, and 6 Oil Production Wells, and Montara 3 Gas Re-Injection Well</a>	2002/755	Controlled Action	Post-Approval
<a href="#">Prelude Floating Liquefied Natural Gas Facility and Gas Field Development</a>	2008/4146	Controlled Action	Post-Approval
<a href="#">PTTEP AA Floating LNG Facility</a>	2011/6025	Controlled Action	Completed
Not controlled action			
<a href="#">2D seismic survey, exploration permit NT/P67</a>	2004/1587	Not Action	ControlledCompleted
<a href="#">2D Seismic Survey in Permit Areas WA-318-P &amp; WA-319-P, near Cape Londonderry</a>	2004/1687	Not Action	ControlledCompleted
<a href="#">3D marine seismic survey in WA 314P and WA 315P</a>	2004/1927	Not Action	ControlledCompleted
<a href="#">Adele Trend TQ3D Seismic Survey</a>	2001/252	Not Action	ControlledCompleted
<a href="#">AEC International Hydrocarbon Well Puffin 6</a>	2000/36	Not Action	ControlledCompleted
<a href="#">Audacious-3 oil drilling well</a>	2003/1042	Not Action	ControlledCompleted
<a href="#">Backpacker-1 Offshore Hydrocarbon Exploration Well</a>	2001/300	Not Action	ControlledCompleted
<a href="#">Coot-1 hydrocarbon exploration well, Permit Area AC/L2 or AC/L3</a>	2001/296	Not Action	ControlledCompleted
<a href="#">Crux-A and Crux-B appraisal wells, Petroleum Permit Area AC/P23</a>	2006/2748	Not Action	ControlledCompleted
<a href="#">Crux gas-liquids development in permit AC/P23</a>	2006/3154	Not Action	ControlledCompleted
<a href="#">Drilling of 12 Hydrocarbon Exploration Wells, Permit Area WA-371-P</a>	2006/3005	Not Action	ControlledCompleted
<a href="#">Drilling of exploration well Audacious- 1 in AC/P17</a>	2000/5	Not Action	ControlledCompleted
<a href="#">Drilling of exploration wells, Permit areas WA-301-P to WA-305-P</a>	2002/769	Not Action	ControlledCompleted

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Drilling of Marina-1 Exploration Well</a>	2007/3586	Not Controlled Action	Completed
<a href="#">Echuca Shoals-2 Exploration of Appraisal Well</a>	2006/3020	Not Action	ControlledCompleted
<a href="#">Exploration Drilling in AC/P17, AC/P18 and AC/P24</a>	2001/359	Not Action	ControlledCompleted
<a href="#">Exploration Well AC/P23</a>	2001/234	Not Action	ControlledCompleted
<a href="#">Kaleidoscope exploration well</a>	2001/182	Not Action	ControlledCompleted
<a href="#">Marine Seismic Survey in WA-239-P</a>	2000/24	Not Action	ControlledCompleted
<a href="#">Marine Survey for the Australia-ASEAN Power Link AAPL</a>	2020/8714	Not Action	ControlledCompleted
<a href="#">Montara-3 Offshore Hydrocarbon Exploration Well Permit Area AC/RL3</a>	2001/489	Not Action	ControlledCompleted
<a href="#">Nexus Drilling Program NT-P66</a>	2007/3745	Not Action	ControlledCompleted
<a href="#">P30 Hydrocarbon Exploration Well</a>	2001/293	Not Action	ControlledCompleted
<a href="#">Project Highclere Geophysical Survey</a>	2021/9023	Not Action	ControlledCompleted
<a href="#">Puffin Oil wells 7, 8 &amp; 9 development</a>	2005/2336	Not Action	ControlledCompleted
<a href="#">Saucepan 1 Exploration Well ACP23</a>	2000/2	Not Action	ControlledCompleted
<a href="#">Skua and Swift Oilfields</a>	2006/3195	Not Action	ControlledCompleted
<a href="#">Strumbo-1 Gas Exploration Well Permit Area WA-288-P</a>	2002/884	Not Action	ControlledCompleted
<a href="#">Thresher-1 Well</a>	2000/84	Not Action	ControlledCompleted
Not controlled action (particular manner)			
<a href="#">2 (3D) Marine Seismic Surveys</a>	2009/4994	Not Action Manner)	ControlledCompleted (Particular
<a href="#">2D and 3D Seismic Survey</a>	2011/6197	Not Action (Particular	ControlledPost-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">2D and 3D Seismic Survey WA-405-P</a> Action (Particular Manner)	2009/5104	Not Controlled	Post-Approval
<a href="#">2D and 3D Seismic Survey WA-405-P</a> Action (Particular Manner)	2008/4133	Not Controlled	Post-Approval
<a href="#">2D Marine Seismic Survey</a> Action (Particular Manner)	2009/4728	Not Controlled	Post-Approval
<a href="#">2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile</a>	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D marine seismic survey within permit area WA-318-P</a>	2007/3879	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D or 3D Marine Seismic Survey in Petroleum Permit Area AC/P35</a>	2009/4864	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Marine Survey</a> Action (Particular Manner)	2001/363	Not Controlled	Post-Approval
<a href="#">2D Seismic survey</a> Manner)	2009/5076	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D seismic survey in permit areas WA-274P and WA-281P</a>	2004/1521	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey in WA Permit Area TP/22 and Commonwealth Permit Area WA-280-P</a>	2005/2100	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey</a> Action (Particular Manner)	2008/4437	Not Controlled	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">3D Marine Seismic Survey, Permit AC/P 23</a>	2005/2364	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, Browse Basin, WA</a>	2009/5048	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, near Scott Reef, Browse Basin</a>	2005/2126	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, petroleum exploration permit AC/P33</a>	2006/2918	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D seismic survey of AC/P4, AC/P17 and AC/P24</a>	2006/2857	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey WA-406-P Bonaparte Basin</a>	2007/3904	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">AC/P37 3D Seismic Survey Ashmore Cartier</a>	2007/3774	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Auralandia 3D marine seismic survey</a> Action (Particular Manner)	2011/5961	Not Controlled	Post-Approval
<a href="#">Aurora MC3D Marine Seismic Survey</a> Action (Particular Manner)	2010/5510	Not Controlled	Post-Approval
<a href="#">Bassett 3D Marine Seismic Survey</a> Action (Particular Manner)	2010/5538	Not Controlled	Post-Approval
<a href="#">Bonaparte 2D &amp; 3D marine seismic survey</a>	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bonaparte Seismic and Bathymetric Survey</a>	2012/6295	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Braveheart 2D Infill Marine Seismic Survey 100km offshore</a>	2008/4442	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Braveheart 2D Marine Seismic Survey</a>	2005/2322	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Canis 3D Marine Seismic Survey</a>	2008/4492	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cartier East and Cartier West 3D Marine Seismic Surveys</a>	2009/5230	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Caswell MC3D Marine Seismic Survey</a>	2012/6594	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Conduct an exploration drilling campaign</a>	2011/5964	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Deep Water Northwest Shelf 2D Seismic Survey</a>	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Drilling of Audacious-5 appraisal well</a>	2008/4327	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Drilling of Exploration &amp; Appraisal Wells Braveheart-1 &amp; Cornea-3</a>	2009/5160	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Drilling of two appraisal wells</a>	2011/5840	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Exploration Drilling Campaign</a>	2011/6047	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Exploration Drilling Campaign, Browse Basin, WA-341-P, AC-P36 and WA-343-P</a>	2013/6898	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Exploration Drilling in Permit Areas WA-402-P &amp; WA-403-P</a>	2010/5297	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Exploration Drilling Program - Permit areas - WA-314-P, WA-315-P, WA-398-P.</a>	2008/4064	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Fishburn2D Marine Seismic Survey</a> Action (Particular Manner)	2012/6659	Not Controlled	Post-Approval
<a href="#">Floyd 3D and Chisel 3D Seismic Surveys</a>	2011/6220	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Gicea 3D Marine Seismic Survey</a> Action (Particular Manner)	2008/4389	Not Controlled	Post-Approval
<a href="#">Gold 2D Marine Seismic Survey Permit Areas WA375P and WA376P</a>	2009/4698	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ichthys 3D Marine Seismic Survey</a> Action (Particular Manner)	2010/5550	Not Controlled	Post-Approval
<a href="#">Kingtree &amp; Ironstone-1 Exploration Wells</a>	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Kraken, Lusca &amp; Asperus 3D Marine Seismic Survey</a>	2013/6730	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Malita West 3D Seismic Survey WA-402-P and WA-403-P</a>	2007/3936	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Marine Environmental Survey 2012</a> Action (Particular	2012/6310	Not Controlled	Post-Approval



Title of referral Reference	Referral Outcome	Assessment Status	Not controlled action (particular manner)
<a href="#">Nova 3D Seismic Survey</a> (Particular Manner)	2013/6825	Not Controlled	Action Post-Approval
<a href="#">NT/P80 2010 2D Marine Seismic Survey</a>	2010/5487	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Octantis 3D Marine Seismic Survey, Permit Area AC/P41 off northern Western Australia</a>	2007/3369	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Offshore Exploration Drilling Campaign</a>	2011/6222	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Offshore Fibre Optic Cable Network Construction &amp; Operation, Port Hedland WA to Darwin NT</a>	2014/7223	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Offshore Gas Exploration Drilling Campaign</a>	2012/6384	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Petrel MC2D Marine Seismic Survey</a> Action (Particular Manner)	2010/5368	Not Controlled	Post-Approval
<a href="#">Sandalford 3D Seismic Survey</a> Action (Particular Manner)	2012/6261	Not Controlled	Post-Approval
<a href="#">Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)</a>	2011/5934	Not Controlled	Action (Particular Manner) Post-Approval
<a href="#">Schild MC3D Marine Seismic Survey</a> Action (Particular Manner)	2012/6373	Not Controlled	Post-Approval
<a href="#">Schild Phase 11 MC3D Marine Seismic Survey, Browse Basin</a>	2013/6894	Not Controlled	Action (Particular Manner) Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Searcher bathymetry &amp; geochemical seismic survey, Browse Basin,Timor Sea,WA</a>	2013/6980	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Sonar and Acoustic Trials (Particular Manner)</a>	2001/345	Not Controlled	Action Post-Approval
<a href="#">Songa Venus Drilling and Testing Operations</a>	2009/5122	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Thoar 3D Marine Seismic Survey Action (Particular Manner)</a>	2010/5668	Not Controlled	Post-Approval
<a href="#">Tiffany 3D Seismic Survey Action (Particular Manner)</a>	2010/5339	Not Controlled	Post-Approval
<a href="#">Tow West Atlas wreck from present location to boundary of EEZ</a>	2010/5652	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ursa 3D Marine Seismic Survey Action (Particular Manner)</a>	2008/4634	Not Controlled	Post-Approval
<a href="#">Vampire 2D Non Exclusive Seismic Survey, WA</a>	2010/5543	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Westralia SPAN Marine Seismic Survey, WA &amp; NT</a>	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Zeppelin 3D Seismic Survey Action (Particular Manner)</a>	2011/6148	Not Controlled	Post-Approval
Referral decision			
<a href="#">2D Marine Seismic Survey</a>	2008/4623	Referral Decision	Completed
<a href="#">BRSN08 3D Marine Seismic Survey</a>	2008/4582	Referral Decision	Completed



Title of referral	Reference	Referral Outcome	Assessment Status
Referral decision			
<a href="#">Nova 3D Seismic Survey, WA 442-NT/P81, Joseph Bonaparte Gulf</a>	2013/6820	Referral Decision	Completed
<a href="#">Puffin South-West Development of Oil Reserves</a>	2007/3834	Referral Decision	Completed
<a href="#">Seismic Data Acquisition, Browse Basin</a>	2010/5475	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
<a href="#">Ancient coastline at 125 m depth contour</a>	North-west
<a href="#">Ashmore Reef and Cartier Island and surrounding Commonwealth waters</a>	North-west
<a href="#">Carbonate bank and terrace system of the Sahul Shelf</a>	North-west
<a href="#">Continental Slope Demersal Fish Communities</a>	North-west
<a href="#">Pinnacles of the Bonaparte Basin</a>	North
<a href="#">Pinnacles of the Bonaparte Basin</a>	North-west
<a href="#">Seringapatam Reef and Commonwealth waters in the Scott Reef Complex</a>	North-west

Biologically Important Areas

[ [Resource Information](#) ]

Scientific Name	Behaviour	Presence
Dolphins		
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Breeding	Known to occur
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Calving	Known to occur
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Foraging	Known to occur
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]	Foraging (high density prey)	Known to occur

Scientific Name	Behaviour	Presence
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[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 Known to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50] Calving Likely to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50] Foraging Known to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50] Foraging Likely 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

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50] Significant habitat Known to occur

[Sousa chinensis](#)

Indo-Pacific Humpback Dolphin [50] Significant habitat - Likely to occur  
unknown behaviour

[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

Scientific Name	Behaviour	Presence
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[Dugong dugon](#)

Dugong [28]    Calving    Known to occur

[Dugong dugon](#)

Dugong [28]    Foraging    Known to occur

[Dugong dugon](#)

Dugong [28]    Foraging (high density seagrass beds)    Known to occur

[Dugong dugon](#)

Dugong [28]    Nursing    Known to occur

Marine Turtles [Caretta caretta](#)

Loggerhead Turtle [1763]Foraging    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 buffer    Known to occur

[Chelonia mydas](#)

Green Turtle [1765] Internesting buffer    Likely to occur

[Chelonia mydas](#)

Green Turtle [1765] Mating    Likely to occur

[Chelonia mydas](#)

Green Turtle [1765] Nesting    Known to occur

[Chelonia mydas](#)

Green Turtle [1765] Nesting    Likely to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Foraging    Likely to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Internesting buffer    Likely to occur

Scientific Name	Behaviour	Presence
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[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Internesting buffer    Known to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Nesting    Known to occur

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]    Nesting    Likely to occur

[Lepidochelys olivacea](#)

Olive Ridley Turtle [1767]Foraging    Known to occur

[Natator depressus](#)

Flatback Turtle [59257]    Foraging    Known to occur

[Natator depressus](#)

Flatback Turtle [59257]    Internesting buffer    Known to occur

[Natator depressus](#)

Flatback Turtle [59257]    Nesting    Known to occur

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

[Sterna dougallii](#) Roseate Tern [817]

   Breeding    Known to occur

[Sternula albifrons sinensis](#) Little Tern [82850]

   Breeding    Known to occur

[Sternula albifrons sinensis](#) Little Tern [82850]

   Resting    Known to occur

Scientific Name	Behaviour	Presence
<a href="#">Sula leucogaster</a> Brown Booby [1022]	Breeding	Known to occur
<a href="#">Sula sula</a> Red-footed Booby [1023]	Breeding	Known to occur
<a href="#">Thalasseus bengalensis</a> Lesser Crested Tern [66546]	Breeding	Known to occur
Sharks <a href="#">Rhincodon typus</a> Whale Shark [66680]	Foraging	Known to occur
Whales <a href="#">Balaenoptera musculus brevicauda</a> Pygmy Blue Whale [81317]	Distribution	Known to occur
<a href="#">Balaenoptera musculus brevicauda</a> Blue Whale [81317]	Pygmy Foraging	Known to occur
<a href="#">Balaenoptera musculus brevicauda</a> Blue Whale [81317]	Pygmy Migration	Known to occur
<a href="#">Megaptera novaeangliae</a> [38] Humpback Whale	Calving	Known to occur
<a href="#">Megaptera novaeangliae</a> [38] Humpback Whale	Migration	Known to occur
<a href="#">Megaptera novaeangliae</a> [38] Humpback Whale	Nursing	Known to occur
<a href="#">Megaptera novaeangliae</a> [38] Humpback Whale	Resting	Known to occur

## Caveat

### 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.

### 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

### 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

### 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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**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: 11-Jul-2024 [Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#) [Extra Information](#)

[Caveat](#) [Acknowledgements](#)

Figure 1: NMR PMST area



# 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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance (Ramsar</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	3
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	82
<a href="#">Listed Migratory Species:</a>	82

**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.

<a href="#">Commonwealth Lands:</a>	6
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	145
<a href="#">Whales and Other Cetaceans:</a>	25
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	21
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	5

**Extra Information**

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	25
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	7
<a href="#">EPBC Act Referrals:</a>	80
<a href="#">Key Ecological Features (Marine):</a>	10
<a href="#">Biologically Important Areas:</a>	26
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	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		

[Arenaria interpres](#)

Ruddy Turnstone [872] Vulnerable Roosting known to occur within area

[Calidris acuminata](#)

Sharp-tailed Sandpiper [874] Vulnerable Roosting known to occur within area

[Calidris canutus](#)

Red Knot, Knot [855] Vulnerable 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] Vulnerable Roosting known to occur within area

[Charadrius leschenaultii](#)

Greater Sand Plover, Large Sand Plover Vulnerable Species or species habitat known to occur within area [877]

Scientific Name	Threatened Category	Presence Text
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Erythrotriorchis radiatus</a> Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area
<a href="#">Erythrura gouldiae</a> Gouldian Finch [413]	Endangered	Species or species habitat likely to occur within area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Falcunculus frontatus whitei</a> Crested Shrike-tit (northern), Northern Shrike-tit [26013]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
<a href="#">Geophaps smithii smithii</a> Partridge Pigeon (eastern) [64441]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica baueri</a> Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
<a href="#">Melanodryas cucullata melvillensis</a> Tiwi Islands Hooded Robin, Hooded Robin (Tiwi Islands) [67092]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
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<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
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<a href="#">Pluvialis squatarola</a> Grey Plover [865]	Vulnerable	Roosting known to occur within area
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<a href="#">Probosciger aterrimus macgillivrayi</a> Palm Cockatoo (Australian) [67033]	Vulnerable	Species or species habitat likely to occur within area
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<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
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<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
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<a href="#">Tyto novaehollandiae kimberli</a> Masked Owl (northern) [26048]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Tyto novaehollandiae melvillensis</a> Tiwi Masked Owl, Tiwi Islands Masked Owl [26049]	Endangered	Species or species habitat known to occur within area
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<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area
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FISH

<a href="#">Thunnus maccoyii</a> Southern Bluefin Tuna [69402] Dependent	Conservation	Species or species habitat may occur within area
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MAMMAL

<a href="#">Antechinus bellus</a> Fawn Antechinus [344]	Vulnerable	Species or species habitat likely to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Conilurus penicillatus</a> Brush-tailed Rabbit-rat, Brush-tailed Tree-rat, Pakooma [132]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
<a href="#">Hipposideros semoni</a> Semon's Leaf-nosed Bat, Greater Wart-nosed Horseshoe-bat [180]	Vulnerable	Species or species habitat may occur within area
<a href="#">Isoodon auratus auratus</a> Golden Bandicoot (mainland) [66665]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Mesembriomys gouldii gouldii</a> Black-footed Tree-rat (Kimberley and mainland Northern Territory), Djintamoonga, Manbul [87618]	Endangered	Species or species habitat likely to occur within area
<a href="#">Mesembriomys gouldii melvillensis</a> Black-footed Tree-rat (Melville Island) [87619]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Mesembriomys gouldii rattoides</a> Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
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[Notomys aquilo](#)  
 Northern Hopping-mouse, Woorentinta    Endangered    Species or species habitat may occur within area [123]

[Petrogale concinna canescens](#)  
 Nabarlek (Top End) [87606]    Endangered    Species or species habitat may occur within area

[Phascogale pirata](#)  
 Northern Brush-tailed Phascogale    Vulnerable    Species or species habitat likely to occur within area [82954]

[Rhinolophus robertsi](#)  
 Large-eared Horseshoe Bat, Greater    Vulnerable    Species or species habitat may occur within area  
 Large-eared Horseshoe Bat [87639]

[Saccolaimus saccolaimus nudicluniatus](#)  
 Bare-rumped Sheath-tailed Bat, Bare-rumped Sheathtail Bat [66889]    Vulnerable    Species or species habitat likely to occur within area

[Sminthopsis butleri](#)  
 Butler's Dunnart [302]    Vulnerable    Species or species habitat known to occur within area

[Trichosurus vulpecula arnhemensis](#)  
 Northern Brushtail Possum [83091]    Vulnerable    Species or species habitat known to occur within area

[Xeromys myoides](#)  
 Water Mouse, False Water Rat, Yirrkoo    Vulnerable    Species or species habitat known to occur within area [66]

PLANT

[Bruguiera x hainesii](#)  
 Haines's Orange Mangrove [91351]    Critically Endangered    Species or species habitat may occur within area

[Burmannia championii listed as Burmannia sp. Bathurst Island \(R.Fensham 1021\)](#)  
 [93461]    Endangered (listed as    Species or species habitat likely to occur within  
 Burmannia sp. Bathurst Island    area

[Calophyllum bicolor](#)  
 [11371]    Vulnerable    Species or species habitat may occur within area

within area

Scientific Name	Threatened Category	Presence Text
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[Dendrobium bigibbum](#)  
Cooktown Orchid [10306]

Vulnerable

Species or species habitat likely to occur within area

[Dendrobium carronii listed as Cepobaculum carronii](#)  
an orchid [10822]

Vulnerable

Species or species habitat likely to occur within area

[Dendrobium johannis](#)  
Chocolate Tea Tree Orchid [13585]

Vulnerable

Species or species habitat likely to occur within area

[Elaeocarpus miegei](#)  
[65147]

Endangered

Species or species habitat may occur within area

[Tarennoidea wallichii](#)  
[65173]

Endangered

Species or species habitat likely to occur within area

[Typhonium jonesii](#)  
a herb [62412]

Endangered

Species or species habitat likely to occur within area

[Typhonium mirabile](#)  
a herb [79227]

Endangered

Species or species habitat likely to occur within area

[Vappodes phalaenopsis](#)  
Cooktown Orchid [78894]

Vulnerable

Species or species habitat likely to occur within area

[Xylopia monosperma](#)  
a shrub [82030]

Endangered

Species or species habitat likely to occur within area

REPTILE

[Acanthophis hawkei](#)  
Plains Death Adder [83821]

Vulnerable

Species or species habitat likely to occur within area

[Aipysurus apraefrontalis](#)  
Short-nosed Sea Snake, Short-nosed Seasnake [1115]

Critically Endangered

Species or species habitat likely to occur within area

within area



Scientific Name	Threatened Category	Presence Text
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[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 gurrmul](#)

Arafura Snake-eyed Skink [83106] Endangered    Species or species habitat known to occur within area

[Dermochelys coriacea](#)

Leatherback Turtle, Leathery Turtle, LuthEndangered    Congregation or aggregation known to occur within area [1768]

[Egernia rugosa](#)

Yakka Skink [1420] Vulnerable    Species or species habitat may occur within area

[Elseya lavarackorum](#)

Gulf Snapping Turtle [67197] Endangered    Species or species habitat may occur within area

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766] Vulnerable    Breeding known to occur within area

[Lepidochelys olivacea](#)

Olive Ridley Turtle, Pacific Ridley Turtle Endangered    Breeding known to occur within area [1767]

[Natator depressus](#)

Flatback Turtle [59257] Vulnerable    Breeding known to occur within area

[Tiliqua scincoides intermedia](#)

Northern Blue-tongued Skink [89838] Critically Endangered    Species or species habitat likely to occur within area

[Varanus mertensi](#)

Mertens' Water Monitor, Mertens's Water Monitor [1568] Endangered    Species or species habitat likely to occur within area

[Varanus mitchelli](#)

Mitchell's Water Monitor [1569] Critically Endangered    Species or species habitat likely to occur within area

SHARK

Scientific Name	Threatened Category	Presence Text
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
<a href="#">Glyphis garricki</a> Northern River Shark, New Guinea River Shark [82454]	Endangered	Species or species habitat known to occur within area
<a href="#">Glyphis glyphis</a> Speartooth Shark [82453]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267] Dependent	Conservation Dependent	Species or species habitat known to occur within area

Listed Migratory Species	<a href="#">[ Resource Information ]</a>	
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		

<a href="#">Anous stolidus</a> Common Noddy [825]	Foraging, feeding or related behaviour known to occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Calonectris leucomelas](#)

Streaked Shearwater [1077]    Species or species habitat 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

[Onychoprion anaethetus](#)

Bridled Tern [82845]    Breeding known to occur within area

[Phaethon lepturus](#)

White-tailed Tropicbird [1014]    Species or species habitat may occur within area

[Sterna dougallii](#)

Roseate Tern [817]    Breeding known to occur within area

[Sterna sumatrana](#)

Black-naped Tern [800]    Breeding known 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

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

Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Isurus paucus</a> Longfin Mako [82947]		Species or species habitat likely to occur within area
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding known to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Species or species habitat likely to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat likely to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]		Species or species habitat known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Rhincodon typus](#)

Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
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[Sousa sahalensis as Sousa chinensis](#)

Australian Humpback Dolphin [87942]	Breeding known to occur within area
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[Tursiops aduncus \(Arafura/Timor Sea populations\)](#)

Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]	Species or species habitat known to occur within area
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Migratory Terrestrial Species [Cecropis daurica](#)

Red-rumped Swallow [80610]	Species or species habitat known to occur within area
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[Cuculus optatus](#)

Oriental Cuckoo, Horsfield's Cuckoo [86651]	Species or species habitat may occur within area
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[Hirundapus caudacutus](#)

White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area
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[Hirundo rustica](#)

Barn Swallow [662]	Species or species habitat may occur within area
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[Monarcha melanopsis](#)

Black-faced Monarch [609]	Species or species habitat may occur within area
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[Motacilla cinerea](#)

Grey Wagtail [642]	Species or species habitat may occur within area
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[Motacilla flava](#)

Yellow Wagtail [644]	Species or species habitat likely to occur within area
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[Myiagra cyanoleuca](#)

Satin Flycatcher [612]	Species or species habitat likely to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat likely to occur within area
<a href="#">Symposiachrus trivirgatus as Monarcha trivirgatus</a>		
Spectacled Monarch [83946]		Species or species habitat known to occur within area
Migratory Wetlands Species		
<a href="#">Acrocephalus orientalis</a> Oriental Reed-Warbler [59570]		Species or species habitat may occur within area
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat likely to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Roosting may occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Roosting may occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area
<a href="#">Numenius madagascariensis</a> Curlew, Far Eastern Curlew [847]	Eastern Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]	Vulnerable	Roosting known to occur within area
<a href="#">Thalasseus bergii</a> Greater Crested Tern [83000]		Breeding known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]	Vulnerable	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	
Attorney-General - Australian Government Solicitor		
Commonwealth Land - Australian Government Solicitor [70332]	NT	
Defence	Defence - MT GOODWIN RADAR SITE [70063]	NT
Defence - QUAIL ISLAND BOMBING RANGE [70003] NT		

Commonwealth Land Name	State
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Defence - RIMBIJA ISLAND RAAF RADIO BEACON [70074]NT

Unknown

Commonwealth Land - [71140]NT

Commonwealth Land - [70995]NT

Listed Marine Species	[ <u>Resource Information</u> ]
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Scientific Name	Threatened Category	Presence Text
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Bird

[Acrocephalus orientalis](#)

Oriental Reed-Warbler [59570]Species or species habitat may 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]Foraging, feeding or related behaviour 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

[Arenaria interpres](#)

Ruddy Turnstone [872]VulnerableRoosting 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]VulnerableRoosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area overfly marine area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Cecropis daurica as Hirundo daurica</a> Red-rumped Swallow [80610]		Species or species habitat known to occur within area overfly marine area
<a href="#">Chalcites osculans as Chrysococcyx osculans</a> Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Roosting known to occur within area
overfly marine area		
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]	Roosting may occur within area	overfly marine area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Breeding known to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Breeding known to occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]	Roosting likely to occur within area	overfly marine area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]	Roosting likely to occur within area	overfly marine area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]	Roosting may occur within area	overfly marine area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]	Species or species habitat known to occur within area	
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]	Roosting known to occur within area	overfly marine area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat may occur within area overfly
		marine area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area overfly marine area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
<a href="#">Limnodromus semipalmatus</a> Asian Dowitcher [843]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Numenius madagascariensis</a>		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area

<a href="#">Numenius minutus</a>		
Little Curlew, Little Whimbrel [848]		Roosting known to occur within area overfly marine area

<a href="#">Numenius phaeopus</a>		
Whimbrel [849]		Roosting known to occur within area

<a href="#">Onychoprion anaethetus as Sterna anaethetus</a>		
Bridled Tern [82845]		Breeding known to occur within area

<a href="#">Pandion haliaetus</a>		
Osprey [952]		Species or species habitat known to occur within area

<a href="#">Phaethon lepturus</a>		
White-tailed Tropicbird [1014]		Species or species habitat may occur within area

<a href="#">Pluvialis fulva</a>		
Pacific Golden Plover [25545]		Roosting known to occur within area

<a href="#">Pluvialis squatarola</a>		
Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area

<a href="#">Recurvirostra novaehollandiae</a>		
Red-necked Avocet [871]		Roosting known to occur within area overfly marine area

<a href="#">Rhipidura rufifrons</a>		
Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area

<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a>		
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area

<a href="#">Sterna dougallii</a>		
Roseate Tern [817]		Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Sterna sumatrana</a> Black-naped Tern [800]	Breeding known to occur within area	
<a href="#">Sternula albifrons</a> as <a href="#">Sterna albifrons</a> Little Tern [82849]	Breeding known to occur within area	
<a href="#">Stiltia isabella</a> Australian Pratincole [818]	Roosting known to occur within area	overfly marine area
<a href="#">Sula leucogaster</a> Brown Booby [1022]	Breeding known to occur within area	
<a href="#">Symposiachrus trivirgatus</a> as <a href="#">Monarcha trivirgatus</a> Spectacled Monarch [83946]	Species or species habitat known to occur within area	overfly marine area
<a href="#">Thalasseus bengalensis</a> as <a href="#">Sterna bengalensis</a> Lesser Crested Tern [66546]	Breeding known to occur within area	
<a href="#">Thalasseus bergii</a> as <a href="#">Sterna bergii</a> Greater Crested Tern [83000]	Breeding known to occur within area	
<a href="#">Tringa brevipes</a> as <a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [851]	Roosting known to occur within area	
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area
<b>Fish</b> <a href="#">Acentronura tentaculata</a> Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[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



Scientific Name	Threatened Category	Presence Text
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[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

[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 spinirostris](#)

Spiny-snout Pipefish [66225]    Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Haliichthys taeniophorus</a> Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
<a href="#">Hippichthys cyanospilos</a> Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
<a href="#">Hippichthys heptagonus</a> Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
<a href="#">Hippichthys parvicarinatus</a> Short-keel Pipefish, Short-keeled Pipefish [66230]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippichthys spicifer</a> Belly-barred Pipefish, Banded Freshwater Pipefish [66232]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]	Species or species habitat may occur within area	
<a href="#">Hippocampus spinosissimus</a> Hedgehog Seahorse [66239]	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
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[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

[Micrognathus brevirostris](#)  
 thortail 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

Mammal

Scientific Name	Threatened Category	Presence Text
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[Dugong dugon](#)

Dugong [28]     Species or species habitat known to occur within area

**Reptile**    [Aipysurus apraefrontalis](#)

Short-nosed Sea Snake, Short-nosed Seasnake [1115]     Critically Endangered     Species or species habitat likely to occur within area

[Aipysurus duboisii](#)

Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]     Species or species habitat may occur within area

[Aipysurus laevis](#)

Olive Sea Snake, Olive-brown Sea Snake [1120]     Species or species habitat may occur within area

[Aipysurus mosaicus](#) as [Aipysurus eydouxii](#)

Mosaic Sea Snake [87261]     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 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, LuthEndangered     Congregation or aggregation known to occur within area [1768]

[Emydocephalus annulatus](#) Eastern

Turtle-headed Sea Snake [1125]     Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Hydrelaps darwiniensis</a> Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
<a href="#">Hydrophis atriceps</a> Black-headed Sea Snake [1101]	Species or species habitat may occur within area	
<a href="#">Hydrophis caeruleus</a> Dwarf Sea Snake [1103]	Species or species habitat may occur within area	
<a href="#">Hydrophis coggeri</a> Cogger's Sea Snake [25925]	Species or species habitat may occur within area	
<a href="#">Hydrophis czeblukovi</a> Fine-spined Sea Snake [59233]	Species or species habitat may occur within area	
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis hardwickii as Lapemis hardwickii</a> Spine-bellied Sea Snake [93516]	Species or species habitat may occur within area	
<a href="#">Hydrophis inornatus</a> Plain Sea Snake [1107]	Species or species habitat may occur within area	
<a href="#">Hydrophis kingii as Distaira kingii</a> Spectacled Sea Snake [93511]	Species or species habitat may occur within area	
<a href="#">Hydrophis macdowelli as Hydrophis mcdowelli</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[Hydrophis major as Disteira major](#)

Olive-headed Sea Snake [93512]    Species or species habitat may occur within area

[Hydrophis melanosoma](#)

Black-banded Robust Sea Snake [1109] Species or species habitat may occur within area

[Hydrophis ornatus](#)

Spotted Sea Snake, Ornate Reef Sea Snake [1111]    Species or species habitat may occur within area

[Hydrophis pacificus](#)

Pacific Sea Snake, Large-headed Sea Snake [1112]    Species or species habitat may occur within area

[Hydrophis peronii as Acalyptophis peronii](#)

Horned Sea Snake [93509]    Species or species habitat may occur within area

[Hydrophis platura as Pelamis platurus](#)

Yellow-bellied Sea Snake [93746]    Species or species habitat may occur within area

[Hydrophis stokesii as Astrotia stokesii](#)

Stokes' Sea Snake [93510]    Species or species habitat may occur within area

[Hydrophis vorisi](#)

Estuarine Sea Snake [25927] Species or species habitat may occur within area

[Hydrophis zweiffei as Enhydrina schistosa](#)

Australian Beaked Sea Snake [93514]    Species or species habitat may occur within area

[Laticauda colubrina](#)

Yellow-lipped 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

Scientific Name	Threatened Category	Presence Text
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[Lepidochelys olivacea](#)

Olive Ridley Turtle, Pacific Ridley Turtle   Endangered   Breeding known to occur within area [1767]

[Microcephalophis gracilis as Hydrophis gracilis](#)

Graceful Small-headed Sea Snake,   Species or species habitat may occur within  
Slender Sea Snake [87375]   area

[Natator depressus](#)

Flatback Turtle [59257]   Vulnerable   Breeding known to occur within area

[Parahydrophis mertoni](#)

Arafura Smooth Sea Snake, Northern   Species or species habitat may occur within  
Mangrove Sea Snake [1090]   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 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   Species or species habitat may occur within  
Common Dolphin [60]   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
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[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

[Megaptera novaeangliae](#)

Humpback Whale [38]Species or species habitat likely 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

[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 sahulensis](#)

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



Current Scientific Name	Status	Type of Presence
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[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](#) ]

Park Name	Zone & IUCN Categories
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Limmen
 Habitat Protection Zone (IUCN IV)

Oceanic Shoals
 Habitat Protection Zone (IUCN IV)

Wessel
 Habitat Protection Zone (IUCN IV)

West Cape York
 Habitat Protection Zone (IUCN IV)

Arafura
 Multiple Use Zone (IUCN VI)

Joseph Bonaparte Gulf
 Multiple Use Zone (IUCN VI)

Oceanic Shoals
 Multiple Use Zone (IUCN VI)

Park Name	Zone & IUCN Categories
Oceanic Shoals	Multiple Use Zone (IUCN VI)
Gulf of Carpentaria	National Park Zone (IUCN II)
Oceanic Shoals	National Park Zone (IUCN II)
West Cape York	National Park Zone (IUCN II)
West Cape York	National Park Zone (IUCN II)
Arafura	Special Purpose Zone (IUCN VI)
Arnhem	Special Purpose Zone (IUCN VI)
Joseph Bonaparte Gulf	Special Purpose Zone (IUCN VI)
West Cape York	Special Purpose Zone (IUCN VI)
Arafura	Special Purpose Zone (Trawl) (IUCN VI)
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)
Gulf of Carpentaria	Special Purpose Zone (Trawl) (IUCN VI)
Oceanic Shoals	Special Purpose Zone (Trawl) (IUCN VI)
Wessel	Special Purpose Zone (Trawl) (IUCN VI)

Habitat Critical to the Survival of Marine Turtles			[ <a href="#">Resource Information</a> ]
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

[Dermochelys coriacea](#)

Leatherback Turtle [1768]        Nesting    Known to occur

May - Jul
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Scientific Name	Behaviour	Presence
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[Lepidochelys olivacea](#)

Olive Ridley Turtle [1767]Nesting    Known to occur

Nov - May

[Eretmochelys imbricata](#)

Hawksbill Turtle [1766]                      Nesting                                      Known to occur

Extra Information

State and Territory Reserves		[ <u>Resource Information</u> ]
Protected Area Name	Reserve Type	State
Anindilyakwa	Indigenous Protected Area	NT
Anindilyakwa	Indigenous Protected Area	NT
Barranyi (North Island)	National Park	NT
Crocodile Islands Maringa	Indigenous Protected Area	NT
Crocodile Islands Maringa	Indigenous Protected Area	NT
Dhimurru	Indigenous Protected Area	NT
Djelk	Indigenous Protected Area	NT
Djelk - Stage 2	Indigenous Protected Area	NT
Eight Mile Creek	Fish Habitat Area (A)	QLD
Finucane Island	National Park	QLD
Garig Gunak Barlu	Marine Park	NT
Keep River	Proposed National Parks ActNT park or park addition	
Limmen	National Park	NT
Limmen Bight	Marine Park	NT
Marthakal	Indigenous Protected Area	NT
Morning Inlet - Bynoe River	Fish Habitat Area (A)	QLD

Protected Area Name	Reserve Type	State
Nassau River Fish Habitat Area (A)	QLD	
Nijinda Durlga Indigenous Protected Area		QLD
Pine River Bay Fish Habitat Area (A)	QLD	
Pungalina - Seven Emu Private Nature Reserve	NT	
Rutland Plains Nature Refuge	QLD	
South-East Arnhem Land Indigenous Protected Area	NT	
Thuwathu/Bujimulla Indigenous Protected Area		QLD
Thuwathu/Bujimulla Indigenous Protected Area		QLD
Yanyuwa (Barni - Wardimantha Awara) Area	Indigenous Protected Area	NT

Nationally Important Wetlands		[ Resource Information ]
Wetland Name		State
<a href="#">Cobourg Peninsula System</a>	NT	
<a href="#">Finniss Floodplain and Fog Bay Systems</a>	NT	
<a href="#">Jardine River Wetlands Aggregation</a>	QLD	
<a href="#">Limmen Bight (Port Roper) Tidal Wetlands System</a>	NT	
<a href="#">Northeast Karumba Plain Aggregation</a>	QLD	
<a href="#">Southeast Karumba Plain Aggregation</a>	QLD	
<a href="#">Southern Gulf Aggregation</a>	QLD	

EPBC Act Referrals				[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status	
<a href="#">Arnhem Space Centre Operations (Down Range Recovery)</a>	2023/09657	Assessment		
<a href="#">Aurukun Bauxite Project</a>	2020/8624	Assessment		
<a href="#">Darwin Pipeline Duplication (DPD) Project</a>	2022/09372	Post-Approval		
<a href="#">Darwin Pipeline Duplication DPD Project</a>	2022/9166	Completed		

Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West</a>	2024/09826	Completed	
<a href="#">Tiwi H2 Project</a>	2022/09347	Assessment	
Controlled action			
<a href="#">Andranangoo Creek &amp; Lethbridge Bay mineral sand mining</a>	2005/2155	Controlled Action	Completed
<a href="#">Bauxite Hill Mining and Barging Project</a>	2015/7538	Controlled Action	Post-Approval
<a href="#">Bauxite Hills Mine and Port Project</a>	2012/6246	Controlled Action	Completed
<a href="#">Blacktip Project - Wharf Construction</a>	2007/3293	Controlled Action	Completed
<a href="#">Bonaparte Liquified Natural Gas Project</a>	2011/6141	Controlled Action	Post-Approval
<a href="#">Darwin to Moomba Gas Pipeline</a>	2001/213	Controlled Action	Completed
<a href="#">Development of Blacktip Gas Field</a>	2003/1180	Controlled Action	Post-Approval
<a href="#">Hardwood Plantation</a>	2001/229	Controlled Action	Post-Approval
<a href="#">Ichthys Gas Field, Offshore and onshore processing facilities and subsea pipeline</a>	2008/4208	Controlled Action	Post-Approval
<a href="#">Pisolite Hills bauxite mine and associated infrast</a>	2008/4046	Controlled Action	Completed
<a href="#">PNG-Qld Gas Pipeline - Gove Lateral</a>	2006/2615	Controlled Action	Completed
<a href="#">Roper Bar Iron Ore Mine and Transport Infrastructure</a>	2011/6079	Controlled Action	Completed
<a href="#">Shipping Channel Enhancement</a>	2010/5431	Controlled Action	Completed
<a href="#">Snake Bay Barramundi Sea Cage Farm</a>	2005/2150	Controlled Action	Completed
<a href="#">South of the Embley Bauxite Mine Extension, including Construction of Port and Infrastructure</a>	2008/4435	Controlled Action	Completed
<a href="#">South of the Embley Bauxite Mining Project</a>	2010/5642	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Tassie Shoal Gas Reforming and Methanol Production Plants - NT/P48</a>	2000/108	Controlled Action	Post-Approval
<a href="#">Tassie Shoal LNG Project</a>	2003/1067	Controlled Action	Post-Approval
<a href="#">Trans-territory Gas Pipeline</a>	2003/1186	Controlled Action	Completed
<b>Not controlled action</b>			
<a href="#">2D seismic survey, exploration permit NT/P67</a>	2004/1587	Not Action	ControlledCompleted
<a href="#">2D Seismic Survey in Permit Areas WA-318-P &amp; WA-319-P, near Cape Londonderry</a>	2004/1687	Not Action	ControlledCompleted
<a href="#">Barossa-1 (NT/P69), Caldita-2 (NT/P61) exploration wells</a>	2006/2793	Not Action	ControlledCompleted
<a href="#">Caldita-1 Hydrocarbon Exploration Well, NT/P61</a>	2004/1854	Not Action	ControlledCompleted
<a href="#">Construction and operation of Radar Infrastructure</a>	2004/1406	Not Action	ControlledCompleted
<a href="#">Cox Peninsular Remediation Project, NT</a>	2015/7587	Not Action	ControlledCompleted
<a href="#">Dredging of Weipa South Channel</a>	2003/1311	Not Action	ControlledCompleted
<a href="#">Eastern Leases 2010 Exploration Drilling Program</a>	2010/5455	Not Action	ControlledCompleted
<a href="#">Geo-scientific survey</a>	2005/2004	Not Action	ControlledCompleted
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Action	ControlledCompleted
<a href="#">Marine Survey for the Australia-ASEAN Power Link AAPL</a>	2020/8714	Not Action	ControlledCompleted
<a href="#">Nexus Drilling Program NT-P66</a>	2007/3745	Not Action	ControlledCompleted
<a href="#">NT/P68 2007 Two Well Drilling Program</a>	2007/3569	Not Action	ControlledCompleted
<b>Not controlled action (particular manner)</b>			
<a href="#">2D and 3D Seismic Survey Action (Particular Manner)</a>	2011/6197	Not Controlled	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">2D Marine Seismic Survey Action (Particular Manner)</a>	2009/4728	Not Controlled	Post-Approval
<a href="#">2D marine seismic survey of Braveheart,Kurrajong,Sunshine and Crocodile</a>	2006/2917	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic survey Manner)</a>	2009/5076	Not Controlled Action (Particular	Post-Approval
<a href="#">2D Seismic Survey, Permit Area Q23P</a>	2009/4925	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey in WA Permit Area TP/22 and Commonwealth Permit Area WA-280-P</a>	2005/2100	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey - Petroleum Exploration Area NT/P68, Eastern Bonaparte Basin</a>	2006/2922	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey Action (Particular Manner)</a>	2009/4681	Not Controlled	Post-Approval
<a href="#">3D Seismic Survey Manner)</a>	2006/2729	Not Controlled Action (Particular	Post-Approval
<a href="#">3D Seismic Survey (NT/P68) Action (Particular Manner)</a>	2006/2980	Not Controlled	Post-Approval
<a href="#">3D Seismic Survey (NT/P68) Action (Particular Manner)</a>	2008/4121	Not Controlled	Post-Approval
<a href="#">Bonaparte 2D &amp; 3D marine seismic survey</a>	2011/5962	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bonaparte 3D &amp; 2D Seismic Survey, in NT/P82, Timor Sea</a>	2012/6398	Not Controlled Action (Particular	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Bonaparte Basin Barossa Appraisal Drilling Campaign, NT</a>	2012/6481	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bonaparte Basin Seabed Mapping Survey</a>	2009/4951	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bonaparte Seismic and Bathymetric Survey</a>	2012/6295	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Caldita 3D Marine Seismic Survey - NT/P61, NT/P69, and acreage release area NT06-5</a>	2006/3142	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Dredging the outer shipping channels of Darwin Harbour</a>	2013/6988	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Eni Bathurst 3D Seismic Survey</a> Action (Particular Manner)	2011/6118	Not Controlled	Post-Approval
<a href="#">Exploration Drilling in Permit Areas WA-402-P &amp; WA-403-P</a>	2010/5297	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Joseph Bonaparte Gulf Seabed mapping survey</a>	2010/5517	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Kingtree &amp; Ironstone-1 Exploration Wells</a>	2011/5935	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Malita West 3D Seismic Survey WA-402-P and WA-403-P</a>	2007/3936	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Marine Environmental Survey 2012</a> Action (Particular Manner)	2012/6310	Not Controlled	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Nova 3D Seismic Survey</a> 2013/6825 Action (Particular Manner)	2013/6825	Not Controlled	Post-Approval
<a href="#">NT/P74 &amp; NT/P75 - 2D marine seismic survey</a>	2008/4316	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">NT/P77 3D Marine Seismic Survey</a> 2009/4683 Action (Particular Manner)	2009/4683	Not Controlled	Post-Approval
<a href="#">NT/P80 2010 2D Marine Seismic Survey</a>	2010/5487	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Fibre Optic Cable Network Construction &amp; Operation, Port Hedland WA to Darwin NT</a>	2014/7223	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Panda NT/P76 3D Seismic Acquisition Survey Program</a>	2009/4992	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Petrel MC2D Marine Seismic Survey</a> 2010/5368 Action (Particular Manner)	2010/5368	Not Controlled	Post-Approval
<a href="#">Removal of Potential Unexploded Ordnance within NAXA</a>	2012/6503	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Santos Petrel-7 Offshore Appraisal Drilling Programme (Bonaparte Basin)</a>	2011/5934	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Sonar and Acoustic Trials</a> 2001/345 (Particular Manner)	2001/345	Not Controlled	Action Post-Approval
<a href="#">Sunshine Infill 2D and Mimosa 2D Marine Seismic Surveys</a>	2009/4699	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Two dimensional (2d) seismic survey in Gulf of Carpentaria</a>	2013/6991	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)		Manner)	
<a href="#">Westralia SPAN Marine Seismic Survey, WA &amp; NT</a>	2012/6463	Not Action Manner)	ControlledPost-Approval (Particular

Referral decision			
<a href="#">2D Marine Seismic Survey</a>	2008/4623	Referral Decision	Completed
<a href="#">3D Seismic Survey (NT/P68)</a>	2006/2949	Referral Decision	Completed
<a href="#">Capital Dredging Weipa South</a>	2003/1302	<a href="#">Channel</a>	Referral Decision Completed
<a href="#">Groote Eylandt Offshore Marine Surveys</a>	2010/5643	Referral Decision	Completed
<a href="#">Nova 3D Seismic Survey, WA 442-NT/P81, Joseph Bonaparte Gulf</a>	2013/6820	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
<a href="#">Carbonate bank and terrace system of the Sahul Shelf</a>	North-west
<a href="#">Carbonate bank and terrace system of the Van Diemen Rise</a>	North
<a href="#">Gulf of Carpentaria basin</a>	North
<a href="#">Gulf of Carpentaria coastal zone</a>	North
<a href="#">Pinnacles of the Bonaparte Basin</a>	North-west
<a href="#">Pinnacles of the Bonaparte Basin</a>	North
<a href="#">Plateaux and saddle north-west of the Wellesley Islands</a>	North
<a href="#">Shelf break and slope of the Arafura Shelf</a>	North
<a href="#">Submerged coral reefs of the Gulf of Carpentaria</a>	North
<a href="#">Tributary Canyons of the Arafura Depression</a>	North

Biologically Important Areas

[ [Resource Information](#) ]

Scientific Name	Behaviour	Presence
Dolphins		
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]	Breeding	Known to occur
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]	Foraging	Likely to occur
<a href="#">Tursiops aduncus</a> Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur
Marine Turtles <a href="#">Caretta caretta</a> Loggerhead Turtle [1763]Foraging		Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765] Foraging		Likely to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765] Foraging		Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765] Internesting		Likely to occur
<a href="#">Dermochelys coriacea</a> Leatherback Turtle [1768]	Internesting	Likely to occur
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Internesting	Likely to occur
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle [1767]Foraging		Likely to occur
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle [1767]Foraging		Known to occur
<a href="#">Lepidochelys olivacea</a> Olive Ridley Turtle [1767]Internesting		Likely to occur
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Foraging	Known to occur
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Internesting	Likely to occur
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Internesting buffer	Known to occur

## Seabirds

Scientific Name	Behaviour	Presence
<a href="#">Anous stolidus</a> Common Noddy [825]	Breeding	Known to occur
<a href="#">Fregata ariel</a> Lesser Frigatebird [1012]	Breeding	Known to occur
<a href="#">Fregata ariel</a> Lesser Frigatebird [1012]	Foraging	Likely to occur
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]	Breeding	Known to occur
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]	Breeding (high numbers)	Known to occur
<a href="#">Sterna dougallii</a> Roseate Tern [817]	Breeding	Known to occur
<a href="#">Sterna dougallii</a> Roseate Tern [817]	Breeding (high numbers)	Known to occur
<a href="#">Sula leucogaster</a> Brown Booby [1022]	Breeding	Known to occur
<a href="#">Thalasseus bengalensis</a> Lesser Crested Tern [66546]	Breeding	Known to occur
<a href="#">Thalasseus bergii</a> Crested Tern [83000]	Breeding	Known to occur
<a href="#">Thalasseus bergii</a> Crested Tern [83000]	Breeding (high numbers)	Known to occur

Caveat

## 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.

## 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

## 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

## 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: 10-Jun-2024 [Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#) [Extra Information](#)

[Caveat](#) [Acknowledgements](#)

Figure 1: SWMR PMST sub area 1 (labelled '2')





# 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](#).

<a href="#">World Heritage Properties:</a>	1
<a href="#">National Heritage Places:</a>	3
<a href="#">Wetlands of International Importance (Ramsar</a>	6
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	3
<a href="#">Listed Threatened Ecological Communities:</a>	9
<a href="#">Listed Threatened Species:</a>	141
<a href="#">Listed Migratory Species:</a>	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 <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.

<a href="#">Commonwealth Lands:</a>	240
<a href="#">Commonwealth Heritage Places:</a>	4
<a href="#">Listed Marine Species:</a>	123
<a href="#">Whales and Other Cetaceans:</a>	39
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	29
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

**Extra Information**

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	63
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Nationally Important Wetlands:</a>	5
<a href="#">EPBC Act Referrals:</a>	131
<a href="#">Key Ecological Features (Marine):</a>	11
<a href="#">Biologically Important Areas:</a>	33
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

Matters of National Environmental Significance

World Heritage Properties			[ Resource Information ]
Name	State	Legal Status	
<a href="#">Australian Convict Sites (Fremantle Prison)</a>	WA	Declared property	

National Heritage Places			[ Resource Information ]
Name	State	Legal Status	
Historic			
<a href="#">Fremantle Prison (former)</a>	WA	Listed place	
Indigenous			
<a href="#">Cheetup Rock Shelter</a>	WA	Listed place	
Natural			
<a href="#">Fitzgerald River National Park</a>	WA	Listed place	

Wetlands of International Importance (RamsarWetlands)		[ Resource Information ]
Ramsar Site Name		Proximity
<a href="#">Becher point wetlands</a>		Within Ramsar site
<a href="#">Forrestdale and thomsons lakes</a>		Within 10km of Ramsar site
<a href="#">Lake gore</a>		Within Ramsar site
<a href="#">Lake warden system</a>		Within 10km of Ramsar site
<a href="#">Peel-yalgorup system</a>		Within Ramsar site
<a href="#">Vasse-wonnerup system</a>		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)	Commonwealth Marine Areas (EPBC Act)
Commonwealth Marine Areas (EPBC Act)	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
<a href="#">Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge</a>	Endangered	Community known to occur within area
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Empodisma peatlands of southwestern Australia</a>	Endangered	Community likely to occur within area
<a href="#">Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion</a>	Critically Endangered	Community likely to occur within area
<a href="#">Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia</a>	Endangered	Community likely to occur within area
<a href="#">Sedgeland in Holocene dune swales of the southern Swan Coastal Plain</a>	Endangered	Community known to occur within area
<a href="#">Subtropical and Temperate Coastal Saltmarsh</a>	Vulnerable	Community likely to occur within area
<a href="#">Thrombolite (microbial) community of coastal freshwater lakes of the Swan Coastal Plain (Lake Richmond)</a>	Endangered	Community known to occur within area
<a href="#">Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community</a>	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		
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Aphelocephala leucopsis</a> Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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<a href="#">Ardenna grisea</a> Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
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<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
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<a href="#">Atrichornis clamosus</a> Noisy Scrub-bird, Tjimiluk [654]	Endangered	Species or species habitat known to occur within area
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<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
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<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
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<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
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<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area
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<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Cereopsis novaehollandiae grisea</a> Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding known to occur within area
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<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
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<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Dasyornis longirostris</a> Western Bristlebird [515]	Endangered	Species or species habitat known to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a> Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Limosa limosa](#)

Black-tailed Godwit [845] Endangered      Roosting known to occur within area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant      Endangered      Species or species habitat may occur within area  
Petrel [1060]

[Macronectes halli](#)

Northern Giant Petrel [1061]      Vulnerable      Foraging, feeding or related behaviour 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

[Pezoporus flaviventris](#)

Western Ground Parrot, Kyloring [84650] Critically Endangered      Species or species habitat may occur within area

[Phaethon rubricauda westralis](#)

Red-tailed Tropicbird (Indian Ocean),      Endangered      Species or species habitat known to occur within area  
Indian Ocean Red-tailed Tropicbird  
[91824]

[Phoebetria fusca](#)

Sooty Albatross [1075]      Vulnerable      Species or species habitat likely to occur within area

[Pluvialis squatarola](#)

Grey Plover [865]      Vulnerable      Roosting known to occur within area

[Psophodes nigrogularis nigrogularis](#)

Western Heath Whipbird [64449]      Endangered      Species or species habitat 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
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[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
 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 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
 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

[Tringa nebularia](#)

Common Greenshank, Greenshank [832]
 Endangered
 Species or species habitat known to occur within area

[Xenus cinereus](#)

Terek Sandpiper [59300]
 Vulnerable
 Roosting known 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

Scientific Name	Threatened Category	Presence Text
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[Zanda latirostris listed as Calyptorhynchus latirostris](#)

Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area
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CRUSTACEAN

[Engaewa pseudoreducta](#)

Margaret River Burrowing Crayfish [82674]	Critically Endangered	Species or species habitat may occur within area
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[Engaewa reducta](#)

Dunsborough Burrowing Crayfish [82675]	Critically Endangered	Species or species habitat may occur within area
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FISH

[Galaxias truttaceus \(Western Australian population\)](#)

Western Trout Minnow [89857]	Endangered	Species or species habitat known to occur within area
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[Galaxiella nigrostriata](#)

Blackstriped Dwarf Galaxias, stripe Minnow [88677]	Black-Endangered	Species or species habitat known to occur within area
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[Hoplostethus atlanticus](#)

Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
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[Nannatherina balstoni](#)

Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat known to occur within area
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[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat known to occur within area
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INSECT

[Hesperocolletes douglasi](#)

Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
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[Trioza barrettae](#)

Banksia brownii plant louse [87805]	Endangered	Species or species habitat known to occur within area
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MAMMAL



Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Bettongia penicillata ogilbyi</a> Woylie [66844]	Endangered	Species or species habitat known to occur within area
<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area
<a href="#">Myrmecobius fasciatus</a> Numbat [294]	Endangered	Species or species habitat may occur within area
<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
<a href="#">Parantechinus apicalis</a> Dibbler [313]	Endangered	Species or species habitat known to occur within area
<a href="#">Petrogale lateralis hacketti</a> Recherche Rock-wallaby [66849]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Petrogale lateralis lateralis](#)  
 Black-flanked Rock-wallaby, Moororong, Endangered      Translocated population known to occur within area  
 Black-footed Rock Wallaby [66647]

[Phascogale calura](#)  
 Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]      Vulnerable      Species or species habitat may occur within area

[Potorous gilbertii](#)  
 Gilbert's Potoroo, Ngilkat [66642]      Critically Endangered      Species or species habitat known to occur within area

[Pseudocheirus occidentalis](#) Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]      Critically Endangered      Breeding known to occur within area

[Pseudomys shortridgei](#)  
 Heath Mouse, Dayang, Heath Rat [77]      Endangered      Species or species habitat likely to occur within area

[Setonix brachyurus](#)  
 Quokka [229]      Vulnerable      Species or species habitat known to occur within area

OTHER

[Westralunio carteri](#)  
 Carter's Freshwater Mussel, Freshwater Mussel [86266]      Vulnerable      Species or species habitat known to occur within area

PLANT

[Adenanthos dobagii](#)  
 Fitzgerald Woollybush [21253]Endangered      Species or species habitat likely to occur within area

[Adenanthos ellipticus](#)  
 Oval-leaf Adenanthos [4570]      Vulnerable      Species or species habitat likely to occur within area

[Andersonia gracilis](#)  
 Slender Andersonia [14470]      Endangered      Species or species habitat may occur within area

[Andersonia pinaster](#)  
 Two Peoples Bay Andersonia [67444]      Vulnerable      Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[Anigozanthos bicolor subsp. minor](#)  
 Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw [21241]

Endangered
 Species or species habitat likely to occur within area

[Banksia brownii](#)  
 Brown's Banksia, Feather-leaved Banksia [8277]

Critically Endangered
 Species or species habitat known to occur within area

[Banksia nivea subsp. uliginosa](#)  
 Swamp Honeypot [82766]

Endangered
 Species or species habitat may occur within area

[Banksia squarrosa subsp. argillacea](#)  
 Whicher Range Dryandra [82769]

Vulnerable
 Species or species habitat likely to occur within area

[Banksia verticillata](#)  
 Granite Banksia, Albany Banksia, River Banksia [8333]

Vulnerable
 Species or species habitat known to occur within area

[Boronia clavata](#)  
 Bremer Boronia [5538]

Endangered
 Species or species habitat may occur within area

[Brachyscias verecundus](#)  
 Ironstone Brachyscias [81321]

Critically Endangered
 Species or species habitat may occur within area

[Caladenia busselliana](#)  
 Bussell's Spider-orchid [24369]

Endangered
 Species or species habitat likely to occur within area

[Caladenia caesarea subsp. maritima](#)  
 Cape Spider-orchid [64856]

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 granitora](#)  
 [65292]

Endangered
 Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Caladenia harringtoniae](#)  
Harrington's Spider-orchid, Pink Spider-orchid [56786]

Vulnerable

Species or species habitat may occur within area

[Caladenia huegelii](#)  
King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]

Endangered

Species or species habitat known to occur within area

[Caladenia lodgeana](#)  
Lodge's Spider-orchid [68664]

Critically Endangered

Species or species habitat likely to occur within area

[Caladenia procera](#)  
Carbunup King Spider Orchid [68679]

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

[Calectasia cyanea](#)  
Blue Tinsel Lily [7669]

Critically Endangered

Species or species habitat likely to occur within area

[Chamelaucium lullfitzii listed as Chamelaucium sp. Gingin \(N.G.Marchant 6\)](#)  
Gingin Wax [92777] Gingin

Endangered (listed as Chamelaucium sp. Gingin)

Species or species habitat likely to occur within area

[Chamelaucium sp. S coastal plain \(R.D.Royce 4872\)](#)  
Royce's Waxflower [87814]

Vulnerable

Species or species habitat likely to occur within area

[Chordifex abortivus](#)  
Manypeaks Rush [64868]

Endangered

Species or species habitat likely to occur within area

[Commersonia apella](#)  
Many-flowered Commersonia [86877]

Critically Endangered

Species or species habitat known to occur within area

[Coopernookia georgei](#)  
Mauve Coopernookia [21218]

Endangered

Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Daviesia obovata</a> Paddle-leaf Daviesia [17311]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diuris drummondii</a> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diuris micrantha</a> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Diuris purdiei</a> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
<a href="#">Drakaea elastica</a> Glossy-leafed Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
<a href="#">Drakaea micrantha</a> Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Eucalyptus argutifolia</a> Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat may occur within area
<a href="#">Eucalyptus insularis</a> Twin Peak Island Mallee [3057]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eucalyptus x phylacis</a> Meelup Mallee [87817]	Endangered	Species or species habitat known to occur within area
<a href="#">Gastrolobium papilio</a> Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
<a href="#">Grevillea elongata</a> Ironstone Grevillea [64578]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Grevillea infundibularis</a> Fan-leaf Grevillea [5772]	Endangered	Species or species habitat likely to occur within area
<a href="#">Isopogon uncinatus</a> Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat likely to occur within area
<a href="#">Kennedia glabrata</a> Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lambertia echinata subsp. echinata</a> Prickly Honeysuckle [56729]	Endangered	Species or species habitat known to occur within area
<a href="#">Lambertia echinata subsp. occidentalis</a> Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within area
<a href="#">Morelotia australiensis listed as Tetraria australiensis</a> Southern Tetraria [92784]	Vulnerable	Species or species habitat may occur within area
<a href="#">Petrophile latericola</a> Laterite Petrophile [64532]	Endangered	Species or species habitat may occur within area
<a href="#">Phaius australis</a> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
<a href="#">Reedia spathacea</a> Reedia [2995]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Ricinocarpos trichophorus</a> Barrens Wedding Bush [19931]	Endangered	Species or species habitat may occur within area
<a href="#">Sphenotoma drummondii</a> Mountain Paper-heath [21160]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Stylidium galioides</a> Yellow Mountain Triggerplant [4666]	Vulnerable	Species or species habitat may occur within area
<a href="#">Synaphea sp. Fairbridge Farm (D.Papenfus 696)</a> Selena's Synaphea [82881]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Verticordia crebra</a> [55678]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Verticordia densiflora var. pedunculata</a> Long-stalked Featherflower [55689]	Endangered	Species or species habitat may occur within area
<a href="#">Verticordia plumosa var. ananeotes</a> Tufted Plumed Featherflower [23871]	Endangered	Species or species habitat may occur within area
<a href="#">Verticordia plumosa var. vassensis</a> Vasse Featherflower [55804]	Endangered	Species or species habitat may occur within area
<a href="#">Wurmbea calcicola</a> Naturaliste Nancy [64691]	Endangered	Species or species habitat known to occur within area

REPTILE

<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

SHARK

<a href="#">Carcharias taurus (west coast population)</a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation known to occur within area
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<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
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<a href="#">Centrophorus uyato</a> Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
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<a href="#">Galeorhinus galeus</a> School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
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<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
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<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
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<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area
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Listed Migratory Species

[ Resource Information ]

Scientific Name	Threatened Category	Presence Text
<a href="#">Migratory Marine Birds</a> Common Noddy [825]	<a href="#">Anous stolidus</a> Species or species habitat likely to occur within area	

<a href="#">Apus pacificus</a> Fork-tailed Swift [678]	Species or species habitat likely to occur within area	
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Scientific Name	Threatened Category	Presence Text
<a href="#">Ardena carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
<a href="#">Ardena grisea</a> Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
<a href="#">Ardena pacifica</a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#">Ardena tenuirostris</a> Short-tailed Shearwater [82652]		Breeding known to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a> Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]	Breeding known to occur within area	
<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]	Breeding known to occur within area	
<a href="#">Phoebastria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]	Breeding known to occur within area	
<a href="#">Sternula albifrons</a> Little Tern [82849]	Species or species habitat may occur within area	
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche chrysostoma</a> Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Thalassarche steady](#)

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      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      Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Eubalaena australis as Balaena glacialis australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]		Species or species habitat likely to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat known to occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calidris pugnax</a> as <a href="#">Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]	Roosting known to occur within area	
<a href="#">Calidris subminuta</a> Long-toed Stint [861]	Roosting known to occur within area	
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]	Roosting known to occur within area	
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]	Roosting likely to occur within area	
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]	Roosting likely to occur within area	
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]	Species or species habitat known to occur within area	
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]	Roosting known to occur within area	
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]	Species or species habitat known to occur within area	
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Roosting known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]	Vulnerable	Roosting known to occur within area
<a href="#">Thalasseus bergii</a> Greater Crested Tern [83000]		Breeding known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Xenus cinereus</a>		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands	<a href="#">[ Resource Information ]</a>
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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 - ARTILLERY BARRACKS - FREMANTLE [50155] WA    Defence    -    CAMPBELL    BARRACKS    - SWANBOURNE [50183] WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50184]        WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50186]        WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50185]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50181]        WA    Defence    -    CAMPBELL BARRACKS - SWANBOURNE [50187]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50182] WA

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50117]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50133]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50134]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50132]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50131]

Defence - ROCKINGHAM - NAVY CPSO [50135]    WA

Defence - SWANBOURNE RIFLE RANGE [50188]WA



Commonwealth Land Name		State
Defence - SWANBOURNE RIFLE RANGE [50191]		WA
Unknown		
Commonwealth Land - [50504]	WA	
Commonwealth Land - [50503]	WA	
Commonwealth Land - [50507]	WA	
Commonwealth Land - [50506]	WA	
Commonwealth Land - [50495]	WA	
Commonwealth Land - [50505]	WA	
Commonwealth Land - [50425]	WA	
Commonwealth Land - [50473]	WA	
Commonwealth Land - [50424]	WA	
Commonwealth Land - [50493]	WA	
Commonwealth Land - [50567]	WA	
Commonwealth Land - [50633]	WA	
Commonwealth Land - [50566]	WA	
Commonwealth Land - [50483]	WA	
Commonwealth Land - [50467]	WA	
Commonwealth Land - [50487]	WA	
Commonwealth Land - [50551]	WA	
Commonwealth Land - [50558]	WA	
Commonwealth Land - [50431]	WA	
Commonwealth Land - [50550]	WA	
Commonwealth Land - [50518]	WA	
Commonwealth Land - [50437]	WA	
Commonwealth Land - [50422]	WA	
Commonwealth Land - [51437]	WA	
Commonwealth Land - [50579]	WA	

Commonwealth Land Name		State
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Commonwealth Land - [51480]	WA	
Commonwealth Land - [50470]	WA	
Commonwealth Land - [51436]	WA	
Commonwealth Land - [50478]	WA	
Commonwealth Land - [50510]	WA	
Commonwealth Land - [50511]	WA	
Commonwealth Land - [50605]	WA	
Commonwealth Land - [50516]	WA	
Commonwealth Land - [50638]	WA	
Commonwealth Land - [50412]	WA	
Commonwealth Land - [50517]	WA	
Commonwealth Land - [50496]	WA	
Commonwealth Land - [50501]	WA	
Commonwealth Land - [50498]	WA	
Commonwealth Land - [50419]	WA	
Commonwealth Land - [50418]	WA	
Commonwealth Land - [50629]	WA	
Commonwealth Land - [50624]	WA	
Commonwealth Land - [50608]	WA	
Commonwealth Land - [50573]	WA	
Commonwealth Land - [50628]	WA	
Commonwealth Land - [50485]	WA	
Commonwealth Land - [51889]	WA	
Commonwealth Land - [50446]	WA	
Commonwealth Land - [50500]	WA	
Commonwealth Land - [50486]	WA	

Commonwealth Land Name		State
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Commonwealth Land - [50456]	WA	
Commonwealth Land - [50457]	WA	
Commonwealth Land - [52281]	WA	
Commonwealth Land - [50455]	WA	
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Commonwealth Land - [50529]	WA	
Commonwealth Land - [50527]	WA	
Commonwealth Land - [50525]	WA	
Commonwealth Land - [50571]	WA	
Commonwealth Land - [50570]	WA	
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Commonwealth Land - [51890]	WA	
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Commonwealth Land - [50451]	WA	
Commonwealth Land - [50454]	WA	
Commonwealth Land - [50589]	WA	
Commonwealth Land - [50639]	WA	
Commonwealth Land - [50464]	WA	

Commonwealth Land Name		State
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Commonwealth Land - [50632]	WA	
Commonwealth Land - [50634]	WA	
Commonwealth Land - [51487]	WA	
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Commonwealth Land - [50389]	WA	
Commonwealth Land - [50438]	WA	
Commonwealth Land - [50388]	WA	
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Commonwealth Land - [50447]	WA	
Commonwealth Land - [52119]	WA	
Commonwealth Land - [50524]	WA	
Commonwealth Land - [50484]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50523]		WA
Commonwealth Land - [50387]	WA	
Commonwealth Land - [50434]	WA	
Commonwealth Land - [50433]	WA	
Commonwealth Land - [50536]	WA	
Commonwealth Land - [51987]	WA	
Commonwealth Land - [50432]	WA	
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Commonwealth Land - [50465]	WA	
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Commonwealth Land - [51117]	WA	
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Commonwealth Land - [50404]	WA	
Commonwealth Land - [50610]	WA	
Commonwealth Land - [50619]	WA	
Commonwealth Land - [50612]	WA	
Commonwealth Land - [50611]	WA	
Commonwealth Land - [50615]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50614]		WA
Commonwealth Land - [50568]	WA	
Commonwealth Land - [51892]	WA	
Commonwealth Land - [51891]	WA	
Commonwealth Land - [51894]	WA	
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Commonwealth Land - [50534]	WA	
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Commonwealth Land - [50497]	WA	
Commonwealth Land - [50453]	WA	
Commonwealth Land - [50637]	WA	
Commonwealth Land - [50416]	WA	
Commonwealth Land - [50459]	WA	
Commonwealth Land - [52279]	WA	
Commonwealth Land - [50572]	WA	
Commonwealth Land - [50479]	WA	
Commonwealth Land - [50476]	WA	
Commonwealth Land - [50474]	WA	
Commonwealth Land - [50577]	WA	
Commonwealth Land - [50600]	WA	
Commonwealth Land - [50604]	WA	
Commonwealth Land - [50603]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50601]		WA
Commonwealth Land - [50578]	WA	
Commonwealth Land - [50472]	WA	
Commonwealth Land - [50477]	WA	
Commonwealth Land - [50590]	WA	
Commonwealth Land - [50599]	WA	
Commonwealth Land - [50591]	WA	
Commonwealth Land - [50480]	WA	
Commonwealth Land - [50488]	WA	
Commonwealth Land - [50482]	WA	
Commonwealth Land - [50512]	WA	
Commonwealth Land - [50597]	WA	
Commonwealth Land - [50595]	WA	
Commonwealth Land - [50491]	WA	
Commonwealth Land - [50481]	WA	
Commonwealth Land - [50462]	WA	
Commonwealth Land - [50520]	WA	
Commonwealth Land - [50423]	WA	
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Commonwealth Land - [50428]	WA	
Commonwealth Land - [50390]	WA	
Commonwealth Land - [50427]	WA	
Commonwealth Land - [52199]	WA	
Commonwealth Land - [50521]	WA	
Commonwealth Land - [50641]	WA	
Commonwealth Land - [50421]	WA	
Commonwealth Land - [50640]	WA	

Commonwealth Land Name		State
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Commonwealth Land - [50609]	WA	
Commonwealth Land - [50499]	WA	
Commonwealth Land - [50514]	WA	
Commonwealth Land - [50490]	WA	
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Commonwealth Land - [51113]	WA	
Commonwealth Land - [50602]	WA	
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Commonwealth Land - [50542]	WA	
Commonwealth Land - [50417]	WA	
Commonwealth Land - [50596]	WA	
Commonwealth Land - [50556]	WA	
Commonwealth Land - [50545]	WA	
Commonwealth Land - [50546]	WA	



Commonwealth Land Name		State
Commonwealth Land - [50547]		WA
Commonwealth Land - [50636]	WA	
Commonwealth Land - [51488]	WA	
Commonwealth Land - [50519]	WA	
Commonwealth Land - [50445]	WA	
Commonwealth Land - [50461]	WA	
Commonwealth Land - [50460]	WA	
Commonwealth Land - [50513]	WA	
Commonwealth Land - [50515]	WA	
Commonwealth Land - [50468]	WA	

Commonwealth Heritage Places			[ Resource Information ]
Name	State	Status	
Historic			
<a href="#">Artillery Barracks</a>	WA	Listed place	
<a href="#">Cliff Point Historic Site</a>	WA	Listed place	
<a href="#">J Gun Battery</a>	WA	Listed place	
Natural			
<a href="#">Garden Island</a>	WA	Listed place	

Listed Marine Species			[ Resource Information ]
Scientific Name	Threatened Category	Presence	Text
Bird			
<a href="#">Actitis hypoleucos</a>			
Common Sandpiper [59309]		Species or species habitat known to occur within area	
<a href="#">Anous stolidus</a>			
Common Noddy [825]		Species or species habitat likely to occur within area	
<a href="#">Anous tenuirostris melanops</a>			
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
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[Apus pacificus](#)

Fork-tailed Swift [678]      Species or species habitat likely to occur within area overfly marine area

[Ardenna carneipes as Puffinus carneipes](#)

Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]      Breeding known to occur within area

[Ardenna grisea as Puffinus griseus](#)

Sooty Shearwater [82651]      Vulnerable      Species or species habitat may occur within area

[Ardenna pacifica as Puffinus pacificus](#)

Wedge-tailed Shearwater [84292]      Breeding known to occur within area

[Ardenna tenuirostris as Puffinus tenuirostris](#)

Short-tailed Shearwater [82652]      Breeding known to occur within area

[Arenaria interpres](#)

Ruddy Turnstone [872]      Vulnerable      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]      Vulnerable      Roosting known to occur within area

[Calidris alba](#)

Sanderling [875]      Roosting known to occur within area

[Calidris canutus](#)

Red Knot, Knot [855]      Vulnerable      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

Scientific Name	Threatened Category	Presence Text
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[Calidris melanotos](#)

Pectoral Sandpiper [858] Species or species habitat known to occur within area overfly marine area

[Calidris pugnax as Philomachus pugnax](#)

Ruff [91256]     Roosting known to occur within area overfly marine area

[Calidris ruficollis](#)

Red-necked Stint [860]     Roosting known to occur within area overfly marine area

[Calidris subminuta](#)

Long-toed Stint [861]     Roosting known to occur within area overfly marine area

[Calidris tenuirostris](#)

Great Knot [862]     Vulnerable     Roosting known to occur within area overfly marine area

[Cereopsis novaehollandiae grisea](#) Cape

Barren     Goose     (south-western), Vulnerable     Breeding known to occur within area overfly marine area  
Recherche Cape Barren Goose [25978]

[Chalcites osculans as Chrysococcyx osculans](#)

Black-eared Cuckoo [83425]     Species or species habitat likely 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 Vulnerable     Species or species habitat known to occur within area  
[877]

[Charadrius mongolus](#)

Lesser Sand Plover, Mongolian Plover     Endangered     Roosting known to occur within area  
[879]

[Charadrius ruficapillus](#)

Red-capped Plover [881] Roosting known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
<a href="#">Chroicocephalus novaehollandiae</a> as <a href="#">Larus novaehollandiae</a>		
Silver Gull [82326]	Breeding known to occur within area	
<a href="#">Diomedea amsterdamensis</a>		
Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a>		
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a>		
Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a>		
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a>		
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a>		
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Eudyptula minor</a>		
Little Penguin [1085]	Breeding known to occur within area	
<a href="#">Gallinago megala</a>		
Swinhoe's Snipe [864]	Roosting likely to occur within area overfly marine area	
<a href="#">Gallinago stenura</a>		
Pin-tailed Snipe [841]	Roosting likely to occur within area overfly marine area	
<a href="#">Glareola maldivarum</a>		
Oriental Pratincole [840]	Species or species habitat known to occur within area overfly marine area	

Scientific Name	Threatened Category	Presence Text
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area
<a href="#">Hydroprogne caspia as Sterna caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Larus dominicanus</a> Kelp Gull [809]		Breeding known to occur within area
<a href="#">Larus pacificus</a> Pacific Gull [811]		Breeding known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[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

[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] Roosting likely 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

[Pelagodroma marina](#)

White-faced Storm-Petrel [1016] Breeding known to occur within area

[Phaethon rubricauda](#)

Red-tailed Tropicbird [994] Breeding known to occur within area

[Phalacrocorax fuscescens](#)

Black-faced Cormorant [59660] Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Roosting known to occur within area
<a href="#">Phoebetria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pluvialis fulva</a>  Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a>  Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area
<a href="#">Pterodroma macroptera</a>  Great-winged Petrel [1035]		Breeding known to occur within area
<a href="#">Pterodroma mollis</a>  Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Puffinus assimilis</a>  Little Shearwater [59363]		Breeding known to occur within area
<a href="#">Recurvirostra novaehollandiae</a>  Red-necked Avocet [871]		Roosting known to occur within area overfly marine area
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Stercorarius antarcticus as Catharacta skua</a> Brown Skua [85039]		Species or species habitat may occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding known to occur within area
<a href="#">Sternula albifrons as Sterna albifrons</a> Little Tern [82849]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Sternula nereis as Sterna nereis</a> Fairy Tern [82949]		Breeding known to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche chrysostoma</a> Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalasseus bergii as Sterna bergii</a> Greater Crested Tern [83000]		Breeding known to occur within area
<a href="#">Thinornis cucullatus as Thinornis rubricollis</a> Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
<a href="#">Tringa brevipes as Heteroscelus brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area overfly marine area



Scientific Name	Threatened Category	Presence Text
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<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
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<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
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<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]	Roosting known to occur within area overfly marine area
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<a href="#">Xenus cinereus</a> Terek Sandpiper [59300] Vulnerable	Roosting known to occur within area overfly marine area
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<b>Fish</b> <a href="#">Acentronura australe</a> Southern Pygmy Pipehorse [66185]	Species or species habitat may occur within area
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<a href="#">Campichthys galei</a> Gale's Pipefish [66191]	Species or species habitat may occur within area
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<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]	Species or species habitat may occur within area
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<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]	Species or species habitat may occur within area
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<a href="#">Heraldia nocturna</a> Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]	Species or species habitat may occur within area
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<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]	Species or species habitat may occur within area
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<a href="#">Hippocampus breviceps</a> Short-head Seahorse, Short-snouted Seahorse [66235]	Species or species habitat may occur within area
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Scientific Name	Threatened Category	Presence Text
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[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

Scientific Name	Threatened Category	Presence Text
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[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

Mammal

[Arctocephalus forsteri](#)  
Long-nosed Fur-seal, New Zealand Fur-seal  
[20]

Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Neophoca cinerea](#)

Australian Sea-lion, Australian Sea Lion Endangered    Breeding known to occur within area [22]

Reptile

[Aipysurus pooleorum](#)

Shark Bay Sea Snake [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, LuthEndangered    Foraging, feeding or related behaviour known to occur [1768] within area

[Hydrophis kingii as Disteira kingii](#)

Spectacled Sea Snake [93511]    Species or species habitat may occur within area

[Hydrophis platura as Pelamis platurus](#)

Yellow-bellied Sea Snake [93746]    Species or species habitat may occur within area

[Natator depressus](#)

Flatback Turtle [59257]    Vulnerable    Foraging, feeding or related behaviour known to occur within area

Whales and Other Cetaceans	[ Resource Information ]
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Current Scientific Name	Status	Type of Presence
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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
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Berardius arnuxii</a> Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
<a href="#">Caperea marginata</a> Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Globicephala melas</a> Long-finned Pilot Whale [59282]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Hyperoodon planifrons</a> Southern Bottlenose Whale [71]	Species or species habitat may occur within area	
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]	Species or species habitat may occur within area	
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]	Species or species habitat may occur within area	
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]	Species or species habitat likely to occur within area	
<a href="#">Lissodelphis peronii</a> Southern Right Whale Dolphin [44]	Species or species habitat may occur within area	
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Foraging, feeding or related behaviour known to occur within area	
<a href="#">Mesoplodon bowdoini</a> Andrew's Beaked Whale [73]	Species or species habitat may occur within area	
<a href="#">Mesoplodon densirostris</a> Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
<a href="#">Mesoplodon ginkgodens</a> Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
<a href="#">Mesoplodon grayi</a> Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Mesoplodon hectori</a> Hector's Beaked Whale [76]		Species or species habitat may occur within area
<a href="#">Mesoplodon layardii</a> Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
<a href="#">Mesoplodon mirus</a> True's Beaked Whale [54]	Species or species habitat may occur within area	
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]	Species or species habitat may occur within area	
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]	Species or species habitat may occur within area	
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]	Foraging, feeding or related behaviour known to occur within area	
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]	Species or species habitat likely to occur within area	
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]	Species or species habitat may occur within area	
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]	Species or species habitat may occur within area	

Current Scientific Name	Status	Type of Presence
<a href="#">Tasmacetus shepherdi</a> Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]	Species or species habitat may occur within area	
<a href="#">Ziphius cavirostris</a> 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	
Geographe	Habitat Protection Zone (IUCN IV)	
Perth Canyon	Habitat Protection Zone (IUCN IV)	
Perth Canyon	Habitat Protection Zone (IUCN IV)	
South-west Corner	Habitat Protection Zone (IUCN IV)	
Geographe	Multiple Use Zone (IUCN VI)	
Perth Canyon	Multiple Use Zone (IUCN VI)	
Perth Canyon	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
Bremer	National Park Zone (IUCN II)	
Geographe	National Park Zone (IUCN II)	



Park Name		Zone & IUCN Categories
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)		
South-west Corner   National Park Zone (IUCN II)		
South-west Corner   National Park Zone (IUCN II)		
South-west Corner   National Park Zone (IUCN II)		
South-west Corner   Special Purpose Zone (IUCN VI)		
South-west Corner   Special Purpose Zone (IUCN VI)		
Bremer   Special Purpose Zone (Mining Exclusion) (IUCN VI)		
Bremer   Special Purpose Zone (Mining Exclusion) (IUCN VI)		
Geographe   Special Purpose Zone (Mining Exclusion) (IUCN VI)		
South-west Corner   Special Purpose Zone (Mining Exclusion) (IUCN VI)		
South-west Corner   Special Purpose Zone (Mining Exclusion) (IUCN VI)		

Extra Information

State and Territory Reserves		[ Resource Information ]
Protected Area Name	Reserve Type	State
Arpenteur	Nature Reserve	WA
Bald Island	Nature Reserve	WA
Bold Park	Botanic Gardens	WA
Broadwater	Nature Reserve	WA
Cape Le Grand	National Park	WA

Protected Area Name	Reserve Type	State
Carnac Island	Nature Reserve	WA
Cottesloe Reef	Fish Habitat Protection Area	WA
D'Entrecasteaux	National Park	WA
Doubtful Islands	Nature Reserve	WA
Eclipse Island	Nature Reserve	WA
Fitzgerald River	National Park	WA
Flinders Bay	Nature Reserve	WA
Hamelin Island	Nature Reserve	WA
Investigator Island	Nature Reserve	WA
Jerdacuttup Lakes	Nature Reserve	WA
Leeuwin-Naturaliste	National Park	WA
Locke	Nature Reserve	WA
Marmion	Marine Park	WA
Mount Manypeaks	Nature Reserve	WA
Ngari Capes	Marine Park	WA
NTWA Bushland covenant (0085A)	Conservation Covenant	WA
NTWA Bushland covenant (0085B)	Conservation Covenant	WA
NTWA Bushland covenant (0173)	Conservation Covenant	WA
NTWA Bushland covenant (0178)	Conservation Covenant	WA
Penguin Island	Conservation Park	WA
Port Kennedy Scientific Park	Nature Reserve	WA
Quagering	Nature Reserve	WA
Quarram	Nature Reserve	WA
Recherche Archipelago	Nature Reserve	WA
Rottnest Island	State Reserve	WA
Shoalwater Bay Islands	Nature Reserve	WA

Protected Area Name		Reserve Type	State
Shoalwater Islands		Marine Park	WA
St Alouarn Island	Nature Reserve		WA
Stokes	National Park		WA
Sugar Loaf Rock	Nature Reserve		WA
Swan River	Management Area		WA
Torndirrup	National Park		WA
Two Peoples Bay	Nature Reserve		WA
Unnamed WA25836	Nature Reserve		WA
Unnamed WA26620	Nature Reserve		WA
Unnamed WA26885	Nature Reserve		WA
Unnamed WA27888	Nature Reserve		WA
Unnamed WA32478	5(1)(h) Reserve		WA
Unnamed WA41568	Nature Reserve		WA
Unnamed WA41597	Nature Reserve		WA
Unnamed WA42379	5(1)(h) Reserve		WA
Unnamed WA42469	Nature Reserve		WA
Unnamed WA42879	Nature Reserve		WA
Unnamed WA43903	Nature Reserve		WA
Unnamed WA44004	Nature Reserve		WA
Unnamed WA44676	5(1)(h) Reserve		WA
Unnamed WA44685	5(1)(h) Reserve		WA
Unnamed WA44709	5(1)(h) Reserve		WA
Unnamed WA48837	Nature Reserve		WA
Unnamed WA48955	5(1)(h) Reserve		WA
Unnamed WA48968	5(1)(h) Reserve		WA
Unnamed WA49220	Conservation Park		WA
Unnamed WA49385	Nature Reserve		WA

Protected Area Name	Reserve Type	State
Unnamed WA50017	Nature Reserve	WA
Walpole-Nornalup	National Park	WA
Waychinicup	National Park	WA
West Cape Howe	National Park	WA
Yalgorup	National Park	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
<a href="#">South West WA RFA</a>	Western Australia

Nationally Important Wetlands	[ Resource Information ]
Wetland Name	State
<a href="#">Becher Point Wetlands</a>	WA
<a href="#">Doggerup Creek System</a>	WA
<a href="#">Rottnest Island Lakes</a>	WA
<a href="#">Swan-Canning Estuary</a>	WA
<a href="#">Vasse-Wonnerup Wetland System</a>	WA

EPBC Act Referrals		[ Resource Information ]	
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Fremantle District Police Complex Project</a>	2022/09345	Completed	
<a href="#">H2Perth hydrogen and ammonia project</a>	2023/09559	Completed	
<a href="#">Installation of additional potable water tank</a>	2023/09518	Assessment	
<a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West</a>	2024/09826	Referral Decision	
<a href="#">WA Offshore Windfarm</a>	2021/8961	Completed	

Controlled action			
<a href="#">Aerial Application of Lavicide to Vasse-Wonnerup Wetlands</a>	2010/5593	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Airborne sonar trials</a>	2001/540	Controlled Action	Completed
<a href="#">Albany Port Authority dredging project</a>	2006/2540	Controlled Action	Post-Approval
<a href="#">All weather access track road between Windy Harbour and Nelson Location 7965</a>	2011/6121	Controlled Action	Post-Approval
<a href="#">Busselton Foreshore Redevelopment from West Street to Ford Road</a>	2013/6830	Controlled Action	Post-Approval
<a href="#">Cape View Resort at Lot 190 Little Colin Street</a>	2006/3070	Controlled Action	Post-Approval
<a href="#">Construction of a Deepwater, General Container Port</a>	2009/5178	Controlled Action	Proposed Decision
<a href="#">Construction of New Perth Bunbury Highway project</a>	2005/2193	Controlled Action	Post-Approval
<a href="#">Dawson Beach Estate Stage 2</a>	2005/2153	Controlled Action	Post-Approval
<a href="#">Development Guide Plan for 46 ha Residential Subdivision</a>	2008/4102	Controlled Action	Post-Approval
<a href="#">Development of Busselton Health Campus</a>	2011/6011	Controlled Action	Post-Approval
<a href="#">Development of Kwinana Quay port facility</a>	2008/4387	Controlled Action	Completed
<a href="#">Develop Trails and a Wetlands Demonstration Site and Centre</a>	2008/4439	Controlled Action	Post-Approval
<a href="#">Eastern Link Project, Busselton WA</a>	2018/8155	Controlled Action	Post-Approval
<a href="#">Industry Zone</a>	2010/5337	Controlled Action	Post-Approval
<a href="#">Lennox Weir Removal, 12kms west Busselton</a>	2021/8915 Approach	Controlled Action	Assessment
<a href="#">Lower Vasse River Sediment Removal</a>	2021/9051	Controlled Action	Post-Approval
<a href="#">Mangles Bay Marina Based Tourist Precinct</a>	2010/5659	Controlled Action	Post-Approval
<a href="#">Neighbourhood Shopping Centre and Mixed Business Centre, Ocean Road, Dawesville</a>	2006/3155	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Old Broadwater Farm Estate Subdivision - Stage 3</a>	2009/5231	Controlled Action	Post-Approval
<a href="#">Peel's Retreat Estate - Residential development</a>	2006/3063	Controlled Action	Post-Approval
<a href="#">Peppermint Park Residential Subdivision - Stage 5</a>	2008/4028	Controlled Action	Post-Approval
<a href="#">Point Grey Marina Project</a>	2010/5515	Controlled Action	Post-Approval
<a href="#">Point Grey Residential Development - Terrestrial Component</a>	2011/5825	Controlled Action	Post-Approval
<a href="#">Ravensthorpe Nickel Project</a>	2001/172	Controlled Action	Post-Approval
<a href="#">Residential Development, Lot 3 &amp; 4 Dorsett Street</a>	2006/2774	Controlled Action	Completed
<a href="#">Residential development Lot 3, 500 Bussell Highway, WA</a>	2013/7098	Controlled Action	Post-Approval
<a href="#">Residential development Lots 8 &amp; 9 King Street</a>	2006/2787	Controlled Action	Completed
<a href="#">retirement units &amp; aged care facility development</a>	2007/3533	Controlled Action	Post-Approval
<a href="#">Shark Hazard Mitigation Drum Line Program, WA</a>	2014/7174	Controlled Action	Completed
<a href="#">Shenton Park Subdivision</a>	2004/1479	Controlled Action	Completed
<a href="#">Smiths Beach Project, Yallingup - Coastal Tourism Village</a>	2021/9141	Controlled Action	Referral Publication
<a href="#">Southern Bluefin Tuna Farm</a>	2005/2165	Controlled Action	Completed
<a href="#">Subdivision Lot 1 Dawesville Rd</a>	2005/2394	Controlled Action	Post-Approval
<a href="#">Three Turning Pockets West of Busselton Townsite</a>	2002/846	Controlled Action	Post-Approval
<a href="#">Tourism Villa Facility Development</a>	2008/4025	Controlled Action	Post-Approval
<a href="#">tourist and residential development</a>	2007/3483	Controlled Action	Post-Approval
<a href="#">Upgrade of Ford Road</a>	2005/2113	Controlled Action	Completed



Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Urban development, multiple lots</a> <a href="#">Northerly Street, Vasse, WA</a>	2019/8494	Controlled Action	Assessment Approach
<a href="#">Vasse Diversion Drain Upgrade</a>	2017/7932	Controlled Action	Post-Approval
<a href="#">Warders Hotel, Block 1 Warders Cottages, Fremantle, WA</a>	2018/8144	Controlled Action	Post-Approval
<b>Not controlled action</b>			
<a href="#">'Looping 10' gas transmission pipeline from Kwinana to Hopelands</a>	2005/2212 Action	Not Controlled	Completed
<a href="#">25 Lot Residential Subdivision</a> Action	2009/4830	Not Controlled	Completed
<a href="#">Aerial application of mosquito larvicides to Vasse Wonnerup Wetlands, WA</a>	2016/7780 Action	Not Controlled	Completed
<a href="#">APX-West Fibre-optic telecommunications cable system, WA to Singapore</a>	2013/7102 Action	Not Controlled	Completed
<a href="#">Bushfire Mitigation Works - City of Mandurah</a>	2020/8674 Action	Not Controlled	Completed
<a href="#">Busselton to Flinders Bay Rails to Trails Project, WA</a>	2013/6835 Action	Not Controlled	Completed
<a href="#">Cape Naturaliste Road Shared Pathway, Dunsborough, WA</a>	2018/8282 Action	Not Controlled	Completed
<a href="#">Causeway Bridge Duplication, Busselton, WA</a>	2018/8309 Action	Not Controlled	Completed
<a href="#">Caves Road widening project between Dunsborough and Yallingup(20.3 -24.6 SLK), WA</a>	2015/7475 Action	Not Controlled	Completed
<a href="#">Clear Lot 503, 54 Ocean Road Dawesville, WA</a>	2014/7375 Action	Not Controlled	Completed
<a href="#">Construction and operation of an 8 turbine wind farm at Rous Head Harbour, Frema</a>	2003/933 Action	Not Controlled	Completed
<a href="#">Construction of Secret Harbour High School</a>	2004/1489 Action	Not Controlled	Completed
<a href="#">CTBT - Cape Leeuwin Hydroacoustic Station Proposal</a>	2000/27 Action	Not Controlled	Completed
<a href="#">Disposal of residential properties, Fremantle, WA</a>	2019/8593 Action	Not Controlled	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Eastport canal estate development stage 5</a>	2007/3737 Action	Not Controlled	Completed
<a href="#">Establishment of a National Lifestyle Village</a>	2011/6081 Action	Not Controlled	Completed
<a href="#">Expansion of berthing facilities at Kwinana Bulk Terminal</a>	2006/2509 Action	Not Controlled	Completed
<a href="#">Expansion of existing Ammonium Nitrate Production Facility</a>	2005/1941 Action	Not Controlled	Completed
<a href="#">Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters</a>	2017/7891 Action	Not Controlled	Completed
<a href="#">Florida Estate Residential Subdivision Development Stage 13</a>	2011/6045 Action	Not Controlled	Completed
<a href="#">Florida North residential development, Lot 9008, Ocean Road, Dawesville, WA</a>	2015/7462 Action	Not Controlled	Completed
<a href="#">Fremantle Ports Inner Harbour Capital Dredging Proposal</a>	2005/2477 Action	Not Controlled	Completed
<a href="#">Gas-fired Power Station</a>	2005/2213	Not Controlled Action	Completed
<a href="#">Geo-science Investigations</a>	2005/2069	Not Controlled	Completed
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522 Action	Not Controlled	Completed
<a href="#">INDIGO Central Submarine Telecommunications Cable</a>	2017/8127 Action	Not Controlled	Completed
<a href="#">Kennedy Bay urban development, Port Kennedy, WA</a>	2014/7122 Action	Not Controlled	Completed
<a href="#">Kennedy Park Estate Residential Development</a>	2003/1044 Action	Not Controlled	Completed
<a href="#">Kwinana Gas-Fired Power Station</a>	2005/2101	Not Controlled	Completed
<a href="#">Limestone quarry expansion</a>	2005/2268	Not Controlled	Completed
<a href="#">Limestone Quarry Expansion, Lots 3618 and 1794, Finn Road</a>	2005/2332 Action	Not Controlled	Completed
<a href="#">Lot 101 Mandurah Road, Madora Bay, WA</a>	2012/6466 Action	Not Controlled	Completed



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Oman Australia Cable Installation, WA</a>	2021/8922 Action	Not Controlled	Completed
<a href="#">Oman Australia Cable - Marine Route Survey</a>	2020/8731 Action	Not Controlled	Completed
<a href="#">Palm Beach Caravan Park Redevelopment, Rockingham, WA</a>	2013/6853 Action	Not Controlled	Completed
<a href="#">Redevelopment of Lots 3 &amp; 4, Kent Street</a>	2007/3243 Action	Not Controlled	Completed
<a href="#">Residential &amp; Light Industrial Development, Vasse WA</a>	2013/6932 Action	Not Controlled	Completed
<a href="#">Residential development, Lot 42, Farmhouse Court, Bovell, WA</a>	2014/7195 Action	Not Controlled	Completed
<a href="#">Re-zoning of Land for Future Residential Development Purposes</a>	2009/4908 Action	Not Controlled	Completed
<a href="#">Rottnest Lodge Redevelopment Action</a>	2019/8565	Not Controlled	Completed
<a href="#">Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin</a>	2004/1700 Action	Not Controlled	Completed
<a href="#">Sepia Depression Ocean Outlet Landline Duplication</a>	2012/6248 Action	Not Controlled	Completed
<a href="#">Vasse Hotel and Supermarket Redevelopment</a>	2001/288 Action	Not Controlled	Completed
<a href="#">Warders' Cottages Block 2 'W2' Action</a>	2022/9148	Not Controlled	Completed
<a href="#">Warders' Cottages W2 minor works, Fremantle, WA</a>	2018/8185 Action	Not Controlled	Completed
<a href="#">Wind Farm development</a>	2005/2105	Not Controlled Action	Completed
Not controlled action (particular manner)			
<a href="#">2D seismic survey</a>	2007/3273	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D seismic survey</a>	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval

[3D Marine Seismic Survey Within  
WA-382-P](#)2007/3799

Not Controlled  
Action (Particular  
Manner)

Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Aerial Mosquito Spraying Vasse-Wonnerup System</a>	2005/1952	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ambergate North Residential Development</a>	2009/4802	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Arcadia Petroleum - BR12 3D Marine Seismic Survey</a>	2012/6476	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Australian Underwater Discovery Centre</a>	2021/9019	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Australia to Singapore Fibre Optic Submarine Cable System</a>	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bremer Basin 2D Marine Seismic Survey, WA</a>	2009/5013	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CETO 6 Garden Island Project, offshore WA</a>	2016/7635	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CETO 6 Geophysical and Geotechnical Surveys</a>	2014/7408	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">City of Cockburn Sporting Facilities</a>	2005/2139	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Construction of urea production plant and supporting infrastructure</a>	2009/5067	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Coodanup residential development</a>	2006/3073	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Extension of existing mains water supply pipeline</a>	2009/4686	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Grand Southern Margin 2D Marine Seismic Survey</a>	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Lake Richmond Boardwalk installation, Rockingham, WA</a>	2013/6977	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta</a>	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Marine Environmental Survey</a> 2012/6275	2012/6275	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Monaghan's Roundabout Project - Intersection of Bussell Highway and Caves Road, Shire of Busselton</a>	2007/3515	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Multipurpose development stage 1 within 340ha</a>	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Novacare Lifestyle Village</a> 2001/311	2001/311	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Road upgrades and walk trail development</a>	2009/4958	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">South Busselton Primary School</a> 2001/290	2001/290	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">South West Metropolitan Railway Project</a>	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Subdivision and development of residential dwelling on part Lot 1, Bussell Highw</a>	2006/3023	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
<a href="#">3D Marine Seismic survey</a>	2007/3725	Referral Decision	Completed
<a href="#">3D Seismic Survey</a>	2012/6245	Referral Decision	Completed
<a href="#">Ambergate North Residential Community (4896 lots)</a>	2008/4617	Referral Decision	Completed
<a href="#">CO2 3D Seismic Survey Vlaming Sub-Basin</a>	2012/6343	Referral Decision	Completed
<a href="#">Grand Southern Margin 2D Marine Seismic Survey</a>	2008/4573	Referral Decision	Completed
<a href="#">Kennedy Bay Urban Development, Port Kennedy, Rockingham</a>	2013/7022	Referral Decision	Completed
<a href="#">Lots 1-5 Bluerise Cove &amp; Lots 801 &amp; 124 Pleasant Grove Rezoning and Subdivision</a>	2008/4295	Referral Decision	Completed
<a href="#">Narelle 3D Marine Seismic Survey</a>	2008/4575	Referral Decision	Completed
<a href="#">Residential Subdivision Lot 801 Pleasant Grove Circle, Falcon, WA</a>	2012/6507	Referral Decision	Referral Publication
<a href="#">Riverbank and Country Road Estates Lot 43 Bussell Highway</a>	2005/2367	Referral Decision	Completed
<a href="#">Sonar Trials and Acoustic Trials</a>	2001/538	Referral Decision	Completed
<a href="#">Water quality improvement trial, Lower Vasse River, Busselton, WA</a>	2013/6975	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
<a href="#">Albany Canyons group and adjacent shelf break</a>	South-west
<a href="#">Ancient coastline at 90-120m depth</a>	South-west
<a href="#">Cape Mentelle upwelling</a>	South-west

Name	Region
<a href="#">Commonwealth marine environment surrounding the Recherche Archipelago</a>	South-west
<a href="#">Commonwealth marine environment within and adjacent</a>	South-west <a href="#">to Geographe Bay</a>
<a href="#">Commonwealth marine environment within and adjacent</a>	South-west <a href="#">to the west coast inshore lagoons</a>
<a href="#">Diamantina Fracture Zone</a>	South-west
<a href="#">Naturaliste Plateau</a>	South-west
<a href="#">Perth Canyon and adjacent shelf break, and other west coast canyons</a>	South-west
<a href="#">Western demersal slope and associated fish communities</a>	South-west
<a href="#">Western rock lobster</a>	South-west

Biologically Important Areas			[ Resource Information ]
Scientific Name	Behaviour		Presence
Seabirds			
<a href="#">Ardenna carneipes</a>			
Flesh-footed Shearwater [82404]	Aggregation	Known to occur	
<a href="#">Ardenna carneipes</a>			
Flesh-footed Shearwater [82404]	Foraging (in high numbers)	Known to occur	
<a href="#">Ardenna pacifica</a>			
Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur	
<a href="#">Ardenna tenuirostris</a>			
Short-tailed Shearwater [82652]	Foraging (in high numbers)	Known to occur	
<a href="#">Eudyptula minor</a>			
Little Penguin [1085] (provisioning young)	Foraging	Known to occur	
<a href="#">Hydroprogne caspia</a>			
Caspian Tern [808] (provisioning young)	Foraging	Known to occur	
<a href="#">Larus pacificus</a>			
Pacific Gull [811] high numbers)	Foraging (in	Former Range	

Scientific Name	Behaviour	Presence
<a href="#">Larus pacificus</a> Pacific Gull [811] Foraging (in high numbers)		Known to occur
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845] Foraging (in high numbers)		Known to occur
<a href="#">Onychoprion fuscata</a> Sooty Tern [82847] Foraging	Known to occur	
<a href="#">Pelagodroma marina</a> White-faced Storm petrel [1016] Foraging (in high numbers)		Known to occur
<a href="#">Phalacrocorax fuscescens</a> Black-faced Cormorant [59660] Foraging	Known to occur	
<a href="#">Pterodroma macroptera macroptera</a> Great-winged Petrel (macroptera race) [1035] Foraging (provisioning young)		Known to occur
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036] Foraging (in high numbers)		Known to occur
<a href="#">Puffinus assimilis tunneyi</a> Little Shearwater [59363] Foraging (in high numbers)		Known to occur
<a href="#">Sterna dougallii</a> Roseate Tern [817] Foraging	Known to occur	
<a href="#">Sternula nereis</a> Fairy Tern [82949] Foraging (in high numbers)		Known to occur
<a href="#">Thalassarche chlororhynchos bassi</a> Indian Yellow-nosed Albatross [85249] Foraging (in high numbers)		Known to occur
Seals <a href="#">Neophoca cinerea</a> Australian Sea Lion [22] Foraging (male)		Likely to occur



Scientific Name	Behaviour	Presence
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[Neophoca cinerea](#)

Australian Sea Lion [22]    Foraging (male and female)    Known to occur

[Neophoca cinerea](#)

Australian Sea Lion [22]    Foraging (male and female)    Likely to occur

**Sharks**    [Carcharodon carcharias](#)

White Shark [64470]    Foraging    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 brevipauda](#)

Pygmy Blue Whale [81317]    Distribution    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    Foraging Area (annual high use area)    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    Known Foraging Area    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    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



Scientific Name	Behaviour	Presence
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]    Migration (south)		Known to occur
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]    Foraging (abundant food source)		Known to occur

## Caveat

### 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.

### 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

### 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

### 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: 10-Jun-2024

- [Summary](#) [Details](#)
- [Matters of NES](#)
- [Other Matters Protected by the EPBC Act](#) [Extra Information](#)
- [Caveat](#) [Acknowledgements](#)

Figure 1: SWMR sub area 2 (labelled '3' and '4')



# 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](#).

<a href="#">World Heritage Properties:</a>	1
<a href="#">National Heritage Places:</a>	3
<a href="#">Wetlands of International Importance (Ramsar)</a>	6
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	3
<a href="#">Listed Threatened Ecological Communities:</a>	9
<a href="#">Listed Threatened Species:</a>	141
<a href="#">Listed Migratory Species:</a>	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 <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.

<a href="#">Commonwealth Lands:</a>	240
<a href="#">Commonwealth Heritage Places:</a>	4
<a href="#">Listed Marine Species:</a>	123
<a href="#">Whales and Other Cetaceans:</a>	39
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	29
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

### Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	63
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Nationally Important Wetlands:</a>	5
<a href="#">EPBC Act Referrals:</a>	131
<a href="#">Key Ecological Features (Marine):</a>	11
<a href="#">Biologically Important Areas:</a>	33
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

Matters of National Environmental Significance

World Heritage Properties			[ Resource Information ]
Name	State	Legal Status	
<a href="#">Australian Convict Sites (Fremantle Prison)</a>	WA	Declared property	

National Heritage Places			[ Resource Information ]
Name	State	Legal Status	
Historic			
<a href="#">Fremantle Prison (former)</a>	WA	Listed place	
Indigenous			
<a href="#">Cheetup Rock Shelter</a>	WA	Listed place	
Natural			
<a href="#">Fitzgerald River National Park</a>	WA	Listed place	

Wetlands of International Importance (RamsarWetlands)		[ Resource Information ]
Ramsar Site Name		Proximity
<a href="#">Becher point wetlands</a>		Within Ramsar site
<a href="#">Forrestdale and thomsons lakes</a>		Within 10km of Ramsar site
<a href="#">Lake gore</a>		Within Ramsar site
<a href="#">Lake warden system</a>		Within 10km of Ramsar site
<a href="#">Peel-yalgorup system</a>		Within Ramsar site
<a href="#">Vasse-wonnerup system</a>		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) Commonwealth Marine Areas (EPBC Act) 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
<a href="#">Aquatic Root Mat Community 3 in Caves of the Leeuwin Naturaliste Ridge</a>	Endangered	Community known to occur within area
<a href="#">Banksia Woodlands of the Swan Coastal Plain ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Empodisma peatlands of southwestern Australia</a>	Endangered	Community likely to occur within area
<a href="#">Honeymyrtle shrubland on limestone ridges of the Swan Coastal Plain Bioregion</a>	Critically Endangered	Community likely to occur within area
<a href="#">Proteaceae Dominated Kwongan Shrublands of the Southeast Coastal Floristic Province of Western Australia</a>	Endangered	Community likely to occur within area
<a href="#">Sedgeland in Holocene dune swales of the southern Swan Coastal Plain</a>	Endangered	Community known to occur within area
<a href="#">Subtropical and Temperate Coastal Saltmarsh</a>	Vulnerable	Community likely to occur within area
<a href="#">Thrombolite (microbial) community of coastal freshwater lakes of the Swan Coastal Plain (Lake Richmond)</a>	Endangered	Community known to occur within area
<a href="#">Tuart (Eucalyptus gomphocephala) Woodlands and Forests of the Swan Coastal Plain ecological community</a>	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		
<a href="#">Anous tenuirostris melanops</a> Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area
<a href="#">Aphelocephala leucopsis</a> Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna grisea</a> Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Atrichornis clamosus</a> Noisy Scrub-bird, Tjimiluk [654]	Endangered	Species or species habitat known to occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area
<a href="#">Calyptorhynchus banksii naso</a> Forest Red-tailed Black-Cockatoo, Karrak [67034]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Cereopsis novaehollandiae grisea</a> Cape Barren Goose (south-western), Recherche Cape Barren Goose [25978]	Vulnerable	Breeding known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Dasyornis longirostris</a> Western Bristlebird [515]	Endangered	Species or species habitat known to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a> Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Leipoa ocellata</a> Malleefowl [934]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Limosa limosa](#)

Black-tailed Godwit [845] Endangered      Roosting known to occur within area

[Macronectes giganteus](#)

Southern Giant-Petrel, Southern Giant      Endangered      Species or species habitat may occur within area  
Petrel [1060]

[Macronectes halli](#)

Northern Giant Petrel [1061]      Vulnerable      Foraging, feeding or related behaviour 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

[Pezoporus flaviventris](#)

Western Ground Parrot, Kyloring [84650] Critically Endangered      Species or species habitat may occur within area

[Phaethon rubricauda westralis](#)

Red-tailed Tropicbird (Indian Ocean),      Endangered      Species or species habitat known to occur within area  
Indian Ocean Red-tailed Tropicbird  
[91824]

[Phoebetria fusca](#)

Sooty Albatross [1075]      Vulnerable      Species or species habitat likely to occur within area

[Pluvialis squatarola](#)

Grey Plover [865]      Vulnerable      Roosting known to occur within area

[Psophodes nigrogularis nigrogularis](#)

Western Heath Whipbird [64449]      Endangered      Species or species habitat 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
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[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
 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 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
 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

[Tringa nebularia](#)

Common Greenshank, Greenshank [832]
 Endangered
 Species or species habitat known to occur within area

[Xenus cinereus](#)

Terek Sandpiper [59300]
 Vulnerable
 Roosting known 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

Scientific Name	Threatened Category	Presence Text
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[Zanda latirostris listed as Calyptorhynchus latirostris](#)

Carnaby's Black Cockatoo, Short-billed Black-cockatoo [87737]	Endangered	Breeding known to occur within area
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CRUSTACEAN

[Engaewa pseudoreducta](#)

Margaret River Burrowing Crayfish [82674]	Critically Endangered	Species or species habitat may occur within area
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[Engaewa reducta](#)

Dunsborough Burrowing Crayfish [82675]	Critically Endangered	Species or species habitat may occur within area
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FISH

[Galaxias truttaceus \(Western Australian population\)](#)

Western Trout Minnow [89857]	Endangered	Species or species habitat known to occur within area
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[Galaxiella nigrostriata](#)

Blackstriped Dwarf Galaxias, stripe Minnow [88677]	Black-Endangered	Species or species habitat known to occur within area
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[Hoplostethus atlanticus](#)

Orange Roughy, Deep-sea Perch, Red Roughy [68455]	Conservation Dependent	Species or species habitat likely to occur within area
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[Nannatherina balstoni](#)

Balston's Pygmy Perch [66698]	Vulnerable	Species or species habitat known to occur within area
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[Thunnus maccoyii](#)

Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat known to occur within area
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INSECT

[Hesperocolletes douglasi](#)

Douglas' Broad-headed Bee, Rottnest Bee [66734]	Critically Endangered	Species or species habitat may occur within area
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[Trioza barrettae](#)

Banksia brownii plant louse [87805]	Endangered	Species or species habitat known to occur within area
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MAMMAL

Scientific Name	Threatened Category	Presence Text
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Bettongia penicillata ogilbyi</a> Woylie [66844]	Endangered	Species or species habitat known to occur within area
<a href="#">Dasyurus geoffroii</a> Chuditch, Western Quoll [330]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area
<a href="#">Myrmecobius fasciatus</a> Numbat [294]	Endangered	Species or species habitat may occur within area
<a href="#">Neophoca cinerea</a> Australian Sea-lion, Australian Sea Lion [22]	Endangered	Breeding known to occur within area
<a href="#">Parantechinus apicalis</a> Dibbler [313]	Endangered	Species or species habitat known to occur within area
<a href="#">Petrogale lateralis hacketti</a> Recherche Rock-wallaby [66849]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
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[Petrogale lateralis lateralis](#)  
 Black-flanked Rock-wallaby, Moororong, Endangered      Translocated population known to occur within area  
 Black-footed Rock Wallaby [66647]

[Phascogale calura](#)  
 Red-tailed Phascogale, Red-tailed Wambenger, Kenngoor [316]      Vulnerable      Species or species habitat may occur within area

[Potorous gilbertii](#)  
 Gilbert's Potoroo, Ngilkat [66642]      Critically Endangered      Species or species habitat known to occur within area

[Pseudocheirus occidentalis](#) Western Ringtail Possum, Ngwayir, Womp, Woder, Ngoor, Ngoolangit [25911]      Critically Endangered      Breeding known to occur within area

[Pseudomys shortridgei](#)  
 Heath Mouse, Dayang, Heath Rat [77]      Endangered      Species or species habitat likely to occur within area

[Setonix brachyurus](#)  
 Quokka [229]      Vulnerable      Species or species habitat known to occur within area

OTHER  
[Westralunio carteri](#)  
 Carter's Freshwater Mussel, Freshwater Mussel [86266]      Vulnerable      Species or species habitat known to occur within area

PLANT  
[Adenanthos dobagii](#)  
 Fitzgerald Woollybush [21253]Endangered      Species or species habitat likely to occur within area

[Adenanthos ellipticus](#)  
 Oval-leaf Adenanthos [4570]      Vulnerable      Species or species habitat likely to occur within area

[Andersonia gracilis](#)  
 Slender Andersonia [14470]      Endangered      Species or species habitat may occur within area

[Andersonia pinaster](#)  
 Two Peoples Bay Andersonia [67444]      Vulnerable      Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[Anigozanthos bicolor subsp. minor](#)  
 Little Kangaroo Paw, Two-coloured Kangaroo Paw, Small Two-colour Kangaroo Paw [21241]

Endangered
 Species or species habitat likely to occur within area

[Banksia brownii](#)  
 Brown's Banksia, Feather-leaved Banksia [8277]

Critically Endangered
 Species or species habitat known to occur within area

[Banksia nivea subsp. uliginosa](#)  
 Swamp Honeypot [82766]

Endangered
 Species or species habitat may occur within area

[Banksia squarrosa subsp. argillacea](#)  
 Whicher Range Dryandra [82769]

Vulnerable
 Species or species habitat likely to occur within area

[Banksia verticillata](#)  
 Granite Banksia, Albany Banksia, River Banksia [8333]

Vulnerable
 Species or species habitat known to occur within area

[Boronia clavata](#)  
 Bremer Boronia [5538]

Endangered
 Species or species habitat may occur within area

[Brachyscias verecundus](#)  
 Ironstone Brachyscias [81321]

Critically Endangered
 Species or species habitat may occur within area

[Caladenia busselliana](#)  
 Bussell's Spider-orchid [24369]

Endangered
 Species or species habitat likely to occur within area

[Caladenia caesarea subsp. maritima](#)  
 Cape Spider-orchid [64856]

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 granitora](#)  
 [65292]

Endangered
 Species or species habitat known to occur within area



Scientific Name	Threatened Category	Presence Text
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[Caladenia harringtoniae](#)  
Harrington's Spider-orchid, Pink Spider-orchid [56786]

Vulnerable

Species or species habitat may occur within area

[Caladenia huegelii](#)  
King Spider-orchid, Grand Spider-orchid, Rusty Spider-orchid [7309]

Endangered

Species or species habitat known to occur within area

[Caladenia lodgeana](#)  
Lodge's Spider-orchid [68664]

Critically Endangered

Species or species habitat likely to occur within area

[Caladenia procera](#)  
Carbunup King Spider Orchid [68679]

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

[Calectasia cyanea](#)  
Blue Tinsel Lily [7669]

Critically Endangered

Species or species habitat likely to occur within area

[Chamelaucium lullfitzii listed as Chamelaucium sp. Gingin \(N.G.Marchant 6\)](#)  
Gingin Wax [92777] Gingin

Endangered (listed as Chamelaucium sp. Gingin)

Species or species habitat likely to occur within area

[Chamelaucium sp. S coastal plain \(R.D.Royce 4872\)](#)  
Royce's Waxflower [87814]

Vulnerable

Species or species habitat likely to occur within area

[Chordifex abortivus](#)  
Manypeaks Rush [64868]

Endangered

Species or species habitat likely to occur within area

[Commersonia apella](#)  
Many-flowered Commersonia [86877]

Critically Endangered

Species or species habitat known to occur within area

[Coopernookia georgei](#)  
Mauve Coopernookia [21218]

Endangered

Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Daviesia obovata</a> Paddle-leaf Daviesia [17311]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diuris drummondii</a> Tall Donkey Orchid [4365]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diuris micrantha</a> Dwarf Bee-orchid [55082]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Diuris purdiei</a> Purdie's Donkey-orchid [12950]	Endangered	Species or species habitat may occur within area
<a href="#">Drakaea elastica</a> Glossy-leaved Hammer Orchid, Glossy-leaved Hammer Orchid, Warty Hammer Orchid [16753]	Endangered	Species or species habitat likely to occur within area
<a href="#">Drakaea micrantha</a> Dwarf Hammer-orchid [56755]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Eucalyptus argutifolia</a> Yanchep Mallee, Wabling Hill Mallee [24263]	Vulnerable	Species or species habitat may occur within area
<a href="#">Eucalyptus insularis</a> Twin Peak Island Mallee [3057]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eucalyptus x phylacis</a> Meelup Mallee [87817]	Endangered	Species or species habitat known to occur within area
<a href="#">Gastrolobium papilio</a> Butterfly-leaved Gastrolobium [78415]	Endangered	Species or species habitat may occur within area
<a href="#">Grevillea elongata</a> Ironstone Grevillea [64578]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Grevillea infundibularis</a> Fan-leaf Grevillea [5772]	Endangered	Species or species habitat likely to occur within area
<a href="#">Isopogon uncinatus</a> Albany Cone Bush, Hook-leaf Isopogon [20871]	Endangered	Species or species habitat likely to occur within area
<a href="#">Kennedia glabrata</a> Northcliffe Kennedia [16452]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lambertia echinata subsp. echinata</a> Prickly Honeysuckle [56729]	Endangered	Species or species habitat known to occur within area
<a href="#">Lambertia echinata subsp. occidentalis</a> Western Prickly Honeysuckle [64528]	Endangered	Species or species habitat may occur within area
<a href="#">Morelotia australiensis listed as Tetraria australiensis</a> Southern Tetraria [92784]	Vulnerable	Species or species habitat may occur within area
<a href="#">Petrophile latericola</a> Laterite Petrophile [64532]	Endangered	Species or species habitat may occur within area
<a href="#">Phaius australis</a> Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
<a href="#">Reedia spathacea</a> Reedia [2995]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Ricinocarpos trichophorus</a> Barrens Wedding Bush [19931]	Endangered	Species or species habitat may occur within area
<a href="#">Sphenotoma drummondii</a> Mountain Paper-heath [21160]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Stylidium galioides</a> Yellow Mountain Triggerplant [4666]	Vulnerable	Species or species habitat may occur within area
<a href="#">Synaphea sp. Fairbridge Farm (D.Papenfus 696)</a> Selena's Synaphea [82881]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Verticordia crebra</a> [55678]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Verticordia densiflora var. pedunculata</a> Long-stalked Featherflower [55689]	Endangered	Species or species habitat may occur within area
<a href="#">Verticordia plumosa var. ananeotes</a> Tufted Plumed Featherflower [23871]	Endangered	Species or species habitat may occur within area
<a href="#">Verticordia plumosa var. vassensis</a> Vasse Featherflower [55804]	Endangered	Species or species habitat may occur within area
<a href="#">Wurmbea calcicola</a> Naturaliste Nancy [64691]	Endangered	Species or species habitat known to occur within area

REPTILE

<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

SHARK

<a href="#">Carcharias taurus (west coast population)</a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Congregation or aggregation known to occur within area
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<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
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<a href="#">Centrophorus uyato</a> Little Gulper Shark [68446]	Conservation Dependent	Species or species habitat likely to occur within area
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<a href="#">Galeorhinus galeus</a> School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area
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<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
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<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
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<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area
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Listed Migratory Species

[ Resource Information ]

Scientific Name	Threatened Category	Presence Text
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Migratory Marine Birds

<a href="#">Anous stolidus</a> Common Noddy [825]	Species or species habitat likely to occur within area
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<a href="#">Apus pacificus</a> Fork-tailed Swift [678]	Species or species habitat likely to occur within area
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Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Breeding known to occur within area
<a href="#">Ardenna grisea</a> Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
<a href="#">Ardenna pacifica</a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#">Ardenna tenuirostris</a> Short-tailed Shearwater [82652]		Breeding known to occur within area
<a href="#">Diomedea amsterdamensis</a> Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a> Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]		Breeding known to occur within area
<a href="#">Phaethon rubricauda</a> Red-tailed Tropicbird [994]		Breeding known to occur within area
<a href="#">Phoebetria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding known to occur within area
<a href="#">Sternula albifrons</a> Little Tern [82849]		Species or species habitat may occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thalassarche cauta</a> Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche chrysostoma</a> Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[Thalassarche steady](#)

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      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      Foraging, feeding or related behaviour known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Eubalaena australis as Balaena glacialis australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]		Species or species habitat likely to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Foraging, feeding or related behaviour known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat known to occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Roosting known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Calidris pugnax</a> as <a href="#">Philomachus pugnax</a> Ruff [91256]		Roosting known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Roosting known to occur within area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Roosting known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Vulnerable	Roosting known to occur within area
<a href="#">Charadrius bicinctus</a> Double-banded Plover [895]		Roosting known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
<a href="#">Gallinago megala</a> Swinhoe's Snipe [864]		Roosting likely to occur within area
<a href="#">Gallinago stenura</a> Pin-tailed Snipe [841]		Roosting likely to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius minutus</a> Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Roosting known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Roosting known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]	Vulnerable	Roosting known to occur within area
<a href="#">Thalasseus bergii</a> Greater Crested Tern [83000]		Breeding known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Roosting known to occur within area
<a href="#">Tringa glareola</a> Wood Sandpiper [829]		Roosting known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]		Roosting known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Xenus cinereus</a>		
Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands	<a href="#">[ Resource Information ]</a>
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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 - ARTILLERY BARRACKS - FREMANTLE [50155] WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50183] WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50185]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50184]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50186]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50181]    WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50187] WA    Defence - CAMPBELL BARRACKS - SWANBOURNE [50182] WA

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50117]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50134]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50133]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50131]

Defence - HMAS STIRLING-ROCKINGHAM ;HMAS STIRLING - GARDEN WA ISLAND [50132]

Defence - ROCKINGHAM - NAVY CPSO [50135]    WA

Defence - SWANBOURNE RIFLE RANGE [50188]WA

Commonwealth Land Name		State
Defence - SWANBOURNE RIFLE RANGE [50191]		WA
Unknown		
Commonwealth Land - [50495]	WA	
Commonwealth Land - [50505]	WA	
Commonwealth Land - [50424]	WA	
Commonwealth Land - [50493]	WA	
Commonwealth Land - [50507]	WA	
Commonwealth Land - [50506]	WA	
Commonwealth Land - [50487]	WA	
Commonwealth Land - [50483]	WA	
Commonwealth Land - [50425]	WA	
Commonwealth Land - [50473]	WA	
Commonwealth Land - [50564]	WA	
Commonwealth Land - [50566]	WA	
Commonwealth Land - [50567]	WA	
Commonwealth Land - [50467]	WA	
Commonwealth Land - [50551]	WA	
Commonwealth Land - [50558]	WA	
Commonwealth Land - [50431]	WA	
Commonwealth Land - [50550]	WA	
Commonwealth Land - [50633]	WA	
Commonwealth Land - [50437]	WA	
Commonwealth Land - [50422]	WA	
Commonwealth Land - [50518]	WA	
Commonwealth Land - [51105]	WA	
Commonwealth Land - [50605]	WA	
Commonwealth Land - [51437]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50579]		WA
Commonwealth Land - [50631]	WA	
Commonwealth Land - [50638]	WA	
Commonwealth Land - [50517]	WA	
Commonwealth Land - [50470]	WA	
Commonwealth Land - [50478]	WA	
Commonwealth Land - [50510]	WA	
Commonwealth Land - [50511]	WA	
Commonwealth Land - [50412]	WA	
Commonwealth Land - [50501]	WA	
Commonwealth Land - [50498]	WA	
Commonwealth Land - [50416]	WA	
Commonwealth Land - [50504]	WA	
Commonwealth Land - [50419]	WA	
Commonwealth Land - [50418]	WA	
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Commonwealth Land - [50628]	WA	
Commonwealth Land - [50629]	WA	
Commonwealth Land - [50573]	WA	
Commonwealth Land - [50446]	WA	
Commonwealth Land - [50485]	WA	
Commonwealth Land - [50608]	WA	
Commonwealth Land - [50600]	WA	
Commonwealth Land - [51889]	WA	
Commonwealth Land - [50500]	WA	
Commonwealth Land - [50486]	WA	



Commonwealth Land Name		State
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Commonwealth Land - [50456]	WA	
Commonwealth Land - [50457]	WA	
Commonwealth Land - [52281]	WA	
Commonwealth Land - [50455]	WA	
Commonwealth Land - [50529]	WA	
Commonwealth Land - [50471]	WA	
Commonwealth Land - [50525]	WA	
Commonwealth Land - [50522]	WA	
Commonwealth Land - [50570]	WA	
Commonwealth Land - [50527]	WA	
Commonwealth Land - [51890]	WA	
Commonwealth Land - [50571]	WA	
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Commonwealth Land - [50620]	WA	
Commonwealth Land - [50623]	WA	
Commonwealth Land - [50622]	WA	
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Commonwealth Land - [50451]	WA	
Commonwealth Land - [50454]	WA	
Commonwealth Land - [50458]	WA	
Commonwealth Land - [50639]	WA	
Commonwealth Land - [50632]	WA	
Commonwealth Land - [50463]	WA	



Commonwealth Land Name		State
Commonwealth Land - [50589]		WA
Commonwealth Land - [51480]	WA	
Commonwealth Land - [50634]	WA	
Commonwealth Land - [50635]	WA	
Commonwealth Land - [50466]	WA	
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Commonwealth Land - [50538]	WA	
Commonwealth Land - [50531]	WA	
Commonwealth Land - [50530]	WA	
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Commonwealth Land - [50438]	WA	
Commonwealth Land - [50613]	WA	
Commonwealth Land - [50389]	WA	
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Commonwealth Land - [50441]	WA	
Commonwealth Land - [50447]	WA	
Commonwealth Land - [52200]	WA	
Commonwealth Land - [50484]	WA	
Commonwealth Land - [50523]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50387]		WA
Commonwealth Land - [51987]	WA	
Commonwealth Land - [50388]	WA	
Commonwealth Land - [50434]	WA	
Commonwealth Land - [50449]	WA	
Commonwealth Land - [50536]	WA	
Commonwealth Land - [50433]	WA	
Commonwealth Land - [50432]	WA	
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Commonwealth Land - [50581]	WA	
Commonwealth Land - [50617]	WA	
Commonwealth Land - [50526]	WA	
Commonwealth Land - [50465]	WA	
Commonwealth Land - [51411]	WA	
Commonwealth Land - [51117]	WA	
Commonwealth Land - [50524]	WA	
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Commonwealth Land - [51895]	WA	
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Commonwealth Land - [50610]	WA	
Commonwealth Land - [50614]	WA	
Commonwealth Land - [50612]	WA	
Commonwealth Land - [50616]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50615]		WA
Commonwealth Land - [50453]	WA	
Commonwealth Land - [50568]	WA	
Commonwealth Land - [51891]	WA	
Commonwealth Land - [51894]	WA	
Commonwealth Land - [51892]	WA	
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Commonwealth Land - [50534]	WA	
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Commonwealth Land - [52279]	WA	
Commonwealth Land - [50627]	WA	
Commonwealth Land - [50497]	WA	
Commonwealth Land - [50637]	WA	
Commonwealth Land - [50459]	WA	
Commonwealth Land - [50476]	WA	
Commonwealth Land - [50474]	WA	
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Commonwealth Land - [50479]	WA	
Commonwealth Land - [50591]	WA	
Commonwealth Land - [50590]	WA	
Commonwealth Land - [50604]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50599]		WA
Commonwealth Land - [50603]	WA	
Commonwealth Land - [50601]	WA	
Commonwealth Land - [50472]	WA	
Commonwealth Land - [50491]	WA	
Commonwealth Land - [50597]	WA	
Commonwealth Land - [50595]	WA	
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Commonwealth Land - [50516]	WA	
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Commonwealth Land - [50480]	WA	
Commonwealth Land - [50488]	WA	
Commonwealth Land - [50482]	WA	
Commonwealth Land - [50423]	WA	
Commonwealth Land - [50390]	WA	
Commonwealth Land - [50427]	WA	
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Commonwealth Land - [50428]	WA	
Commonwealth Land - [50641]	WA	
Commonwealth Land - [50640]	WA	
Commonwealth Land - [52199]	WA	
Commonwealth Land - [50421]	WA	
Commonwealth Land - [50609]	WA	
Commonwealth Land - [50420]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50499]		WA
Commonwealth Land - [50514]	WA	
Commonwealth Land - [50490]	WA	
Commonwealth Land - [50548]	WA	
Commonwealth Land - [50549]	WA	
Commonwealth Land - [50544]	WA	
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Commonwealth Land - [50528]	WA	
Commonwealth Land - [51116]	WA	
Commonwealth Land - [51115]	WA	
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Commonwealth Land - [51436]	WA	
Commonwealth Land - [50602]	WA	
Commonwealth Land - [51113]	WA	
Commonwealth Land - [50552]	WA	
Commonwealth Land - [51119]	WA	
Commonwealth Land - [50543]	WA	
Commonwealth Land - [50542]	WA	
Commonwealth Land - [50417]	WA	
Commonwealth Land - [50596]	WA	
Commonwealth Land - [50555]	WA	
Commonwealth Land - [50556]	WA	
Commonwealth Land - [50554]	WA	
Commonwealth Land - [50547]	WA	
Commonwealth Land - [50540]	WA	

Commonwealth Land Name		State
Commonwealth Land - [50541]		WA
Commonwealth Land - [50469]	WA	
Commonwealth Land - [51488]	WA	
Commonwealth Land - [50636]	WA	
Commonwealth Land - [50445]	WA	
Commonwealth Land - [50460]	WA	
Commonwealth Land - [50513]	WA	
Commonwealth Land - [50515]	WA	
Commonwealth Land - [50519]	WA	
Commonwealth Land - [50461]	WA	

Commonwealth Heritage Places			[ Resource Information ]
Name	State	Status	
Historic			
<a href="#">Artillery Barracks</a>	WA	Listed place	
<a href="#">Cliff Point Historic Site</a>	WA	Listed place	
<a href="#">J Gun Battery</a>	WA	Listed place	
Natural			
<a href="#">Garden Island</a>	WA	Listed place	

Listed Marine Species			[ Resource Information ]
Scientific Name	Threatened Category	Presence	Text
Bird			
<a href="#">Actitis hypoleucos</a>			
Common Sandpiper [59309]		Species or species habitat known to occur within area	
<a href="#">Anous stolidus</a>			
Common Noddy [825]		Species or species habitat likely to occur within area	
<a href="#">Anous tenuirostris melanops</a>			
Australian Lesser Noddy [26000]	Vulnerable	Species or species habitat may occur within area	

Scientific Name	Threatened Category	Presence Text
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[Apus pacificus](#)

Fork-tailed Swift [678]      Species or species habitat likely to occur within area overfly marine area

[Ardenna carneipes as Puffinus carneipes](#)

Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]      Breeding known to occur within area

[Ardenna grisea as Puffinus griseus](#)

Sooty Shearwater [82651]      Vulnerable      Species or species habitat may occur within area

[Ardenna pacifica as Puffinus pacificus](#)

Wedge-tailed Shearwater [84292]      Breeding known to occur within area

[Ardenna tenuirostris as Puffinus tenuirostris](#)

Short-tailed Shearwater [82652]      Breeding known to occur within area

[Arenaria interpres](#)

Ruddy Turnstone [872]      Vulnerable      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]      Vulnerable      Roosting known to occur within area

[Calidris alba](#)

Sanderling [875]      Roosting known to occur within area

[Calidris canutus](#)

Red Knot, Knot [855]      Vulnerable      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

Scientific Name	Threatened Category	Presence Text
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[Calidris melanotos](#)

Pectoral Sandpiper [858] Species or species habitat known to occur within area overfly marine area

[Calidris pugnax as Philomachus pugnax](#)

Ruff [91256]     Roosting known to occur within area overfly marine area

[Calidris ruficollis](#)

Red-necked Stint [860]     Roosting known to occur within area overfly marine area

[Calidris subminuta](#)

Long-toed Stint [861]     Roosting known to occur within area overfly marine area

[Calidris tenuirostris](#)

Great Knot [862]     Vulnerable     Roosting known to occur within area overfly marine area

[Cereopsis novaehollandiae grisea](#) Cape

Barren     Goose     (south-western), Vulnerable     Breeding known to occur within area overfly marine area  
Recherche Cape Barren Goose [25978]

[Chalcites osculans as Chrysococcyx osculans](#)

Black-eared Cuckoo [83425]     Species or species habitat likely 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 Vulnerable     Species or species habitat known to occur within area  
[877]

[Charadrius mongolus](#)

Lesser Sand Plover, Mongolian Plover     Endangered     Roosting known to occur within area  
[879]

[Charadrius ruficapillus](#)

Red-capped Plover [881] Roosting known to occur within area overfly marine area



Scientific Name	Threatened Category	Presence Text
<a href="#">Chroicocephalus novaehollandiae</a> as <a href="#">Larus novaehollandiae</a>		
Silver Gull [82326]	Breeding known to occur within area	
<a href="#">Diomedea amsterdamensis</a>		
Amsterdam Albatross [64405]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea antipodensis</a>		
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea dabbenena</a>		
Tristan Albatross [66471]	Endangered	Species or species habitat likely to occur within area
<a href="#">Diomedea epomophora</a>		
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea exulans</a>		
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a>		
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Eudyptula minor</a>		
Little Penguin [1085]	Breeding known to occur within area	
<a href="#">Gallinago megala</a>		
Swinhoe's Snipe [864]	Roosting likely to occur within area overfly marine area	
<a href="#">Gallinago stenura</a>		
Pin-tailed Snipe [841]	Roosting likely to occur within area overfly marine area	
<a href="#">Glareola maldivarum</a>		
Oriental Pratincole [840]	Species or species habitat known to occur within area overfly marine area	

Scientific Name	Threatened Category	Presence Text
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
<a href="#">Halobaena caerulea</a> Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area
<a href="#">Hydroprogne caspia as Sterna caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Larus dominicanus</a> Kelp Gull [809]		Breeding known to occur within area
<a href="#">Larus pacificus</a> Pacific Gull [811]		Breeding known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
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[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

[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] Roosting likely 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

[Pelagodroma marina](#)

White-faced Storm-Petrel [1016] Breeding known to occur within area

[Phaethon rubricauda](#)

Red-tailed Tropicbird [994] Breeding known to occur within area

[Phalacrocorax fuscescens](#)

Black-faced Cormorant [59660] Breeding known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Roosting known to occur within area
<a href="#">Phoebetria fusca</a> Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pluvialis fulva</a>  Pacific Golden Plover [25545]		Roosting known to occur within area
<a href="#">Pluvialis squatarola</a>  Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area
<a href="#">Pterodroma macroptera</a>  Great-winged Petrel [1035]		Breeding known to occur within area
<a href="#">Pterodroma mollis</a>  Soft-plumaged Petrel [1036]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Puffinus assimilis</a>  Little Shearwater [59363]		Breeding known to occur within area
<a href="#">Recurvirostra novaehollandiae</a>  Red-necked Avocet [871]		Roosting known to occur within area overfly marine area
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Stercorarius antarcticus as Catharacta skua</a> Brown Skua [85039]		Species or species habitat may occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding known to occur within area
<a href="#">Sternula albifrons as Sterna albifrons</a> Little Tern [82849]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
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[Sternula nereis as Sterna nereis](#)

Fairy Tern [82949]		Breeding known to occur within area
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[Thalassarche carteri](#)

Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
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[Thalassarche cauta](#)

Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
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[Thalassarche chrysostoma](#)

Grey-headed Albatross [66491]	Endangered	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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[Thalassarche melanophris](#)

Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
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[Thalassarche steadi](#)

White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area
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[Thalasseus bergii as Sterna bergii](#)

Greater Crested Tern [83000]		Breeding known to occur within area
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[Thinornis cucullatus as Thinornis rubricollis](#)

Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
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[Tringa brevipes as Heteroscelus brevipes](#)

Grey-tailed Tattler [851]		Roosting known to occur within area
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[Tringa glareola](#)

Wood Sandpiper [829]		Roosting known to occur within area overfly marine area
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Scientific Name	Threatened Category	Presence Text
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<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
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<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area
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<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]		Roosting known to occur within area overfly marine area
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<a href="#">Xenus cinereus</a> Terek Sandpiper [59300] Vulnerable		Roosting known to occur within area overfly marine area
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Fish

<a href="#">Acentronura australe</a> Southern Pygmy Pipehorse [66185]		Species or species habitat may occur within area
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<a href="#">Campichthys galei</a> Gale's Pipefish [66191]		Species or species habitat may occur within area
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<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
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<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]		Species or species habitat may occur within area
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<a href="#">Heraldia nocturna</a> Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
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<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
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<a href="#">Hippocampus breviceps</a> Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
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Scientific Name	Threatened Category	Presence Text
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[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

Scientific Name	Threatened Category	Presence Text
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[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

Mammal

[Arctocephalus forsteri](#)  
Long-nosed Fur-seal, New Zealand Fur-seal  
[20]

Breeding known to occur within area



Scientific Name	Threatened Category	Presence Text
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[Neophoca cinerea](#)  
 Australian Sea-lion, Australian Sea Lion Endangered    Breeding known to occur within area [22]

Reptile

[Aipysurus pooleorum](#)  
 Shark Bay Sea Snake [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, LuthEndangered    Foraging, feeding or related behaviour known to occur [1768] within area

[Hydrophis kingii as Disteira kingii](#)  
 Spectacled Sea Snake [93511]    Species or species habitat may occur within area

[Hydrophis platura as Pelamis platurus](#)  
 Yellow-bellied Sea Snake [93746]    Species or species habitat may occur within area

[Natator depressus](#)  
 Flatback Turtle [59257]    Vulnerable    Foraging, feeding or related behaviour known to 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    Species or species habitat likely to occur  
 Minke Whale [67812]

Current Scientific Name	Status	Type of Presence
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Berardius arnuxii</a> Arnoux's Beaked Whale [70]		Species or species habitat may occur within area
<a href="#">Caperea marginata</a> Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Breeding known to occur within area
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Globicephala melas</a> Long-finned Pilot Whale [59282]		Species or species habitat may occur

Current Scientific Name	Status	Type of Presence
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Hyperoodon planifrons</a> Southern Bottlenose Whale [71]	Species or species habitat may occur within area	
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]	Species or species habitat may occur within area	
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]	Species or species habitat may occur within area	
<a href="#">Lagenorhynchus obscurus</a> Dusky Dolphin [43]	Species or species habitat likely to occur within area	
<a href="#">Lissodelphis peronii</a> Southern Right Whale Dolphin [44]	Species or species habitat may occur within area	
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Foraging, feeding or related behaviour known to occur within area	
<a href="#">Mesoplodon bowdoini</a> Andrew's Beaked Whale [73]	Species or species habitat may occur within area	
<a href="#">Mesoplodon densirostris</a> Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
<a href="#">Mesoplodon ginkgodens</a> Ginkgo-toothed Beaked Whale, Ginkgo-toothed Whale, Ginkgo Beaked Whale [59564]		Species or species habitat may occur within area
<a href="#">Mesoplodon grayi</a> Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Mesoplodon hectori</a> Hector's Beaked Whale [76]		Species or species habitat may occur within area
<a href="#">Mesoplodon layardii</a> Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area
<a href="#">Mesoplodon mirus</a> True's Beaked Whale [54]	Species or species habitat may occur within area	
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]	Species or species habitat may occur within area	
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]	Species or species habitat may occur within area	
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]	Foraging, feeding or related behaviour known to occur within area	
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]	Species or species habitat likely to occur within area	
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]	Species or species habitat may occur within area	
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]	Species or species habitat may occur within area	

Current Scientific Name	Status	Type of Presence
<a href="#">Tasmacetus shepherdi</a> Shepherd's Beaked Whale, Tasman Beaked Whale [55]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]	Species or species habitat may occur within area	
<a href="#">Ziphius cavirostris</a> 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	
Geographe	Habitat Protection Zone (IUCN IV)	
Perth Canyon	Habitat Protection Zone (IUCN IV)	
Perth Canyon	Habitat Protection Zone (IUCN IV)	
South-west Corner	Habitat Protection Zone (IUCN IV)	
Geographe	Multiple Use Zone (IUCN VI)	
Perth Canyon	Multiple Use Zone (IUCN VI)	
Perth Canyon	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
South-west Corner	Multiple Use Zone (IUCN VI)	
Bremer	National Park Zone (IUCN II)	
Geographe	National Park Zone (IUCN II)	

Park Name	Zone & IUCN Categories	
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)	
South-west Corner	National Park Zone (IUCN II)	
South-west Corner	National Park Zone (IUCN II)	
South-west Corner	National Park Zone (IUCN II)	
South-west Corner	Special Purpose Zone (IUCN VI)	
South-west Corner	Special Purpose Zone (IUCN VI)	
Bremer	Special Purpose Zone (Mining Exclusion) (IUCN VI)	
Bremer	Special Purpose Zone (Mining Exclusion) (IUCN VI)	
Geographe	Special Purpose Zone (Mining Exclusion) (IUCN VI)	
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)	
South-west Corner	Special Purpose Zone (Mining Exclusion) (IUCN VI)	

### Extra Information

State and Territory Reserves		[ Resource Information ]
Protected Area Name	Reserve Type	State
Arpenteur	Nature Reserve	WA
Bald Island	Nature Reserve	WA
Bold Park	Botanic Gardens	WA
Broadwater	Nature Reserve	WA
Cape Le Grand	National Park	WA

Protected Area Name	Reserve Type	State
Carnac Island	Nature Reserve	WA
Cottesloe Reef	Fish Habitat Protection Area	WA
D'Entrecasteaux	National Park	WA
Doubtful Islands	Nature Reserve	WA
Eclipse Island	Nature Reserve	WA
Fitzgerald River	National Park	WA
Flinders Bay	Nature Reserve	WA
Hamelin Island	Nature Reserve	WA
Investigator Island	Nature Reserve	WA
Jerdacuttup Lakes	Nature Reserve	WA
Leeuwin-Naturaliste	National Park	WA
Locke	Nature Reserve	WA
Marmion	Marine Park	WA
Mount Manypeaks	Nature Reserve	WA
Ngari Capes	Marine Park	WA
NTWA Bushland covenant (0085A)	Conservation Covenant	WA
NTWA Bushland covenant (0085B)	Conservation Covenant	WA
NTWA Bushland covenant (0173)	Conservation Covenant	WA
NTWA Bushland covenant (0178)	Conservation Covenant	WA
Penguin Island	Conservation Park	WA
Port Kennedy Scientific Park	Nature Reserve	WA
Quagering	Nature Reserve	WA
Quarram	Nature Reserve	WA
Recherche Archipelago	Nature Reserve	WA
Rottnest Island	State Reserve	WA
Shoalwater Bay Islands	Nature Reserve	WA

Protected Area Name		Reserve Type	State
Shoalwater Islands		Marine Park	WA
St Alouarn Island	Nature Reserve		WA
Stokes	National Park		WA
Sugar Loaf Rock	Nature Reserve		WA
Swan River	Management Area		WA
Torndirrup	National Park		WA
Two Peoples Bay	Nature Reserve		WA
Unnamed WA25836	Nature Reserve		WA
Unnamed WA26620	Nature Reserve		WA
Unnamed WA26885	Nature Reserve		WA
Unnamed WA27888	Nature Reserve		WA
Unnamed WA32478	5(1)(h) Reserve		WA
Unnamed WA41568	Nature Reserve		WA
Unnamed WA41597	Nature Reserve		WA
Unnamed WA42379	5(1)(h) Reserve		WA
Unnamed WA42469	Nature Reserve		WA
Unnamed WA42879	Nature Reserve		WA
Unnamed WA43903	Nature Reserve		WA
Unnamed WA44004	Nature Reserve		WA
Unnamed WA44676	5(1)(h) Reserve		WA
Unnamed WA44685	5(1)(h) Reserve		WA
Unnamed WA44709	5(1)(h) Reserve		WA
Unnamed WA48837	Nature Reserve		WA
Unnamed WA48955	5(1)(h) Reserve		WA
Unnamed WA48968	5(1)(h) Reserve		WA
Unnamed WA49220	Conservation Park		WA
Unnamed WA49385	Nature Reserve		WA



Protected Area Name	Reserve Type	State
Unnamed WA50017	Nature Reserve	WA
Walpole-Nornalup	National Park	WA
Waychinicup	National Park	WA
West Cape Howe	National Park	WA
Yalgorup	National Park	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
<a href="#">South West WA RFA</a>	Western Australia

Nationally Important Wetlands	[ Resource Information ]
Wetland Name	State
<a href="#">Becher Point Wetlands</a>	WA
<a href="#">Doggerup Creek System</a>	WA
<a href="#">Rottnest Island Lakes</a>	WA
<a href="#">Swan-Canning Estuary</a>	WA
<a href="#">Vasse-Wonnerup Wetland System</a>	WA

EPBC Act Referrals		[ Resource Information ]	
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Fremantle District Police Complex Project</a>	2022/09345	Completed	
<a href="#">H2Perth hydrogen and ammonia project</a>	2023/09559	Completed	
<a href="#">Installation of additional potable water tank</a>	2023/09518	Assessment	
<a href="#">Marine Route Survey for Subsea Fibre Optic Data Cable System - Australia West</a>	2024/09826	Referral Decision	
<a href="#">WA Offshore Windfarm</a>	2021/8961	Completed	

Controlled action		
<a href="#">Aerial Application of Lavicide to Vasse-Wonnerup Wetlands</a>	2010/5593	Controlled Action      Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Airborne sonar trials</a>	2001/540	Controlled Action	Completed
<a href="#">Albany Port Authority dredging project</a>	2006/2540	Controlled Action	Post-Approval
<a href="#">All weather access track road between Windy Harbour and Nelson Location 7965</a>	2011/6121	Controlled Action	Post-Approval
<a href="#">Busselton Foreshore Redevelopment from West Street to Ford Road</a>	2013/6830	Controlled Action	Post-Approval
<a href="#">Cape View Resort at Lot 190 Little Colin Street</a>	2006/3070	Controlled Action	Post-Approval
<a href="#">Construction of a Deepwater, General Container Port</a>	2009/5178	Controlled Action	Proposed Decision
<a href="#">Construction of New Perth Bunbury Highway project</a>	2005/2193	Controlled Action	Post-Approval
<a href="#">Dawson Beach Estate Stage 2</a>	2005/2153	Controlled Action	Post-Approval
<a href="#">Development Guide Plan for 46 ha Residential Subdivision</a>	2008/4102	Controlled Action	Post-Approval
<a href="#">Development of Busselton Health Campus</a>	2011/6011	Controlled Action	Post-Approval
<a href="#">Development of Kwinana Quay port facility</a>	2008/4387	Controlled Action	Completed
<a href="#">Develop Trails and a Wetlands Demonstration Site and Centre</a>	2008/4439	Controlled Action	Post-Approval
<a href="#">Eastern Link Project, Busselton WA</a>	2018/8155	Controlled Action	Post-Approval
<a href="#">Industry Zone</a>	2010/5337	Controlled Action	Post-Approval
<a href="#">Lennox Weir Removal, 12kms west Busselton</a>	2021/8915 Approach	Controlled Action	Assessment
<a href="#">Lower Vasse River Sediment Removal</a>	2021/9051	Controlled Action	Post-Approval
<a href="#">Mangles Bay Marina Based Tourist Precinct</a>	2010/5659	Controlled Action	Post-Approval
<a href="#">Neighbourhood Shopping Centre and Mixed Business Centre, Ocean Road, Dawesville</a>	2006/3155	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Old Broadwater Farm Estate Subdivision - Stage 3</a>	2009/5231	Controlled Action	Post-Approval
<a href="#">Peel's Retreat Estate - Residential development</a>	2006/3063	Controlled Action	Post-Approval
<a href="#">Peppermint Park Residential Subdivision - Stage 5</a>	2008/4028	Controlled Action	Post-Approval
<a href="#">Point Grey Marina Project</a>	2010/5515	Controlled Action	Post-Approval
<a href="#">Point Grey Residential Development - Terrestrial Component</a>	2011/5825	Controlled Action	Post-Approval
<a href="#">Ravensthorpe Nickel Project</a>	2001/172	Controlled Action	Post-Approval
<a href="#">Residential Development, Lot 3 &amp; 4 Dorsett Street</a>	2006/2774	Controlled Action	Completed
<a href="#">Residential development Lot 3, 500 Bussell Highway, WA</a>	2013/7098	Controlled Action	Post-Approval
<a href="#">Residential development Lots 8 &amp; 9 King Street</a>	2006/2787	Controlled Action	Completed
<a href="#">retirement units &amp; aged care facility development</a>	2007/3533	Controlled Action	Post-Approval
<a href="#">Shark Hazard Mitigation Drum Line Program, WA</a>	2014/7174	Controlled Action	Completed
<a href="#">Shenton Park Subdivision</a>	2004/1479	Controlled Action	Completed
<a href="#">Smiths Beach Project, Yallingup - Coastal Tourism Village</a>	2021/9141	Controlled Action	Referral Publication
<a href="#">Southern Bluefin Tuna Farm</a>	2005/2165	Controlled Action	Completed
<a href="#">Subdivision Lot 1 Dawesville Rd</a>	2005/2394	Controlled Action	Post-Approval
<a href="#">Three Turning Pockets West of Busselton Townsite</a>	2002/846	Controlled Action	Post-Approval
<a href="#">Tourism Villa Facility Development</a>	2008/4025	Controlled Action	Post-Approval
<a href="#">tourist and residential development</a>	2007/3483	Controlled Action	Post-Approval
<a href="#">Upgrade of Ford Road</a>	2005/2113	Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
<b>Controlled action</b>			
<a href="#">Urban development, multiple lots</a> <a href="#">Northerly Street, Vasse, WA</a>	2019/8494	Controlled Action	Assessment Approach
<a href="#">Vasse Diversion Drain Upgrade</a>	2017/7932	Controlled Action	Post-Approval
<a href="#">Warders Hotel, Block 1 Warders Cottages, Fremantle, WA</a>	2018/8144	Controlled Action	Post-Approval
<b>Not controlled action</b>			
<a href="#">'Looping 10' gas transmission pipeline from Kwinana to Hopelands</a>	2005/2212 Action	Not Controlled	Completed
<a href="#">25 Lot Residential Subdivision</a> Action	2009/4830	Not Controlled	Completed
<a href="#">Aerial application of mosquito larvicides to Vasse Wonnerup Wetlands, WA</a>	2016/7780 Action	Not Controlled	Completed
<a href="#">APX-West Fibre-optic telecommunications cable system, WA to Singapore</a>	2013/7102 Action	Not Controlled	Completed
<a href="#">Bushfire Mitigation Works - City of Mandurah</a>	2020/8674 Action	Not Controlled	Completed
<a href="#">Busselton to Flinders Bay Rails to Trails Project, WA</a>	2013/6835 Action	Not Controlled	Completed
<a href="#">Cape Naturaliste Road Shared Pathway, Dunsborough, WA</a>	2018/8282 Action	Not Controlled	Completed
<a href="#">Causeway Bridge Duplication, Busselton, WA</a>	2018/8309 Action	Not Controlled	Completed
<a href="#">Caves Road widening project between Dunsborough and Yallingup(20.3 -24.6 SLK), WA</a>	2015/7475 Action	Not Controlled	Completed
<a href="#">Clear Lot 503, 54 Ocean Road Dawesville, WA</a>	2014/7375 Action	Not Controlled	Completed
<a href="#">Construction and operation of an 8 turbine wind farm at Rous Head Harbour, Frema</a>	2003/933 Action	Not Controlled	Completed
<a href="#">Construction of Secret Harbour High School</a>	2004/1489 Action	Not Controlled	Completed
<a href="#">CTBT - Cape Leeuwin Hydroacoustic Station Proposal</a>	2000/27 Action	Not Controlled	Completed
<a href="#">Disposal of residential properties, Fremantle, WA</a>	2019/8593 Action	Not Controlled	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Eastport canal estate development stage 5</a>	2007/3737 Action	Not Controlled	Completed
<a href="#">Establishment of a National Lifestyle Village</a>	2011/6081 Action	Not Controlled	Completed
<a href="#">Expansion of berthing facilities at Kwinana Bulk Terminal</a>	2006/2509 Action	Not Controlled	Completed
<a href="#">Expansion of existing Ammonium Nitrate Production Facility</a>	2005/1941 Action	Not Controlled	Completed
<a href="#">Expedition 369-Australian Cretaceous Climate and Tectonics, Australian EEZ waters</a>	2017/7891 Action	Not Controlled	Completed
<a href="#">Florida Estate Residential Subdivision Development Stage 13</a>	2011/6045 Action	Not Controlled	Completed
<a href="#">Florida North residential development, Lot 9008, Ocean Road, Dawesville, WA</a>	2015/7462 Action	Not Controlled	Completed
<a href="#">Fremantle Ports Inner Harbour Capital Dredging Proposal</a>	2005/2477 Action	Not Controlled	Completed
<a href="#">Gas-fired Power Station</a>	2005/2213	Not Controlled Action	Completed
<a href="#">Geo-science Investigations</a>	2005/2069	Not Controlled	Completed
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522 Action	Not Controlled	Completed
<a href="#">INDIGO Central Submarine Telecommunications Cable</a>	2017/8127 Action	Not Controlled	Completed
<a href="#">Kennedy Bay urban development, Port Kennedy, WA</a>	2014/7122 Action	Not Controlled	Completed
<a href="#">Kennedy Park Estate Residential Development</a>	2003/1044 Action	Not Controlled	Completed
<a href="#">Kwinana Gas-Fired Power Station</a>	2005/2101	Not Controlled	Completed
<a href="#">Limestone quarry expansion</a>	2005/2268	Not Controlled	Completed
<a href="#">Limestone Quarry Expansion, Lots 3618 and 1794, Finn Road</a>	2005/2332 Action	Not Controlled	Completed
<a href="#">Lot 101 Mandurah Road, Madora Bay, WA</a>	2012/6466 Action	Not Controlled	Completed



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Oman Australia Cable Installation, WA</a>	2021/8922 Action	Not Controlled	Completed
<a href="#">Oman Australia Cable - Marine Route Survey</a>	2020/8731 Action	Not Controlled	Completed
<a href="#">Palm Beach Caravan Park Redevelopment, Rockingham, WA</a>	2013/6853 Action	Not Controlled	Completed
<a href="#">Redevelopment of Lots 3 &amp; 4, Kent Street</a>	2007/3243 Action	Not Controlled	Completed
<a href="#">Residential &amp; Light Industrial Development, Vasse WA</a>	2013/6932 Action	Not Controlled	Completed
<a href="#">Residential development, Lot 42, Farmhouse Court, Bovell, WA</a>	2014/7195 Action	Not Controlled	Completed
<a href="#">Re-zoning of Land for Future Residential Development Purposes</a>	2009/4908 Action	Not Controlled	Completed
<a href="#">Rottnest Lodge Redevelopment Action</a>	2019/8565	Not Controlled	Completed
<a href="#">Seismic Survey, Bremer Basin, Mentelle Basin and Zeewyck Sub-basin</a>	2004/1700 Action	Not Controlled	Completed
<a href="#">Sepia Depression Ocean Outlet Landline Duplication</a>	2012/6248 Action	Not Controlled	Completed
<a href="#">Vasse Hotel and Supermarket Redevelopment</a>	2001/288 Action	Not Controlled	Completed
<a href="#">Warders' Cottages Block 2 'W2' Action</a>	2022/9148	Not Controlled	Completed
<a href="#">Warders' Cottages W2 minor works, Fremantle, WA</a>	2018/8185 Action	Not Controlled	Completed
<a href="#">Wind Farm development</a>	2005/2105	Not Controlled Action	Completed
Not controlled action (particular manner)			
<a href="#">2D seismic survey</a>	2007/3273	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D seismic survey</a>	2008/4493	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey Within WA-382-P</a>	2007/3799	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Aerial Mosquito Spraying Vasse-Wonnerup System</a>	2005/1952	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ambergate North Residential Development</a>	2009/4802	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Arcadia Petroleum - BR12 3D Marine Seismic Survey</a>	2012/6476	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Australian Underwater Discovery Centre</a>	2021/9019	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Australia to Singapore Fibre Optic Submarine Cable System</a>	2011/6127	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Bremer Basin 2D Marine Seismic Survey, WA</a>	2009/5013	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CETO 6 Garden Island Project, offshore WA</a>	2016/7635	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CETO 6 Geophysical and Geotechnical Surveys</a>	2014/7408	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">City of Cockburn Sporting Facilities</a>	2005/2139	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Construction of urea production plant and supporting infrastructure</a>	2009/5067	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Coodanup residential development</a>	2006/3073	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Extension of existing mains water supply pipeline</a>	2009/4686	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Manner)			
<a href="#">Grand Southern Margin 2D Marine Seismic Survey</a>	2008/4599	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Lake Richmond Boardwalk installation, Rockingham, WA</a>	2013/6977	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Laying a submarine optical fibre telecommunications cable, Perth to Singapore and Jakarta</a>	2014/7332	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Marine Environmental Survey</a> 2012/6275	2012/6275	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">Monaghan's Roundabout Project - Intersection of Bussell Highway and Caves Road, Shire of Busselton</a>	2007/3515	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Multipurpose development stage 1 within 340ha</a>	2004/1913	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Novacare Lifestyle Village</a> 2001/311	2001/311	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">Road upgrades and walk trail development</a>	2009/4958	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">South Busselton Primary School</a> 2001/290	2001/290	Not Controlled	Post-Approval
Action (Particular Manner)			
<a href="#">South West Metropolitan Railway Project</a>	2003/1175	Not Controlled Action (Particular Manner)	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Subdivision and development of residential dwelling on part Lot 1, Bussell Highw</a>	2006/3023	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
<a href="#">3D Marine Seismic survey</a>	2007/3725	Referral Decision	Completed
<a href="#">3D Seismic Survey</a>	2012/6245	Referral Decision	Completed
<a href="#">Ambergate North Residential Community (4896 lots)</a>	2008/4617	Referral Decision	Completed
<a href="#">CO2 3D Seismic Survey Vlaming Sub-Basin</a>	2012/6343	Referral Decision	Completed
<a href="#">Grand Southern Margin 2D Marine Seismic Survey</a>	2008/4573	Referral Decision	Completed
<a href="#">Kennedy Bay Urban Development, Port Kennedy, Rockingham</a>	2013/7022	Referral Decision	Completed
<a href="#">Lots 1-5 Bluerise Cove &amp; Lots 801 &amp; 124 Pleasant Grove Rezoning and Subdivision</a>	2008/4295	Referral Decision	Completed
<a href="#">Narelle 3D Marine Seismic Survey</a>	2008/4575	Referral Decision	Completed
<a href="#">Residential Subdivision Lot 801 Pleasant Grove Circle, Falcon, WA</a>	2012/6507	Referral Decision	Referral Publication
<a href="#">Riverbank and Country Road Estates Lot 43 Bussell Highway</a>	2005/2367	Referral Decision	Completed
<a href="#">Sonar Trials and Acoustic Trials</a>	2001/538	Referral Decision	Completed
<a href="#">Water quality improvement trial, Lower Vasse River, Busselton, WA</a>	2013/6975	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
<a href="#">Albany Canyons group and adjacent shelf break</a>	South-west
<a href="#">Ancient coastline at 90-120m depth</a>	South-west
<a href="#">Cape Mentelle upwelling</a>	South-west

Name	Region
<a href="#">Commonwealth marine environment surrounding the Recherche Archipelago</a>	South-west
<a href="#">Commonwealth marine environment within and adjacent</a>	South-west <a href="#">to Geographe Bay</a>
<a href="#">Commonwealth marine environment within and adjacent</a>	South-west <a href="#">to the west coast inshore lagoons</a>
<a href="#">Diamantina Fracture Zone</a>	South-west
<a href="#">Naturaliste Plateau</a>	South-west
<a href="#">Perth Canyon and adjacent shelf break, and other west coast canyons</a>	South-west
<a href="#">Western demersal slope and associated fish communities</a>	South-west
<a href="#">Western rock lobster</a>	South-west

Biologically Important Areas		[ Resource Information ]
Scientific Name	Behaviour	Presence
Seabirds		
<a href="#">Ardenna carneipes</a>		
Flesh-footed Shearwater [82404]	Aggregation	Known to occur
<a href="#">Ardenna carneipes</a>		
Flesh-footed Shearwater [82404]	Foraging (in high numbers)	Known to occur
<a href="#">Ardenna pacifica</a>		
Wedge-tailed Shearwater [84292]	Foraging (in high numbers)	Known to occur
<a href="#">Ardenna tenuirostris</a>		
Short-tailed Shearwater [82652]	Foraging (in high numbers)	Known to occur
<a href="#">Eudyptula minor</a>		
Little Penguin [1085]	Foraging (provisioning young)	Known to occur
<a href="#">Hydroprogne caspia</a>		
Caspian Tern [808]	Foraging (provisioning young)	Known to occur
<a href="#">Larus pacificus</a>		
Pacific Gull [811]	Foraging (in high numbers)	Former Range

Scientific Name	Behaviour	Presence
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[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

[Phalacrocorax fuscescens](#)

Black-faced Cormorant [59660]     Foraging   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

[Sterna dougallii](#)

Roseate Tern [817]   Foraging   Known to occur

[Sternula nereis](#)

Fairy Tern [82949]   Foraging (in high numbers)     Known to occur

[Thalassarche chlororhynchos bassi](#)

Indian Yellow-nosed Albatross [85249]   Foraging (in high numbers)     Known to occur

Seals

[Neophoca cinerea](#)

Australian Sea Lion [22]   Foraging (male)     Likely to occur

Scientific Name	Behaviour	Presence
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[Neophoca cinerea](#)

Australian Sea Lion [22]    Foraging (male and female)    Known to occur

[Neophoca cinerea](#)

Australian Sea Lion [22]    Foraging (male and female)    Likely to occur

**Sharks**    [Carcharodon carcharias](#)

White Shark [64470]    Foraging    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 brevipauda](#)

Pygmy Blue Whale [81317]    Distribution    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    Foraging Area (annual high use area)    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    Known Foraging Area    Known to occur

[Balaenoptera musculus brevipauda](#)

Pygmy Blue Whale [81317]    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

Scientific Name	Behaviour	Presence
<a href="#">Megaptera novaeangliae</a>		
Humpback Whale [38]	Migration (south)	Known to occur
<a href="#">Physeter macrocephalus</a>		
Sperm Whale [59]	Foraging (abundant food source)	Known to occur

## Caveat

### 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.

### 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

### 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

### 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.

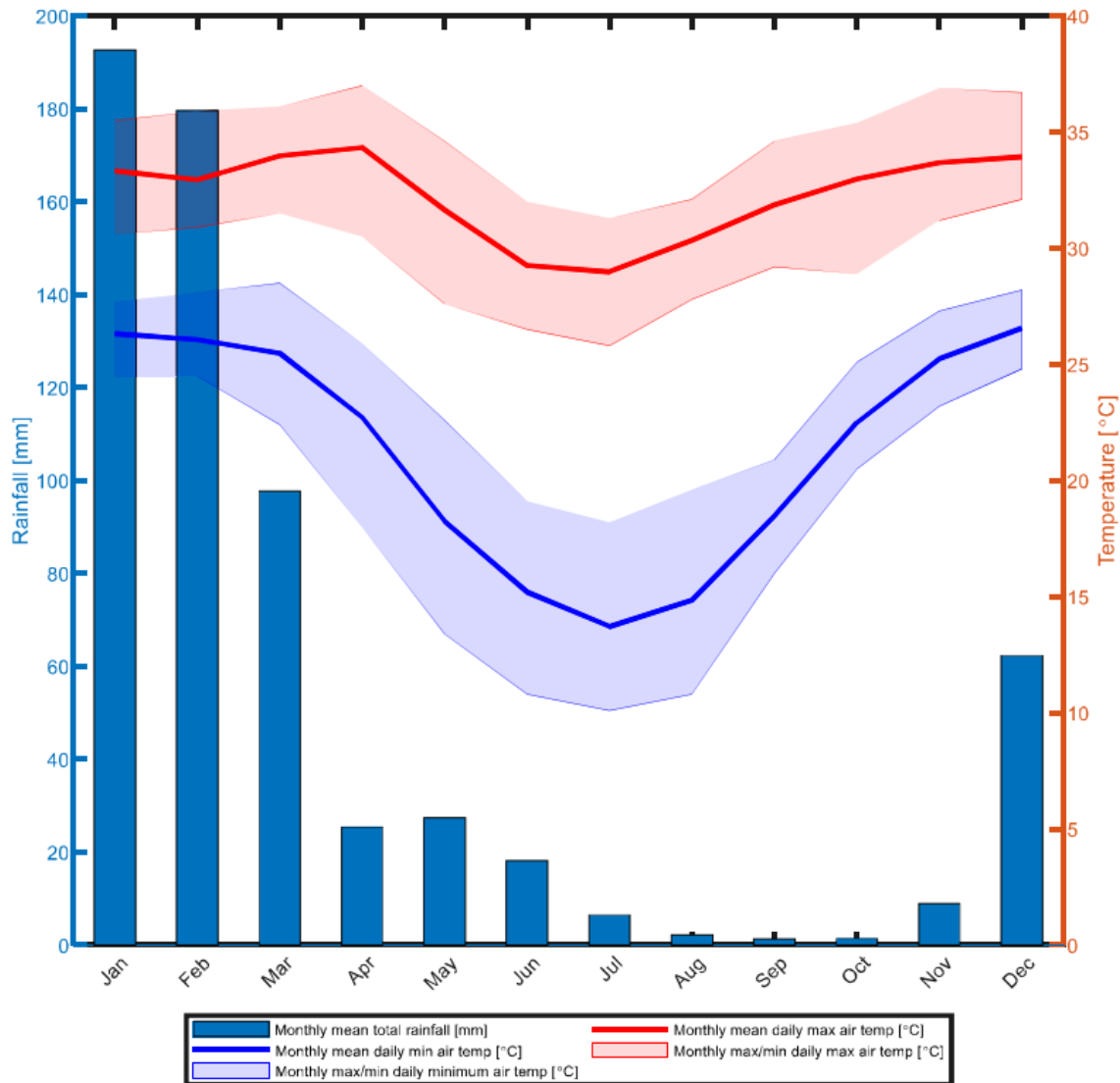
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+61 2 6274 1111

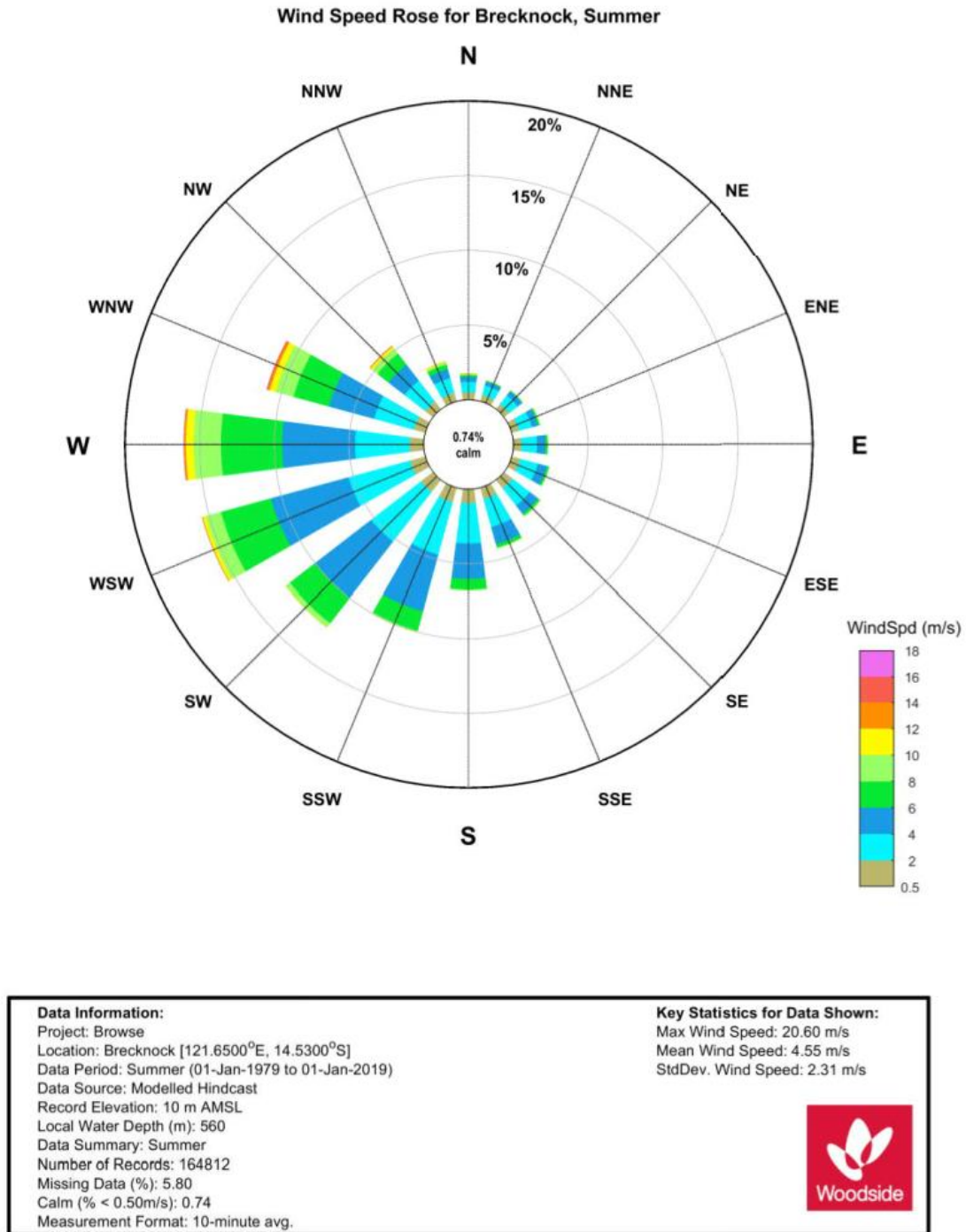


## APPENDIX B. SUPPORTING FIGURES FOR SECTION 2.3 METEOROLOGY AND OCEANOGRAPHY

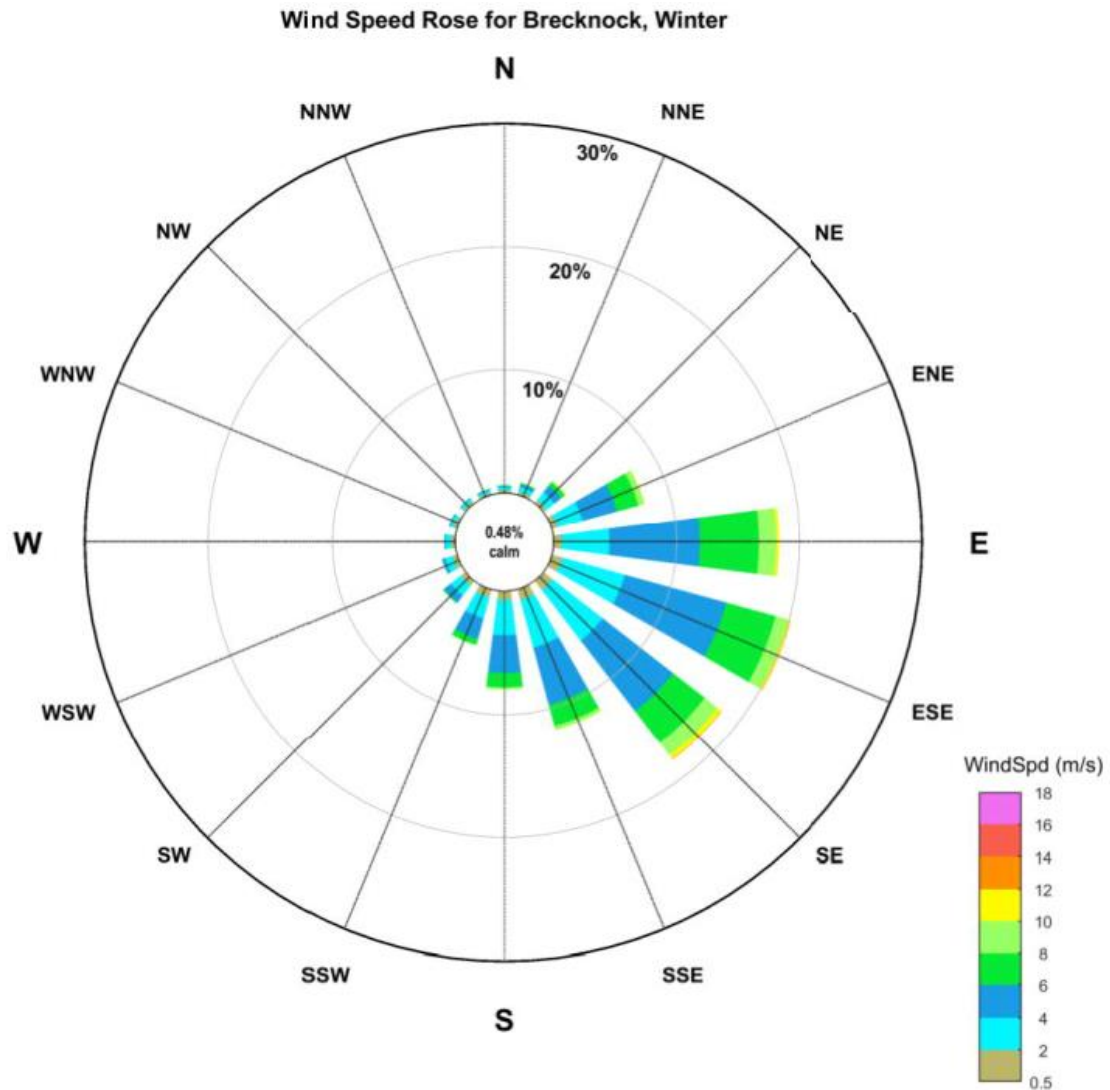
### Browse



**Figure B-1:** Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Broome Airport weather station from 1939 to 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.



**Figure B-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 west-northwest to southwest due to the North West Monsoon (Woodside, 2019).

**Data Information:**

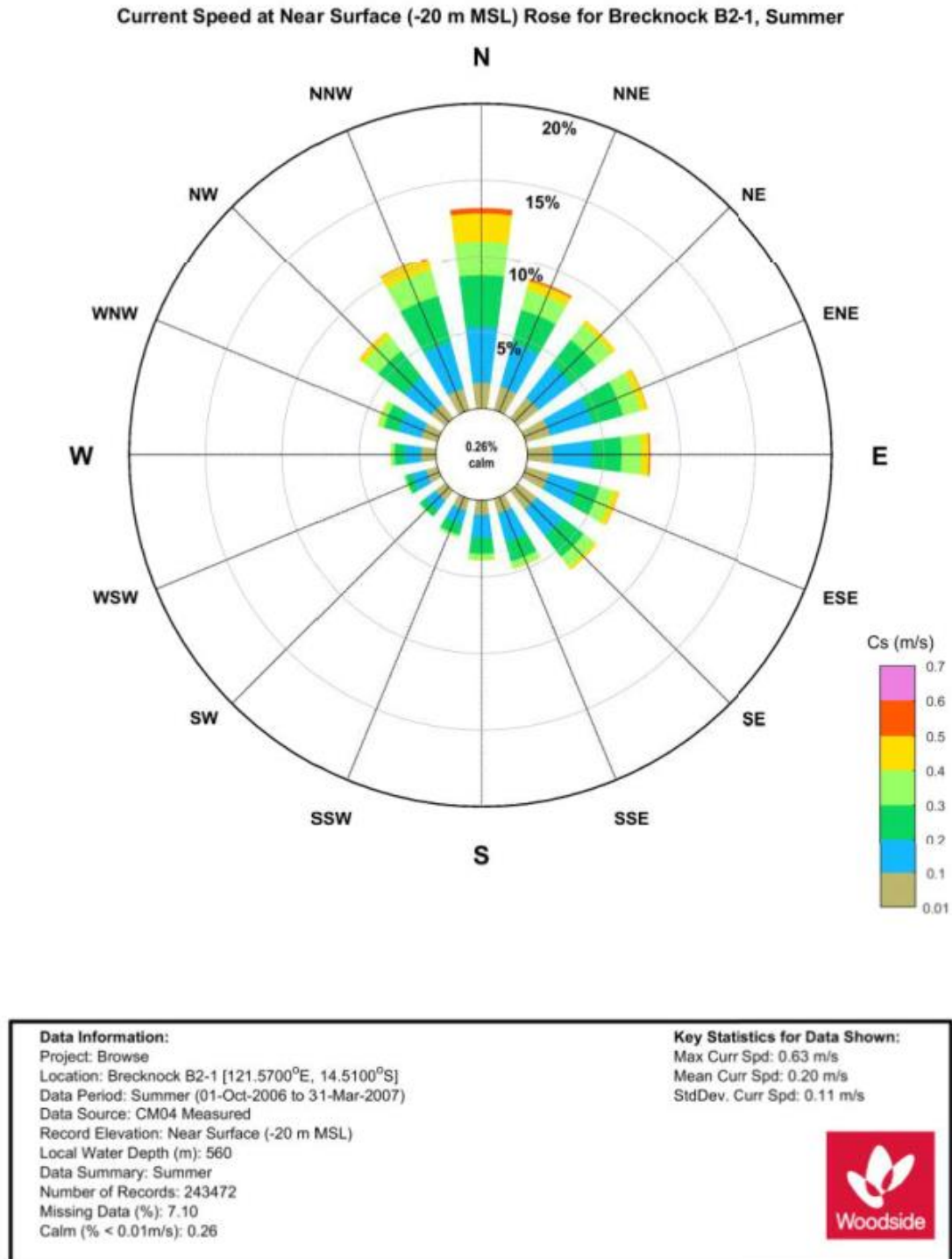
Project: Browse  
 Location: Brecknock [121.6500°E, 14.5300°S]  
 Data Period: Winter (01-Apr-1979 to 30-Sep-2018)  
 Data Source: Modelled Hindcast  
 Record Elevation: 10 m AMSL  
 Local Water Depth (m): 560  
 Data Summary: Winter  
 Number of Records: 173751  
 Missing Data (%): 1.10  
 Calm (% < 0.50m/s): 0.48  
 Measurement Format: 10-minute avg.

**Key Statistics for Data Shown:**

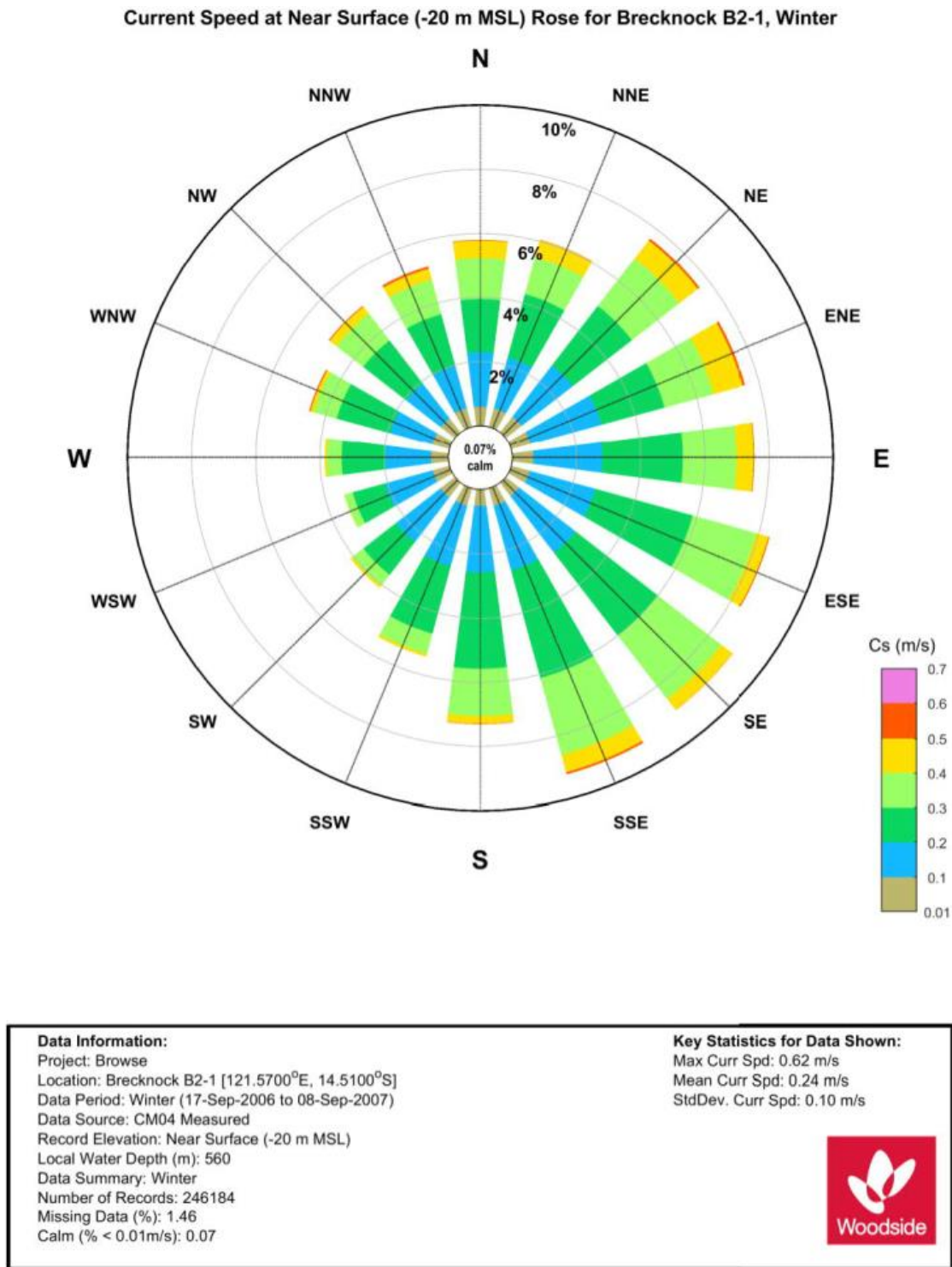
Max Wind Speed: 14.34 m/s  
 Mean Wind Speed: 4.71 m/s  
 StdDev. Wind Speed: 2.01 m/s



**Figure B-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 east to southeast due to the South East Trade Winds coming from the Australian mainland (Woodside, 2019).

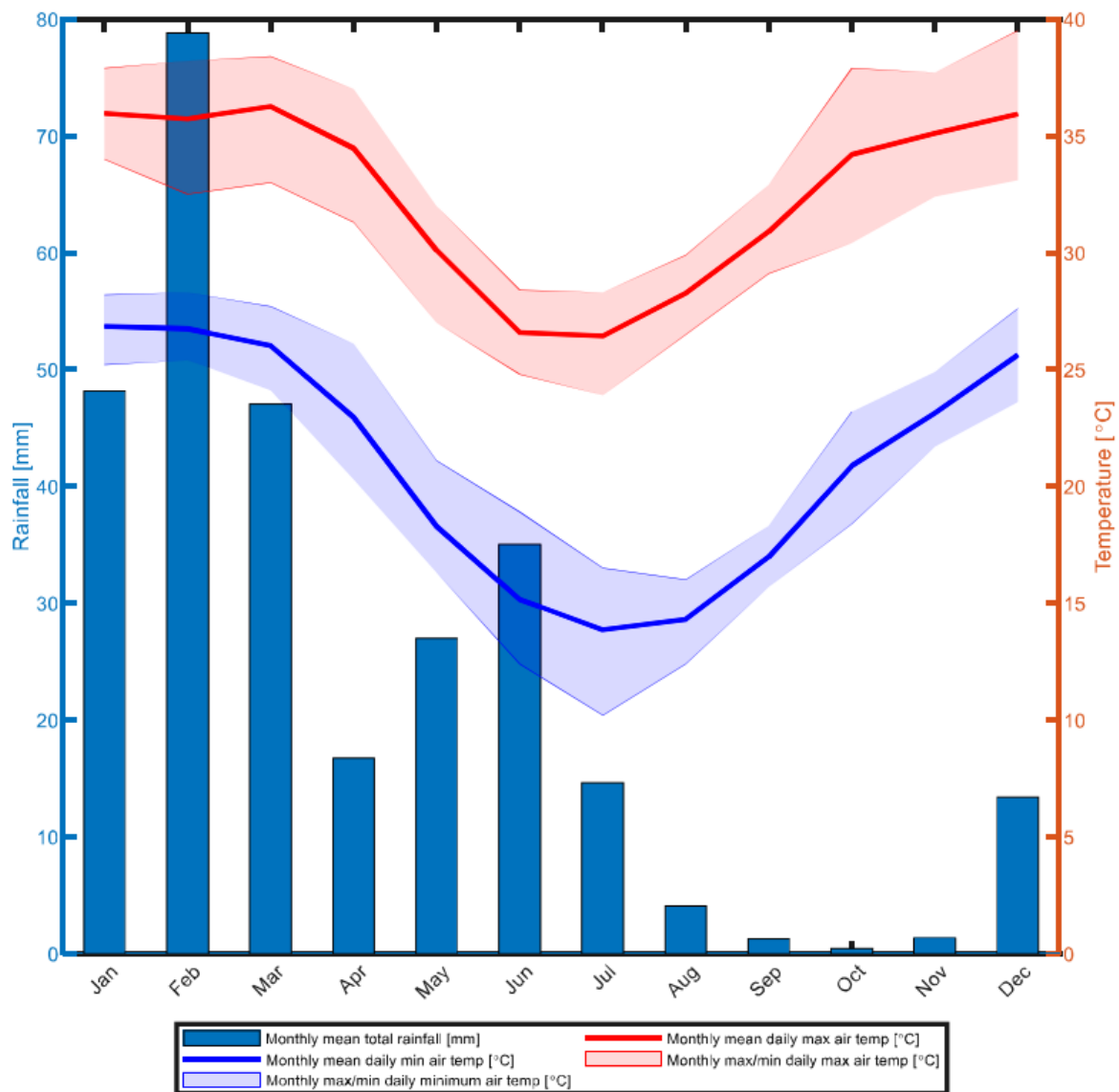


**Figure B-4:** Summer (Nov–Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd, 2008).



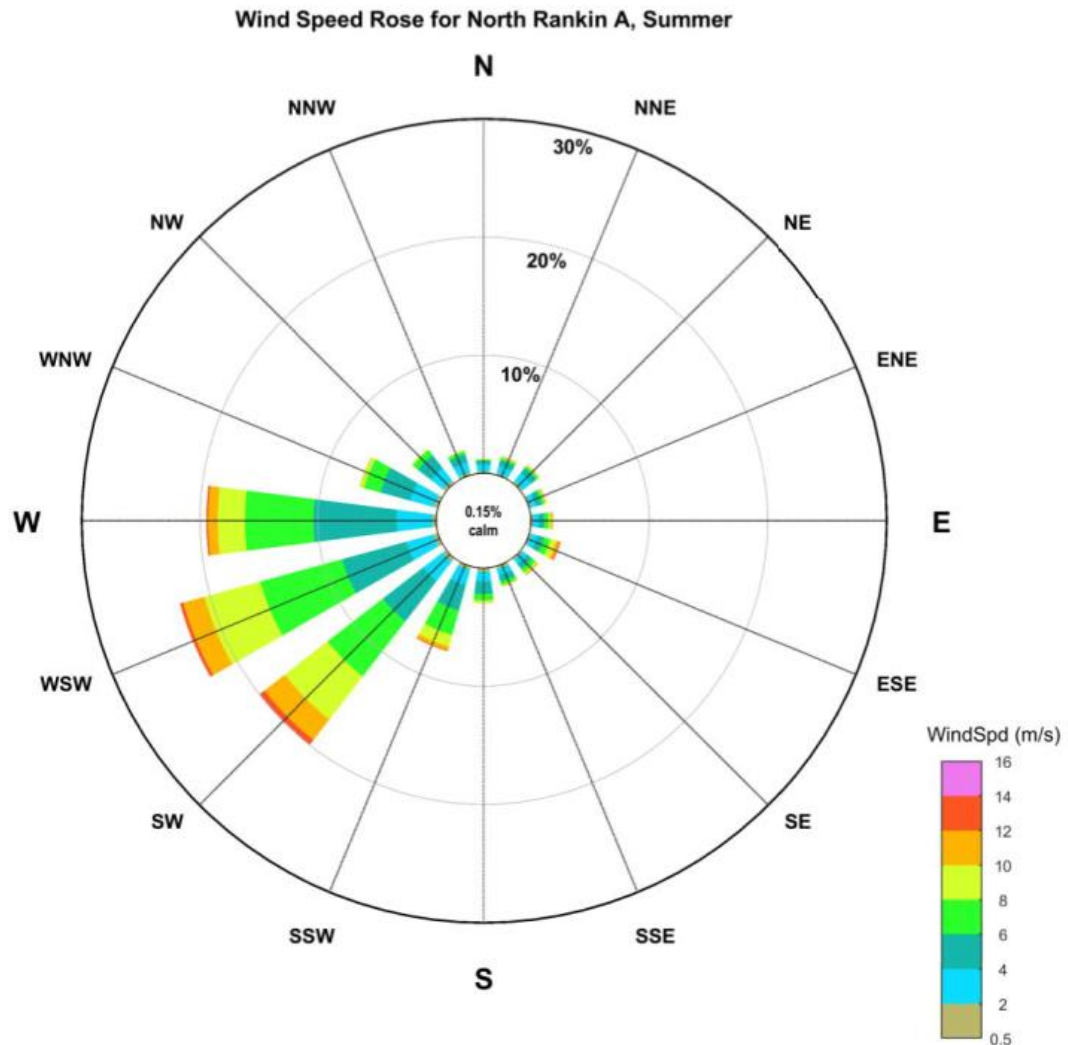
**Figure B-5:** Winter (May–Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at Brecknock B2-1 location (cyclones removed) (RPS Metocean Ltd, 2008).

## North West Shelf/Scarborough



**Figure B-6:** Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Karratha Aero weather station from 1972 to 2020 and 1993 to 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.





**Data Information:**

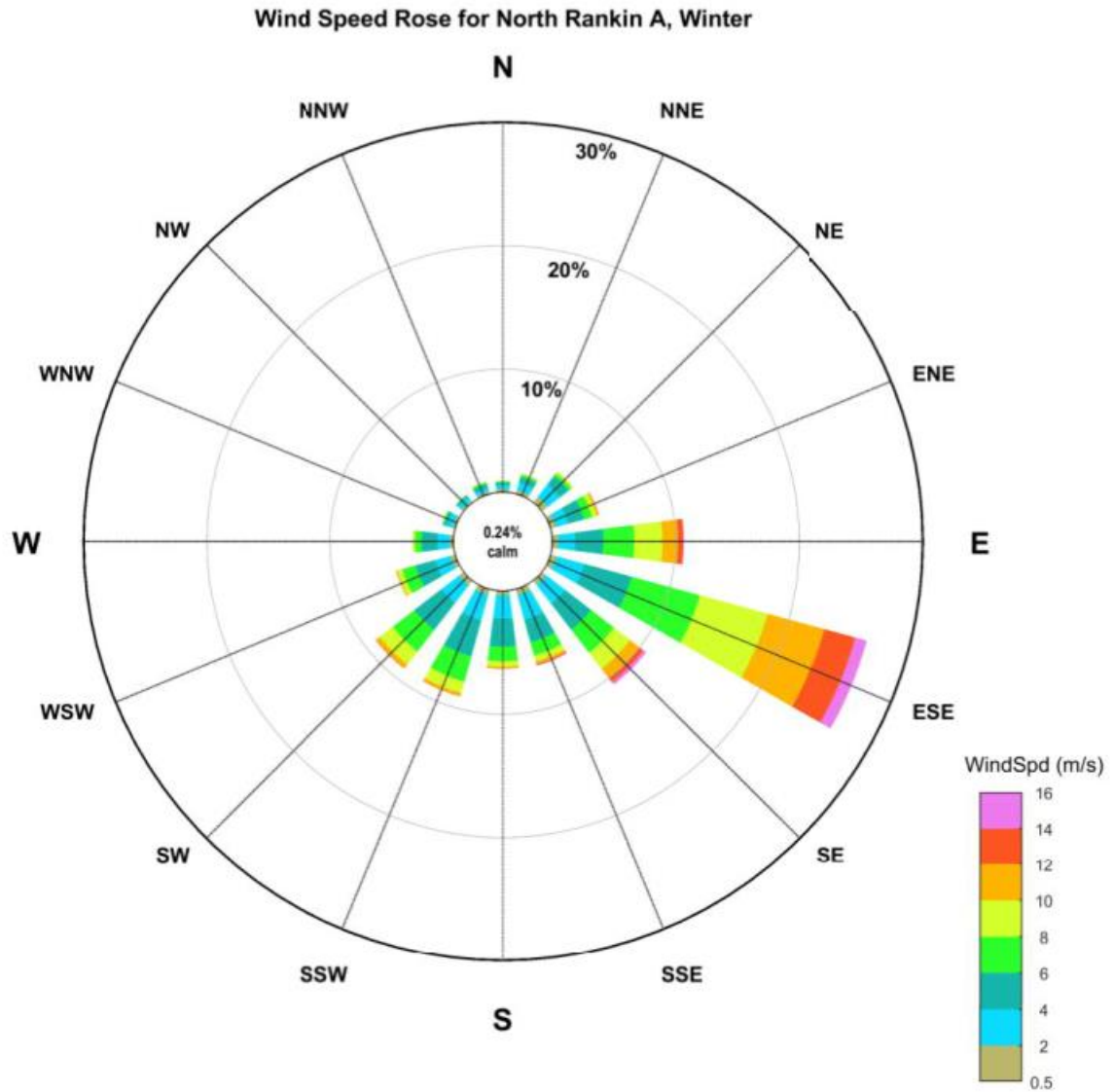
Project: North West Shelf  
 Location: North Rankin A [116.1200°E, 19.6100°S]  
 Data Period: Summer (01-Oct-1995 to 30-Nov-2015)  
 Data Source: Measured Winds  
 Record Elevation: 10 m AMSL  
 Local Water Depth (m): 125  
 Data Summary: Summer  
 Number of Records: 674659  
 Missing Data (%): 7.24  
 Calm (% < 0.50m/s): 0.15  
 Measurement Format: 10-minute avg.

**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



**Figure B-7:** Summer distributions of 10-minute average wind speeds by 22.5° directional sectors at the North Rankin A site (Woodside, 2015). Note, tropical cyclone events were not included in this distribution. North Rankin A in summer is characterised by west to southwesterly winds driven by the North West Monsoon (RPS, 2016).



**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.

**Key Statistics for Data Shown:**

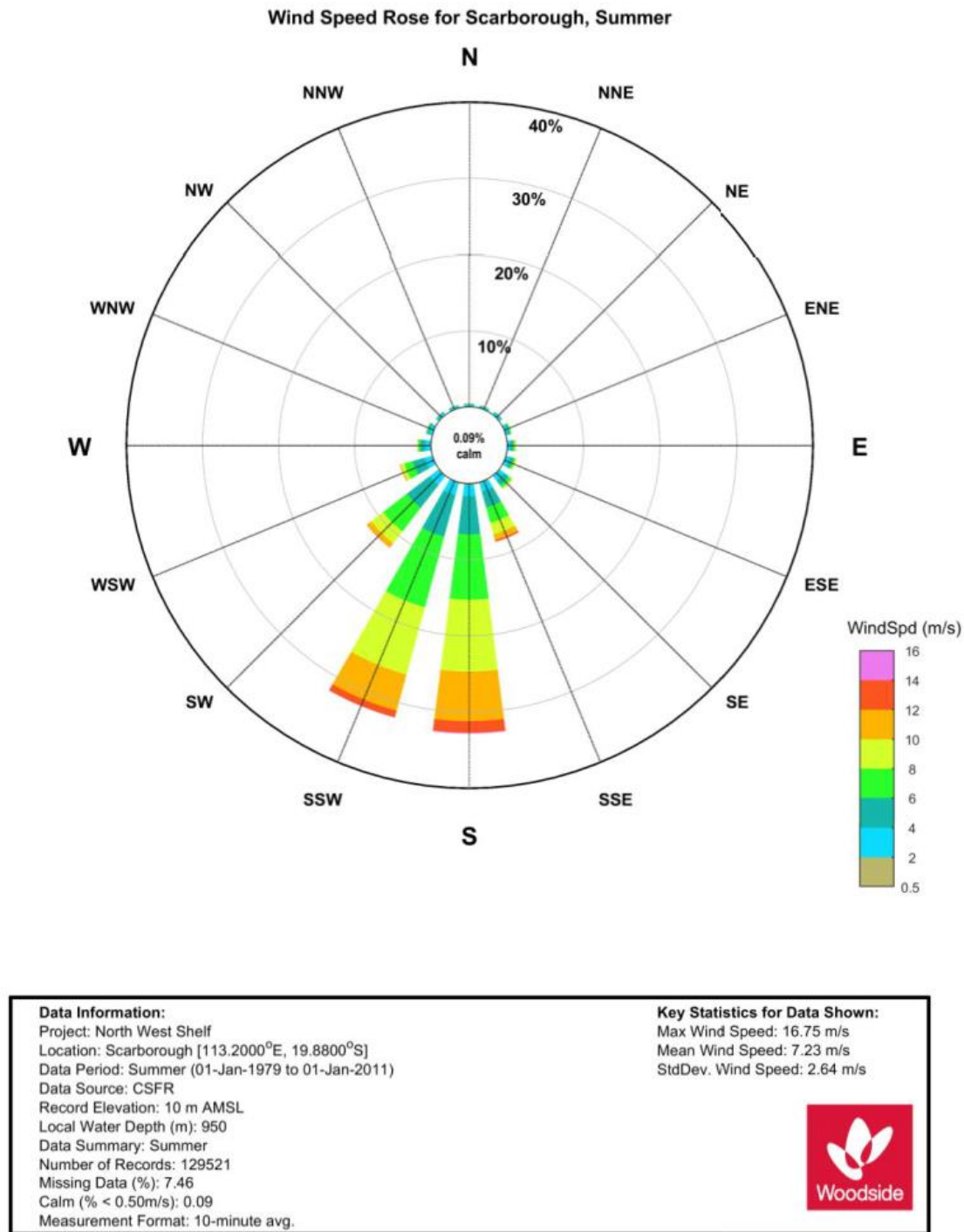
Max Wind Speed: 24.23 m/s  
 Mean Wind Speed: 6.25 m/s  
 StdDev. Wind Speed: 3.16 m/s



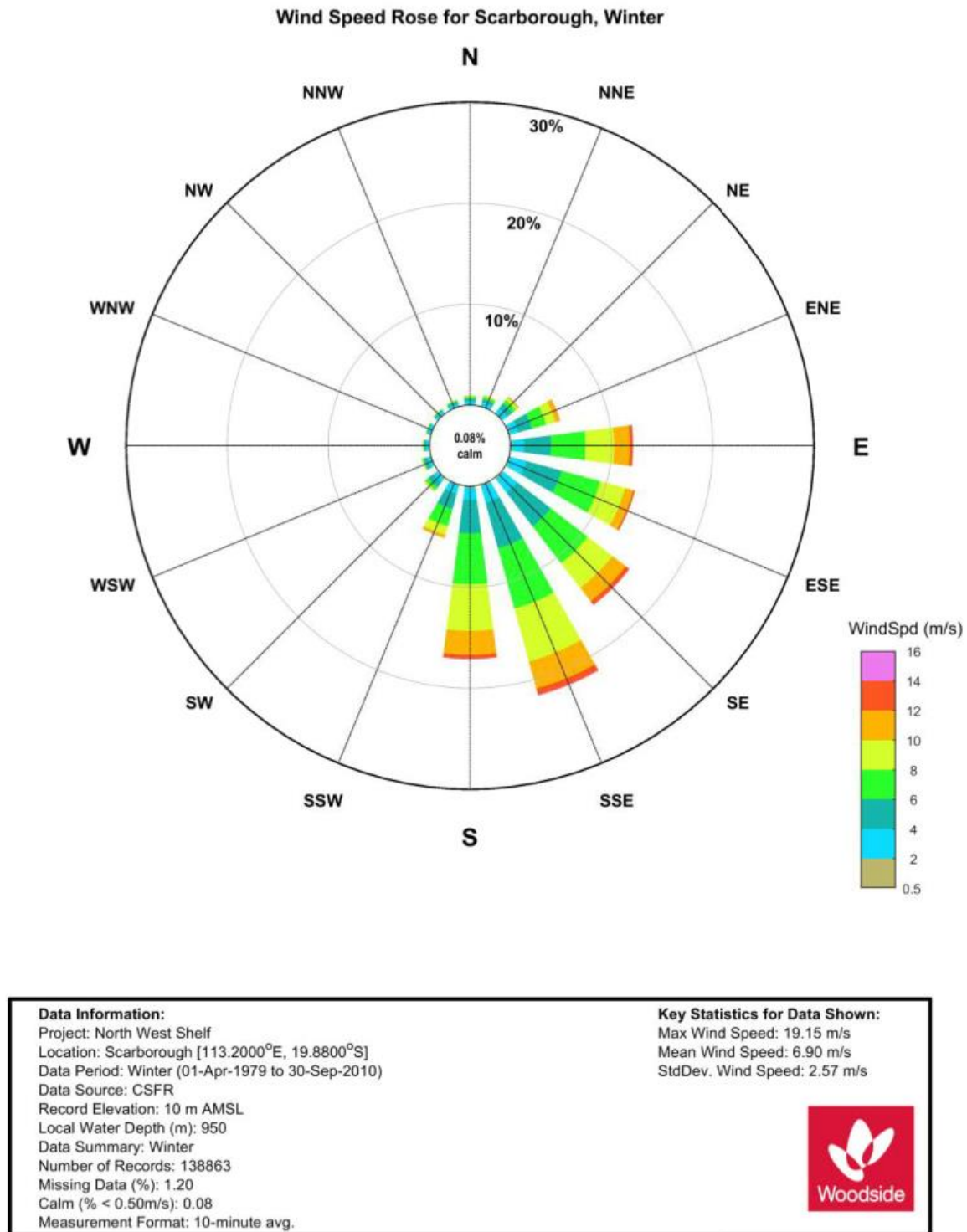
**Figure B-8:** Winter distributions of 10-minute average wind speeds by 22.5° directional sectors at the North Rankin A site (Woodside, 2015). Note, tropical cyclone events were not included in this distribution. Winds at North Rankin in winter are predominantly influenced by the South East Trade Winds over Australia (RPS, 2016).



## Scarborough

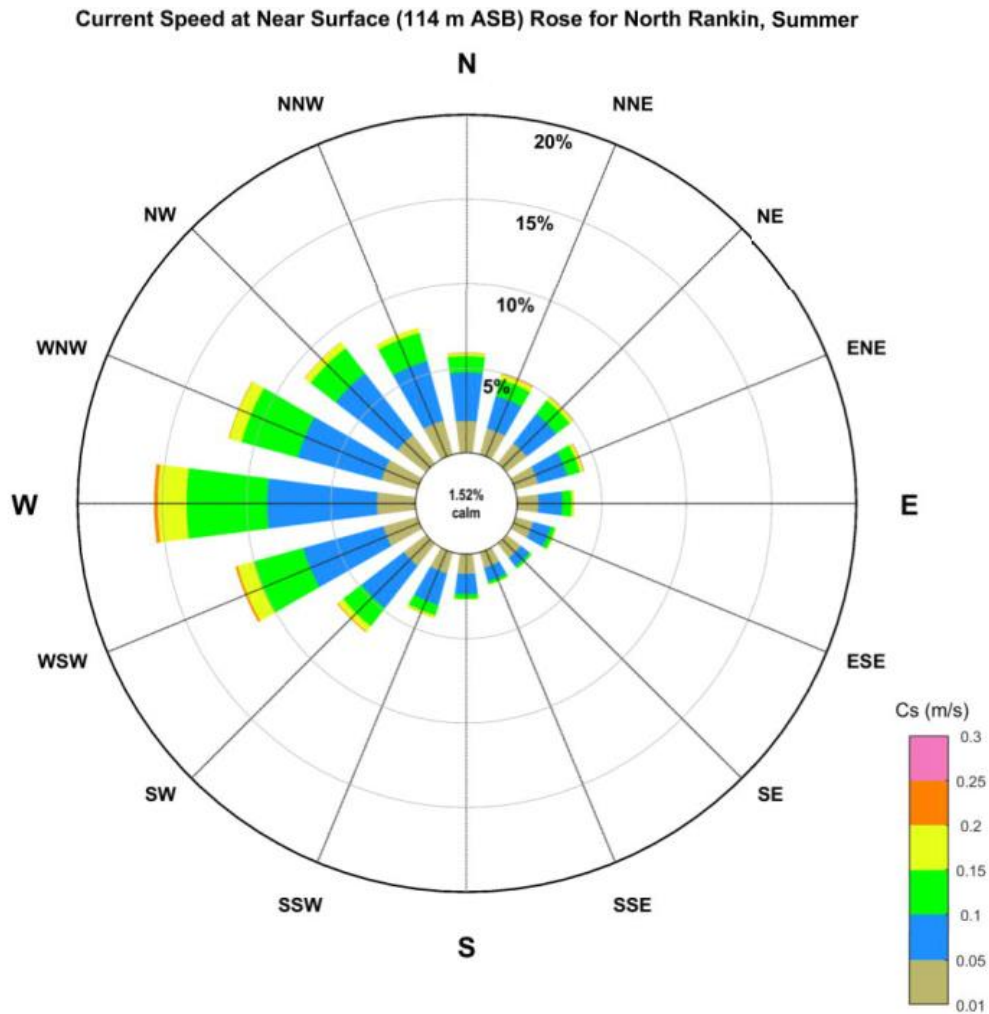


**Figure B-9:** Summer distributions of wind speeds (10-minute at 10 m above sea level) by 22.5° directional sectors at the Scarborough site (Woodside, 2018). Note, tropical cyclone events were not included in this distribution. Winds at Scarborough in summer are predominantly from the south to south-southwest, due to a Pilbara Heat Low forming over the northwest coast of Western Australia [R8]. Southwest winds are also experienced at this site due to the monsoon trough.



**Figure B-10:** Winter distributions of wind speeds (10-minute at 10 m above sea level) by 22.5° directional sectors at the Scarborough site (Woodside, 2018). Note, tropical cyclone events were not included in this distribution. Winds at Scarborough in winter are predominantly from the south to east, driven by the South East Trade Winds over Australia (RPS, 2016).

## North West Shelf



**Data Information:**

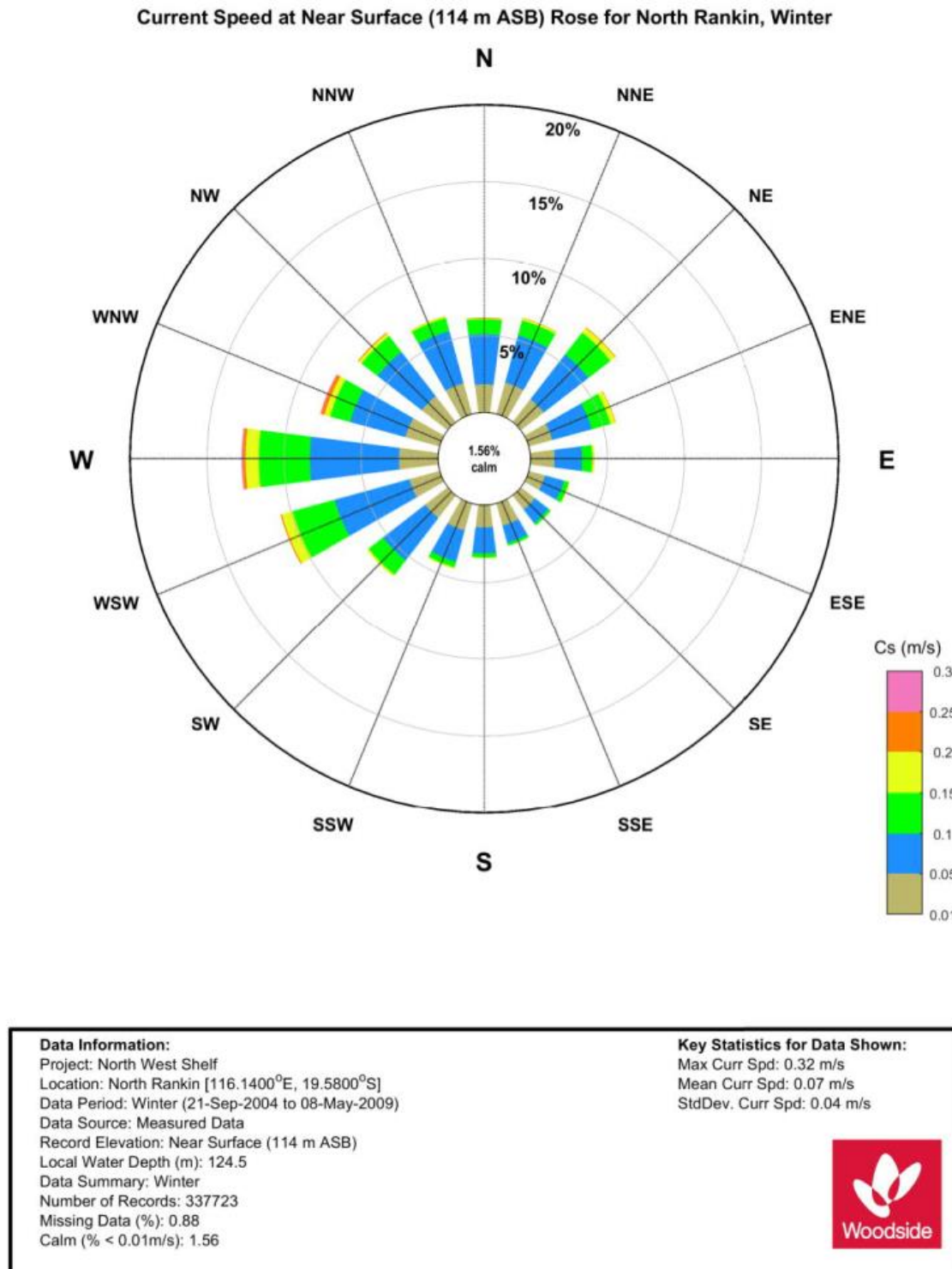
Project: North West Shelf  
 Location: North Rankin [116.1400°E, 19.5800°S]  
 Data Period: Summer (01-Oct-2004 to 31-Mar-2009)  
 Data Source: Measured Data  
 Record Elevation: Near Surface (114 m ASB)  
 Local Water Depth (m): 124.5  
 Data Summary: Summer  
 Number of Records: 496705  
 Missing Data (%): 6.63  
 Calm (% < 0.01m/s): 1.52

**Key Statistics for Data Shown:**

Max Curr Spd: 0.49 m/s  
 Mean Curr Spd: 0.08 m/s  
 StdDev. Curr Spd: 0.04 m/s

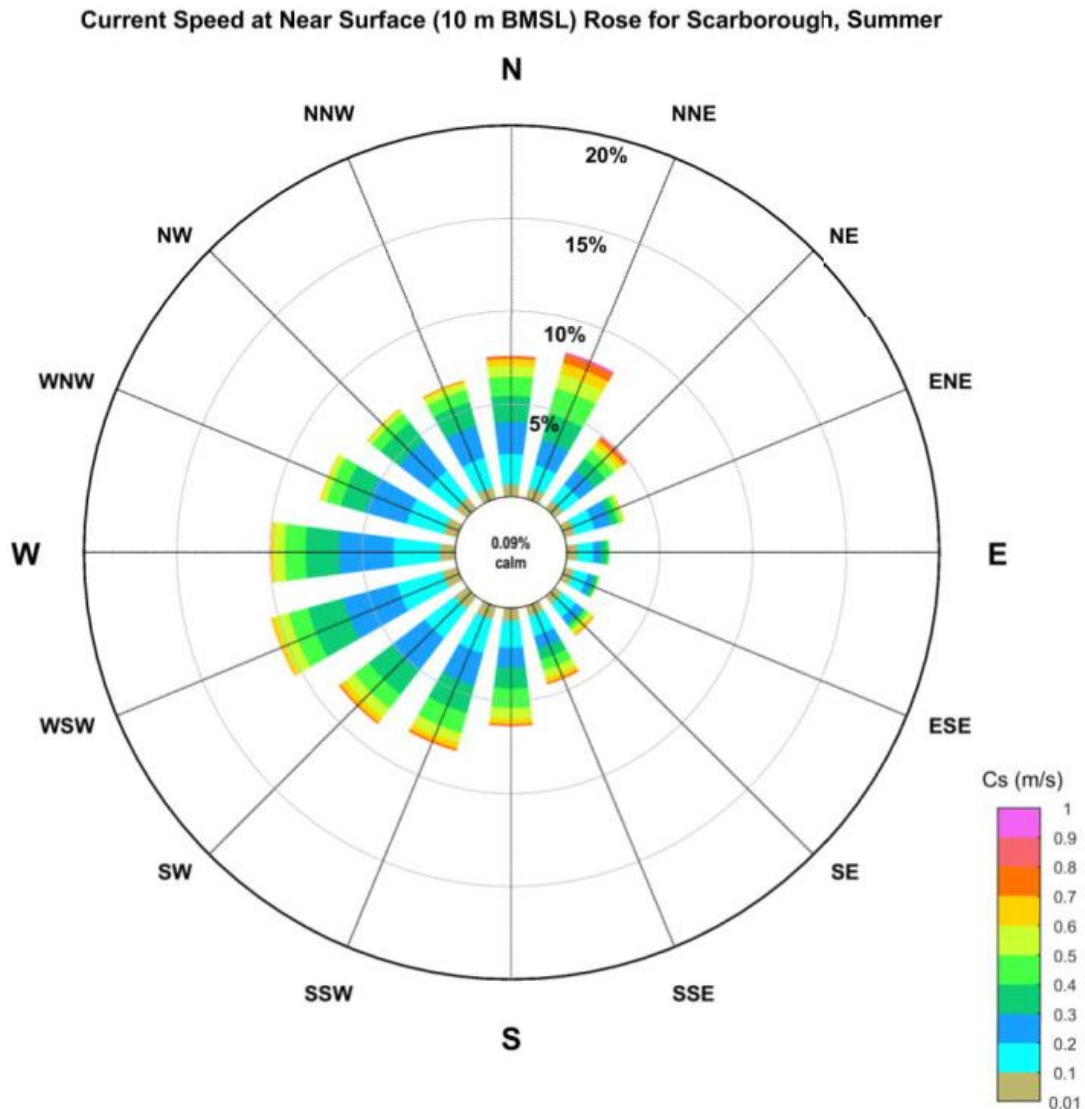


**Figure B-11:** Summer (Nov–Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (Woodside, 2011).



**Figure B-12:** Winter (May–Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the North Rankin location (cyclones removed) (Woodside, 2011).

## Scarborough



**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

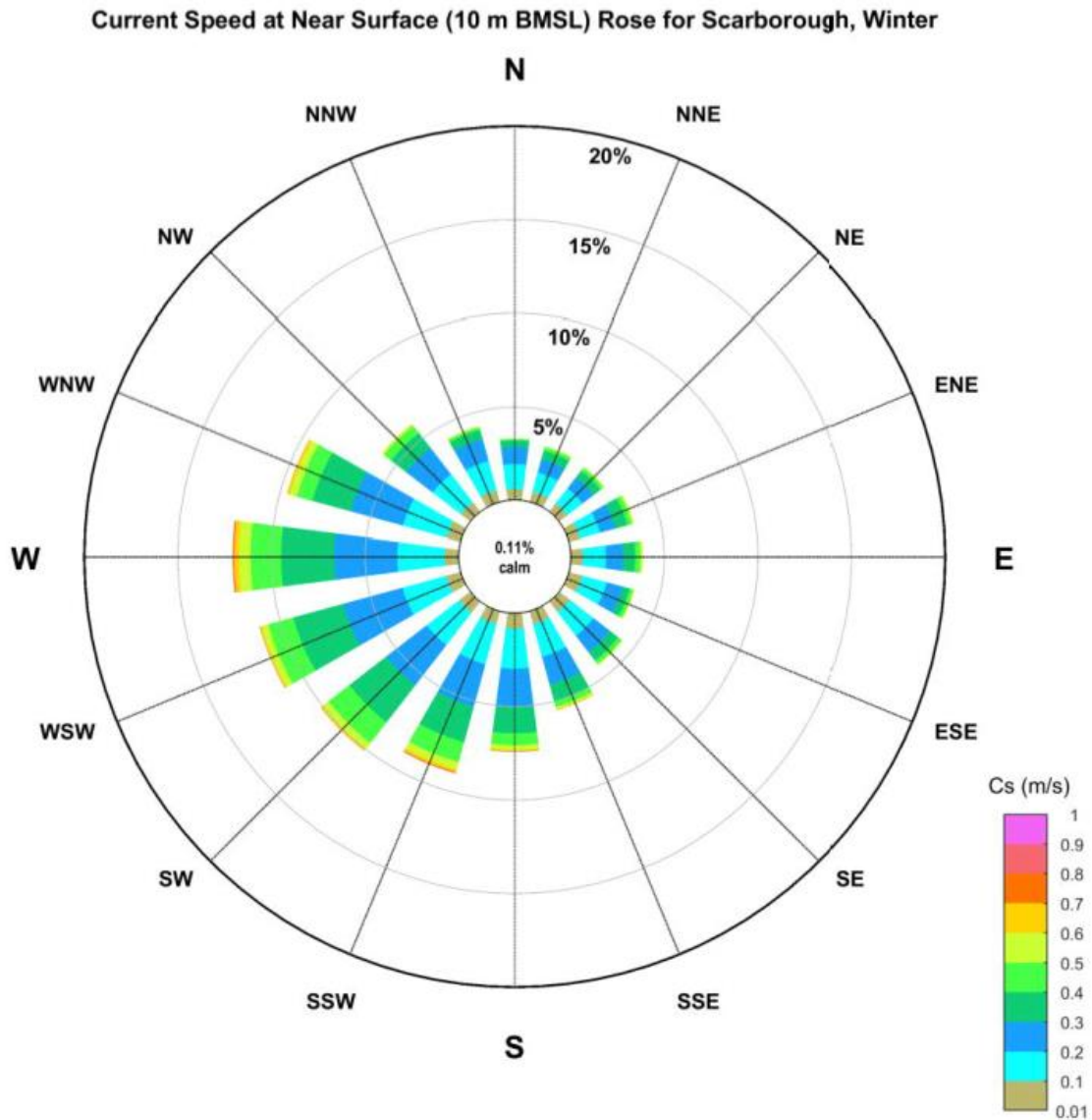
**Key Statistics for Data Shown:**

Max Curr Spd: 1.03 m/s  
 Mean Curr Spd: 0.29 m/s  
 StdDev. Curr Spd: 0.17 m/s



**Figure B-13:** Summer (Nov–April) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (Woodside, 2018).





**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

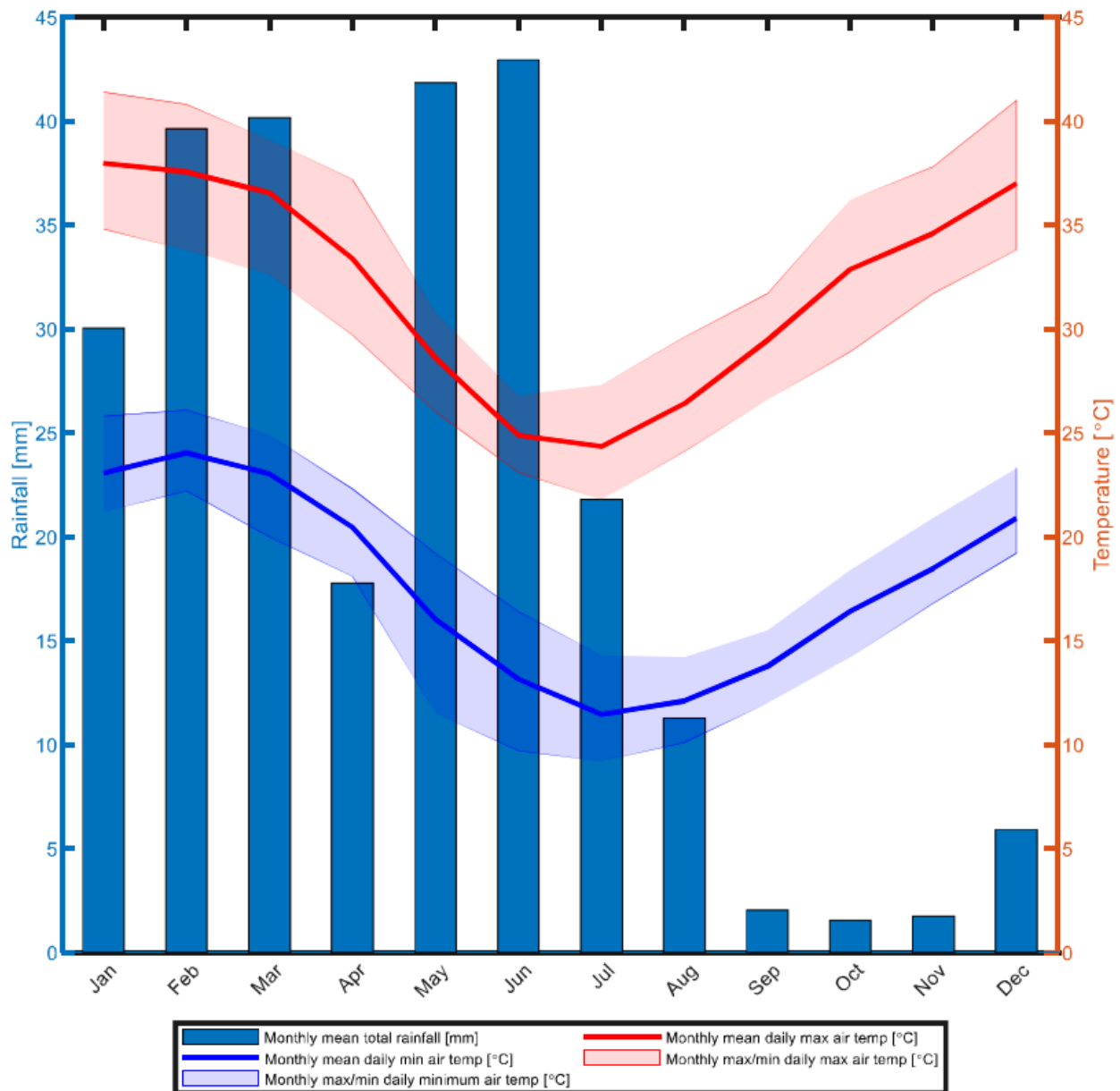
**Key Statistics for Data Shown:**

Max Curr Spd: 1.03 m/s  
 Mean Curr Spd: 0.25 m/s  
 StdDev. Curr Spd: 0.13 m/s

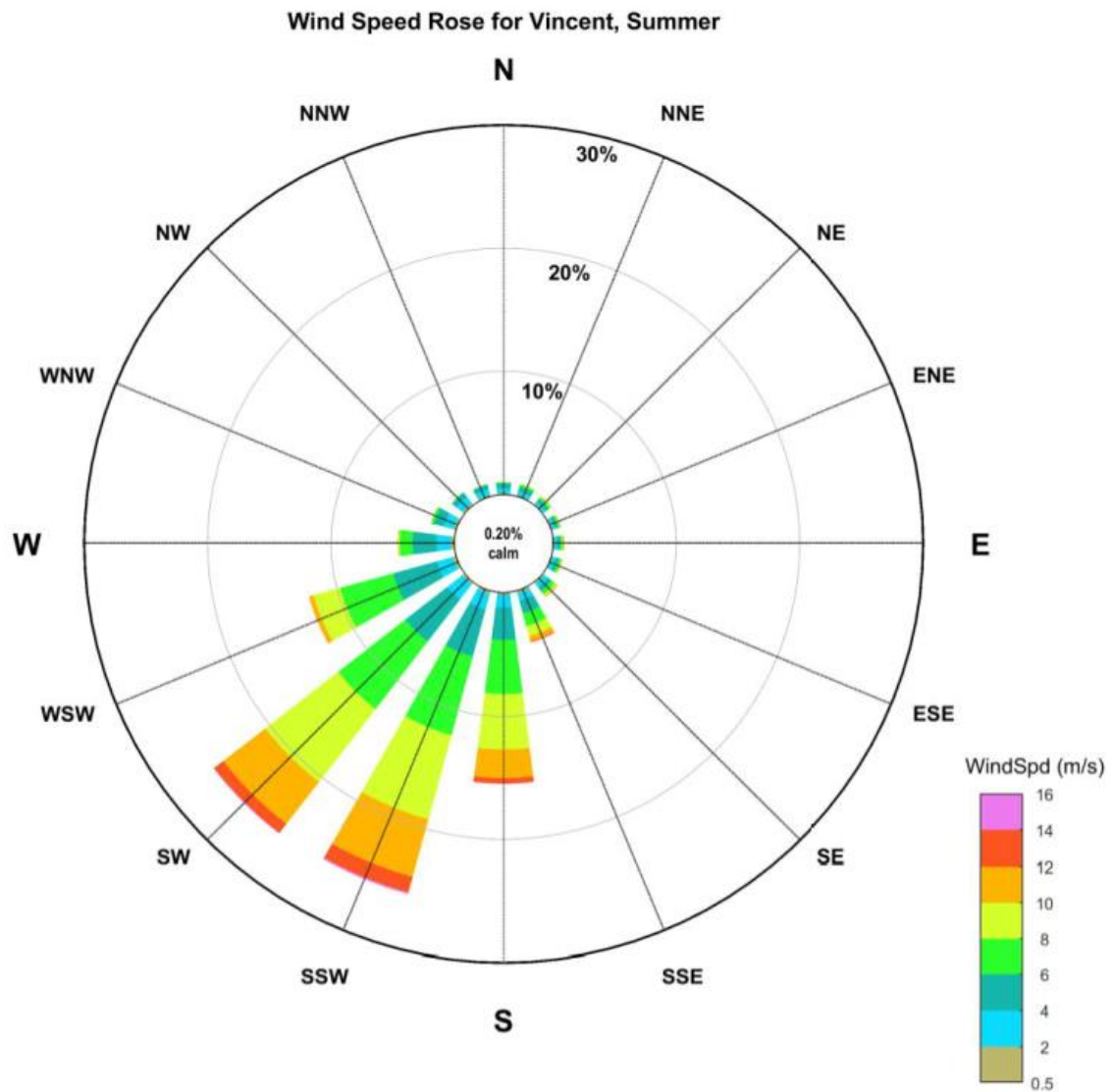


**Figure B-14:** Winter (May–Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Scarborough location (cyclones removed) (Woodside, 2018).

## North West Cape



**Figure B-15:** Monthly average total rainfall (mm) and air temperature (°C), calculated based on observations at the Learmonth Airport weather station from 1945 to 2020 and 1975 to 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.

**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.

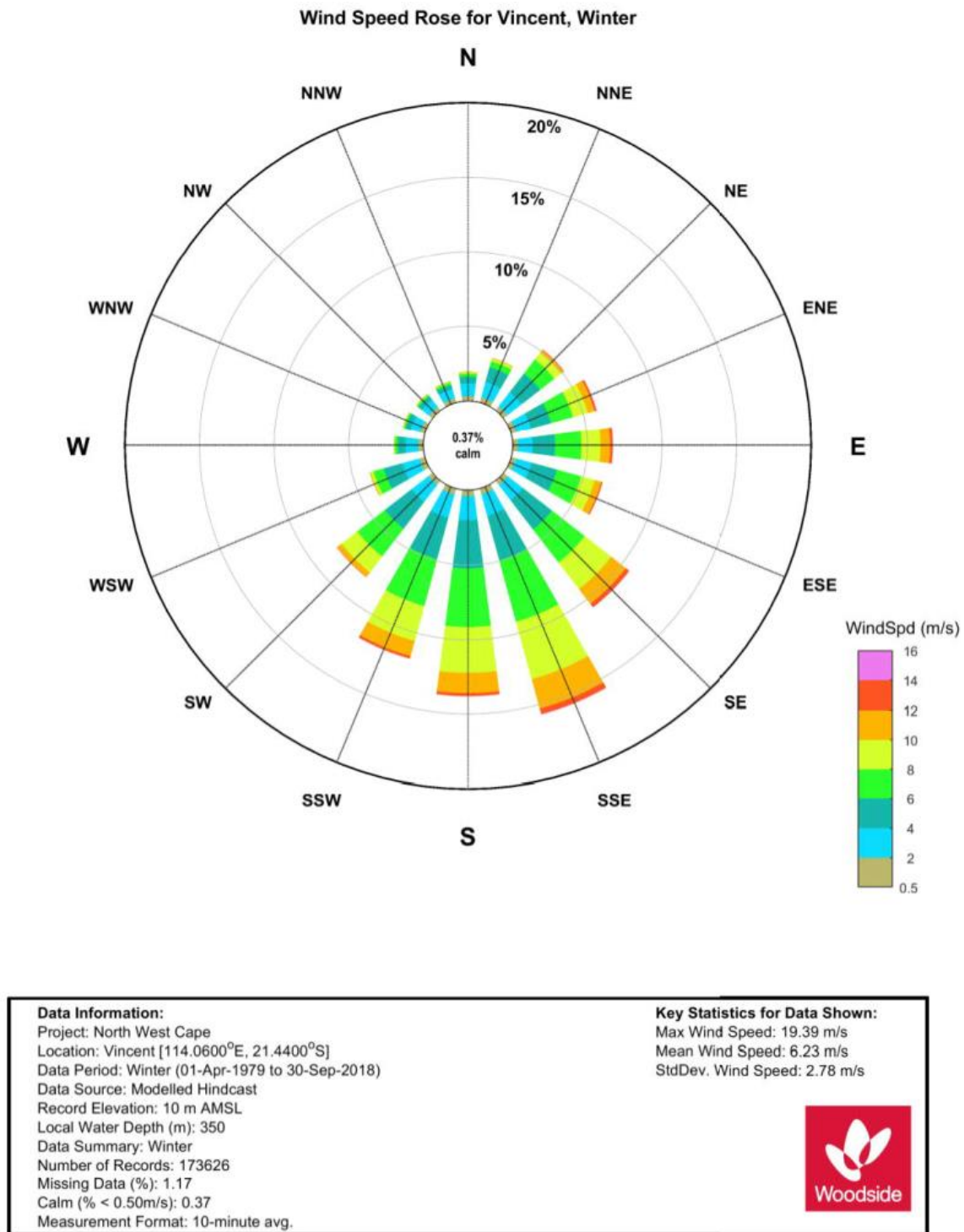
**Key Statistics for Data Shown:**

Max Wind Speed: 18.86 m/s  
 Mean Wind Speed: 7.10 m/s  
 StdDev. Wind Speed: 2.75 m/s

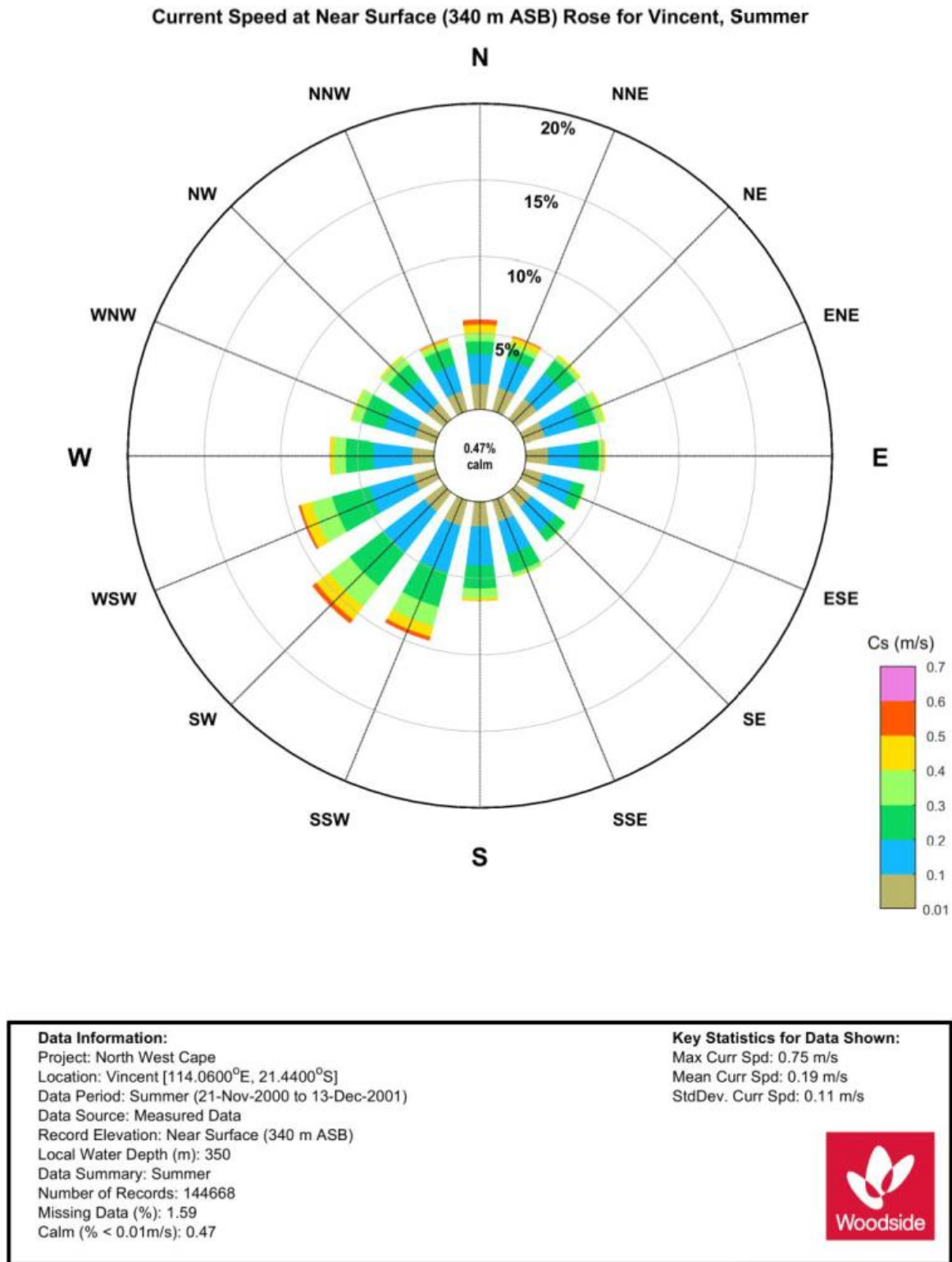


**Figure B-16:** Summer distributions of wind speeds (10-minute at 10 m above sea level) by 22.5° directional sectors at the Vincent site (Vincent Metocean). Note, tropical cyclone events were not included in this distribution. Winds at Vincent in summer are predominantly from the southwest to south-southwest in summer due to the presence of the Pilbara Heat Low (MetOcean Engineers, 2005).

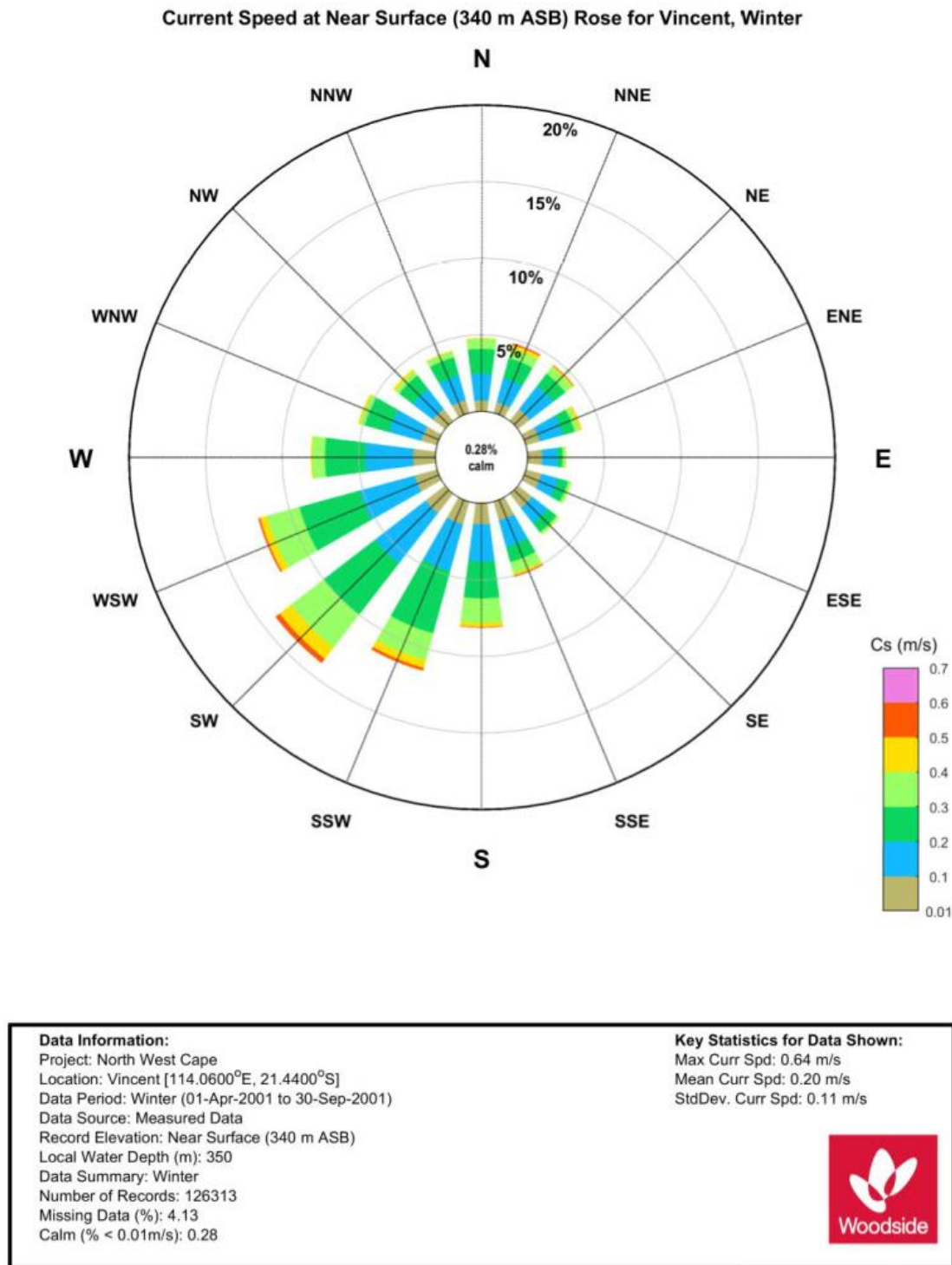




**Figure B-17:** Winter distributions of wind speeds (10-minute at 10 m above sea level) 22.5° directional sectors at the Vincent site (Vincent MetOcean). Note, tropical cyclone events were not included in this distribution. In winter, winds are predominantly from the south to southeast, associated with the South East Trade Winds. 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).



**Figure B-18:** Summer (May–Sep) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (Woodside, 2016).



**Figure B-19:** Winter (Nov–Apr) near-surface combined frequency of one-minute mean current speed and direction (towards) measured at the Vincent location (cyclones removed) (Woodside, 2016).

## References

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- Woodside, 2016. Vincent Basic Design Data Specification Sheet Metocean. CRN: VA0000RT1400067309.
- Woodside, 2018. Scarborough Development – Non-Cyclonic and Operational Metocean Design Criteria Spreadsheet, Revision A. CRN: SA0009CT1400722569.
- Woodside, 2019. Browse Development – Metocean Design Basis. CRN: JJ0013ST1400274448.

## **APPENDIX D   EPBC ACT PROTECTED MATTERS SEARCH TOOL RESULTS**

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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: 27-Sep-2024

[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](#).

<a href="#">World Heritage Properties:</a>	1
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance (Ramsar</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	2
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	29
<a href="#">Listed Migratory Species:</a>	47

## 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.

<a href="#">Commonwealth Lands:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	80
<a href="#">Whales and Other Cetaceans:</a>	30
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	2
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	3

## Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	2
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">EPBC Act Referrals:</a>	150
<a href="#">Key Ecological Features (Marine):</a>	5
<a href="#">Biologically Important Areas:</a>	15
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	None



# Details

## Matters of National Environmental Significance

World Heritage Properties			[ Resource Information ]
Name	State	Legal Status	
<a href="#">The Ningaloo Coast</a>	WA	Declared property	

National Heritage Places		[ Resource Information ]
Name	State	Legal Status
Natural		
<a href="#">The Ningaloo Coast</a>	WA	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)

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		
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Papasula abbotti</a> Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus fulvus</a> Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
SHARK		
<a href="#">Carcharias taurus (west coast population)</a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat known to occur within area

Listed Migratory Species	[ Resource Information ]	
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Ardenna carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat may occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
<a href="#">Anoxypristis cuspidata</a> Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
<a href="#">Balaenoptera bonaerensis</a> Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
<a href="#">Carcharias taurus</a> Grey Nurse Shark [64469]		Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Eubalaena australis as Balaena glacialis australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
<a href="#">Isurus paucus</a> Longfin Mako [82947]		Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Breeding known to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Sousa sahalensis as Sousa chinensis</a> Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
Migratory Wetlands Species		

Scientific Name	Threatened Category	Presence Text
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area

### Other Matters Protected by the EPBC Act

Listed Marine Species	[ <a href="#">Resource Information</a> ]	
Scientific Name	Threatened Category	Presence Text
Bird		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna carneipes as Puffinus carneipes</a> Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Papasula abbotti</a> Abbott's Booby [59297]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
<a href="#">Phaethon lepturus fulvus</a> Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
<a href="#">Pterodroma mollis</a> Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche carteri</a> Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalasseus bengalensis as Sterna bengalensis</a> Lesser Crested Tern [66546]		Breeding known to occur within area
Fish		
<a href="#">Acentronura larsonae</a> Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
<a href="#">Bulbonaricus brauni</a> Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
<a href="#">Campichthys tricarinatus</a> Three-keel Pipefish [66192]		Species or species habitat may occur within area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Choeroichthys latispinosus</a> Muiron Island Pipefish [66196]		Species or species habitat may occur within area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
<a href="#">Corythoichthys flavofasciatus</a> Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
<a href="#">Cosmocampus banneri</a> Roughridge Pipefish [66206]		Species or species habitat may occur within area
<a href="#">Doryrhamphus dactyliophorus</a> Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
<a href="#">Doryrhamphus excisus</a> Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
<a href="#">Doryrhamphus janssi</a> Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area
<a href="#">Doryrhamphus multiannulatus</a> Many-banded Pipefish [66717]		Species or species habitat may occur within area
<a href="#">Doryrhamphus negrosensis</a> Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
<a href="#">Festucalex scalaris</a> Ladder Pipefish [66216]		Species or species habitat may occur within area
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]		Species or species habitat may occur within area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
<a href="#">Halicampus nitidus</a> Glittering Pipefish [66224]		Species or species habitat may occur within area
<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
<a href="#">Haliichthys taeniophorus</a> Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area
<a href="#">Hippocampus spinosissimus</a> Hedgehog Seahorse [66239]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hippocampus trimaculatus</a> Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
<a href="#">Micrognathus micronotopterus</a> Tidepool Pipefish [66255]		Species or species habitat may occur within area
<a href="#">Phoxocampus belcheri</a> Black Rock Pipefish [66719]		Species or species habitat may occur within area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
<a href="#">Solegnathus lettiensis</a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Mammal		
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
Reptile		
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Aipysurus duboisii</a> Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Aipysurus laevis</a> Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area
<a href="#">Aipysurus mosaicus as Aipysurus eydouxii</a> Mosaic Sea Snake [87261]		Species or species habitat may occur within area
<a href="#">Aipysurus tenuis</a> Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Emydocephalus annulatus</a> Eastern Turtle-headed Sea Snake [1125]		Species or species habitat may occur within area
<a href="#">Ephalophis greyae as Ephalophis greyi</a> Mangrove Sea Snake [93738]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Hydrelaps darwiniensis</a> Port Darwin Sea Snake, Black-ringed Mangrove Sea Snake [1100]		Species or species habitat may occur within area
<a href="#">Hydrophis czeblukovi</a> Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis kingii as Disteira kingii</a> Spectacled Sea Snake [93511]		Species or species habitat may occur within area
<a href="#">Hydrophis macdowellii as Hydrophis mcdowellii</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
<a href="#">Hydrophis major as Disteira major</a> Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
<a href="#">Hydrophis ornatus</a> Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
<a href="#">Hydrophis peronii as Acalyptophis peronii</a> Horned Sea Snake [93509]		Species or species habitat may occur within area
<a href="#">Hydrophis platura as Pelamis platurus</a> Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
<a href="#">Hydrophis stokesii as Astrotia stokesii</a> Stokes' Sea Snake [93510]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area

Whales and Other Cetaceans

[ [Resource Information](#) ]

Current Scientific Name	Status	Type of Presence
Mammal		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area
<a href="#">Balaenoptera bonaerensis</a> Antarctic Minke Whale, Dark-shoulder Minke Whale [67812]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Migration route known to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Eubalaena australis</a> Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area



Current Scientific Name	Status	Type of Presence
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]		Species or species habitat may occur within area
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
<a href="#">Lagenodelphis hosei</a> Fraser's Dolphin, Sarawak Dolphin [41]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Breeding known to occur within area
<a href="#">Mesoplodon densirostris</a> Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area
<a href="#">Orcaella heinsohni</a> Australian Snubfin Dolphin [81322]		Species or species habitat may occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area



Current Scientific Name	Status	Type of Presence
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]		Species or species habitat likely to occur within area
<a href="#">Sousa sahalensis</a> Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area
<a href="#">Ziphius cavirostris</a> 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)	

Park Name	Zone & IUCN Categories		
Montebello	Multiple Use Zone (IUCN VI)		

Habitat Critical to the Survival of Marine Turtles		[ Resource Information ]
Scientific Name	Behaviour	Presence
Aug - Sep		
<a href="#">Natator depressus</a>		
Flatback Turtle [59257]	Nesting	Known to occur
Dec - Jan		
<a href="#">Chelonia mydas</a>		
Green Turtle [1765]	Nesting	Known to occur
Nov - May		
<a href="#">Eretmochelys imbricata</a>		
Hawksbill Turtle [1766]	Nesting	Known to occur

Extra Information

State and Territory Reserves			[ Resource Information ]
Protected Area Name	Reserve Type	State	
Montebello Islands	Marine Park	WA	
Muiron Islands	Marine Management Area	WA	

EPBC Act Referrals			[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Browse to North West Shelf Development, Indian Ocean, WA</a>	2018/8319		Approval
<a href="#">Gorgon Gas Development</a>	2003/1294		Post-Approval
<a href="#">Project Highclere Cable Lay and Operation</a>	2022/09203		Completed
Action clearly unacceptable			
<a href="#">Highlands 3D Marine Seismic Survey</a>	2012/6680	Action Clearly Unacceptable	Completed
Controlled action			
<a href="#">'Van Gogh' Petroleum Field Development</a>	2007/3213	Controlled Action	Post-Approval
<a href="#">Construct and operate LNG &amp; domestic gas plant including onshore and offshore facilities - Wheatston</a>	2008/4469	Controlled Action	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
<a href="#">Develop Jansz-lo deepwater gas field in Permit Areas WA-18-R, WA-25-R and WA-26-</a>	2005/2184	Controlled Action	Post-Approval
<a href="#">Development of Angel gas and condensate field, North West Shelf</a>	2004/1805	Controlled Action	Post-Approval
<a href="#">Development of Browse Basin Gas Fields (Upstream)</a>	2008/4111	Controlled Action	Completed
<a href="#">Development of Coniston/Novara fields within the Exmouth Sub-basin</a>	2011/5995	Controlled Action	Post-Approval
<a href="#">Development of Stybarrow petroleum field incl drilling and facility installation</a>	2004/1469	Controlled Action	Post-Approval
<a href="#">Echo-Yodel Production Wells</a>	2000/11	Controlled Action	Post-Approval
<a href="#">Enfield full field development</a>	2001/257	Controlled Action	Post-Approval
<a href="#">Equus Gas Fields Development Project, Carnarvon Basin</a>	2012/6301	Controlled Action	Completed
<a href="#">Gorgon Gas Development 4th Train Proposal</a>	2011/5942	Controlled Action	Post-Approval
<a href="#">Greater Enfield (Vincent) Development</a>	2005/2110	Controlled Action	Post-Approval
<a href="#">Light Crude Oil Production</a>	2001/365	Controlled Action	Post-Approval
<a href="#">Pluto Gas Project</a>	2005/2258	Controlled Action	Completed
<a href="#">Pluto Gas Project Including Site B</a>	2006/2968	Controlled Action	Post-Approval
<a href="#">Pyrenees Oil Fields Development</a>	2005/2034	Controlled Action	Post-Approval
<a href="#">The Scarborough Project - FLNG &amp; assoc subsea infrastructure, Carnarvon Basin</a>	2013/6811	Controlled Action	Post-Approval
<a href="#">Vincent Appraisal Well</a>	2000/22	Controlled Action	Post-Approval
Not controlled action			
<a href="#">'Goodwyn A' Low Pressure Train Project</a>	2003/914	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">'Van Gogh' Oil Appraisal Drilling Program, Exploration Permit Area WA-155-P(1)</a>	2006/3148	Not Controlled Action	Completed
<a href="#">Bollinger 2D Seismic Survey 200km North of North West Cape WA</a>	2004/1868	Not Controlled Action	Completed
<a href="#">Carnarvon 3D Marine Seismic Survey</a>	2004/1890	Not Controlled Action	Completed
<a href="#">Cazadores 2D seismic survey</a>	2004/1720	Not Controlled Action	Completed
<a href="#">Construction and operation of an unmanned sea platform and connecting pipeline to Varanus Island for</a>	2004/1703	Not Controlled Action	Completed
<a href="#">Development of Halyard Field off the west coast of WA</a>	2010/5611	Not Controlled Action	Completed
<a href="#">Development of Mutineer and Exeter petroleum fields for oil production, Permit</a>	2003/1033	Not Controlled Action	Completed
<a href="#">Drilling of an exploration well Gats-1 in Permit Area WA-261-P</a>	2004/1701	Not Controlled Action	Completed
<a href="#">Echo A Development WA-23-L, WA-24-L</a>	2005/2042	Not Controlled Action	Completed
<a href="#">Exploration drilling well WA-155-P(1)</a>	2003/971	Not Controlled Action	Completed
<a href="#">Exploration of appraisal wells</a>	2006/3065	Not Controlled Action	Completed
<a href="#">Exploration Well in Permit Area WA-155-P(1)</a>	2002/759	Not Controlled Action	Completed
<a href="#">Exploratory drilling in permit area WA-225-P</a>	2001/490	Not Controlled Action	Completed
<a href="#">HCA05X Macedon Experimental Survey</a>	2004/1926	Not Controlled Action	Completed
<a href="#">Hess Exploration Drilling Programme</a>	2007/3566	Not Controlled Action	Completed
<a href="#">Infill Production Well (Griffin-9)</a>	2001/417	Not Controlled Action	Completed
<a href="#">Jansz-2 and 3 Appraisal Wells</a>	2002/754	Not Controlled Action	Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Klammer 2D Seismic Survey</a>	2002/868	Not Controlled Action	Completed
<a href="#">Maia-Gaea Exploration wells</a>	2000/17	Not Controlled Action	Completed
<a href="#">Manaslu - 1 and Huascaran - 1 Offshore Exploration Wells</a>	2001/235	Not Controlled Action	Completed
<a href="#">North Rankin B gas compression facility</a>	2005/2500	Not Controlled Action	Completed
<a href="#">Pipeline System Modifications Project</a>	2000/3	Not Controlled Action	Completed
<a href="#">Project Highclere Geophysical Survey</a>	2021/9023	Not Controlled Action	Completed
<a href="#">Searipple gas and condensate field development</a>	2000/89	Not Controlled Action	Completed
<a href="#">Subsea Gas Pipeline From Stybarrow Field to Griffin Venture Gas Export Pipeline</a>	2005/2033	Not Controlled Action	Completed
<a href="#">sub-sea tieback of Perseus field wells</a>	2004/1326	Not Controlled Action	Completed
<a href="#">Telstra North Rankin Spur Fibre Optic Cable</a>	2016/7836	Not Controlled Action	Completed
<a href="#">To construct and operate an offshore submarine fibre optic cable, WA</a>	2014/7373	Not Controlled Action	Completed
<a href="#">WA-295-P Kerr-McGee Exploration Wells</a>	2001/152	Not Controlled Action	Completed
<a href="#">Wanda Offshore Research Project, 80 km north-east of Exmouth, WA</a>	2018/8293	Not Controlled Action	Completed
<a href="#">Western Flank Gas Development</a>	2005/2464	Not Controlled Action	Completed
<a href="#">Wheatstone 3D seismic survey, 70km north of Barrow Island</a>	2004/1761	Not Controlled Action	Completed
Not controlled action (particular manner)			
<a href="#">'Kate' 3D marine seismic survey, exploration permits WA-320-P and WA-345-P, 60km</a>	2005/2037	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">'Tourmaline' 2D marine seismic survey, permit areas WA-323-P, WA-330-P and WA-32</a>	2005/2282	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">"Leanne" offshore 3D seismic exploration, WA-356-P</a>	2005/1938	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D and 3D seismic surveys</a>	2005/2151	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey</a>	2005/2146	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D Seismic Survey Permit Area WA-352-P</a>	2008/4628	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">2D seismic survey within permit WA-291</a>	2007/3265	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey (WA-482-P, WA-363-P), WA</a>	2013/6761	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">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</a>	2003/1271	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Survey in WA 457-P &amp; WA 458-P, North West Shelf, offshore WA</a>	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Marine Seismic Surveys - Contos CT-13 &amp; Supertubes CT-13, offshore WA</a>	2013/6901	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D seismic survey</a>	2006/2715	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D Seismic Survey, WA</a>	2008/4428	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D sesmic survey</a>	2006/2781	Not Controlled Action (Particular	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)		Manner)	
<a href="#">Apache Northwest Shelf Van Gogh Field Appraisal Drilling Program</a>	2007/3495	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Aperio 3D Marine Seismic Survey, WA</a>	2012/6648	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Artemis-1 Drilling Program (WA-360-P)</a>	2010/5432	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Babylon 3D Marine Seismic Survey, Commonwealth Waters, nr Exmouth WA</a>	2013/7081	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Balnaves Condensate Field Development</a>	2011/6188	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cable Seismic Exploration Permit areas WA-323-P and WA-330-P</a>	2008/4227	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CGGVERITAS 2010 2D Seismic Survey</a>	2010/5714	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Charon 3D Marine Seismic Survey</a>	2007/3477	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P</a>	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">CVG 3D Marine Seismic Survey</a>	2012/6654	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">DAVROS MC 3D marine seismic survey northwaet of Dampier, WA</a>	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Decommissioning of the Legendre facilities</a>	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Deep Water Drilling Program</a>	2010/5532	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Deep Water Northwest Shelf 2D Seismic Survey</a>	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Demeter 3D Seismic Survey, off Dampier, WA</a>	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Draeck 3D Marine Seismic Survey, WA-205-P</a>	2006/3067	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Drilling 35-40 offshore exploration wells in deep water</a>	2008/4461	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Eendracht Multi-Client 3D Marine Seismic Survey</a>	2009/4749	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Effect of marine seismic sounds to demersal fish and pearl oysters, north-west WA</a>	2018/8169	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Enfield M3 &amp; Vincent 4D Marine Seismic Surveys</a>	2008/3981	Not Controlled Action (Particular Manner)	Completed
<a href="#">Enfield M3 4D, Vincent 4D &amp; 4D Line Test Marine Seismic Surveys</a>	2008/4122	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Enfield M4 4D Marine Seismic Survey</a>	2008/4558	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Enfield oilfield 3D Seismic Survey</a>	2006/3132	Not Controlled Action (Particular	Post-Approval



Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)		Manner)	
<a href="#">Exmouth West 2D Marine Seismic Survey</a>	2008/4132	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Exploration drilling of Zeus-1 well</a>	2008/4351	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Fletcher-Finucane Development, WA26-L and WA191-P</a>	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Foxhound 3D Non-Exclusive Marine Seismic Survey</a>	2009/4703	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Gazelle 3D Marine Seismic Survey in WA-399-P and WA-42-L</a>	2010/5570	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Geco Eagle 3D Marine Seismic Survey</a>	2008/3958	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Glencoe 3D Marine Seismic Survey WA-390-P</a>	2007/3684	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Greater Western Flank Phase 1 gas Development</a>	2011/5980	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Grimalkin 3D Seismic Survey</a>	2008/4523	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Harmony 3D Marine Seismic Survey</a>	2012/6699	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Honeycombs MC3D Marine Seismic Survey</a>	2012/6368	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Huzzas MC3D Marine Seismic Survey (HZ-13) Carnarvon Basin, offshore WA</a>	2013/7003	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Huzzas phase 2 marine seismic survey, Exmouth Plateau, Northern Carnarvon Basin, WA</a>	2013/7093	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">John Ross &amp; Rosella Off Bottom Cable Seismic Exploration Program</a>	2008/3966	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Julimar Brunello Gas Development Project</a>	2011/5936	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Klimt 2D Marine Seismic Survey</a>	2007/3856	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Laverda 3D Marine Seismic Survey and Vincent M1 4D Marine Seismic Survey</a>	2010/5415	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Lion 2D Marine Seismic Survey</a>	2007/3777	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Macedon Gas Field Development</a>	2008/4605	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Moosehead 2D seismic survey within permit WA-192-P</a>	2005/2167	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Munmorah 2D seismic survey within permits WA-308/9-P</a>	2003/970	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)		Manner)	
<a href="#">Ocean Bottom Cable Seismic Program, WA-264-P</a>	2007/3844	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Ocean Bottom Cable Seismic Survey</a>	2005/2017	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Canning Multi Client 2D Marine Seismic Survey</a>	2010/5393	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Drilling Campaign</a>	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Orcus 3D Marine Seismic Survey in WA-450-P</a>	2010/5723	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Osprey and Dionysus Marine Seismic Survey</a>	2011/6215	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pomodoro 3D Marine Seismic Survey in WA-426-P and WA-427-P</a>	2010/5472	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pyrenees 4D Marine Seismic Monitor Survey, HCA12A</a>	2012/6579	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Pyrenees-Macedon 3D marine seismic survey</a>	2005/2325	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Reindeer gas reservior development, Devil Creek, Carnarvon Basin - WA</a>	2007/3917	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Rose 3D Seismic Program</a>	2008/4239	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Rydal-1 Petroleum Exploration Well, WA</a>	2012/6522	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Santos Winchester three dimensional seismic survey - WA-323-P &amp; WA-330-P</a>	2011/6107	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Stag 4D &amp; Reindeer MAZ Marine Seismic Surveys, WA</a>	2013/7080	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Stag Off-bottom Cable Seismic Survey</a>	2007/3696	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Stybarrow 4D Marine Seismic Survey</a>	2011/5810	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Stybarrow Baseline 4D marine seismic survey</a>	2008/4530	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Tidepole Maz 3D Seismic Survey Campaign</a>	2007/3706	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Triton 3D Marine Seismic Survey, WA-2-R and WA-3-R</a>	2006/2609	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Undertake a 3D marine seismic survey</a>	2010/5695	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Undertake a three dimensional marine seismic survey</a>	2010/5715	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Vincent M1 and Enfield M5 4D Marine Seismic Survey</a>	2010/5720	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Warramunga Non-Inclusive 3D Seismic Survey</a>	2008/4553	Not Controlled Action (Particular	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
		Manner)	
<a href="#">West Anchor 3D Marine Seismic Survey</a>	2008/4507	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">West Panaeus 3D seismic survey</a>	2006/3141	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Westralia SPAN Marine Seismic Survey, WA &amp; NT</a>	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone 3D MAZ Marine Seismic Survey</a>	2011/6058	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone Iago Appraisal Well Drilling</a>	2007/3941	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Wheatstone Iago Appraisal Well Drilling</a>	2008/4134	Not Controlled Action (Particular Manner)	Post-Approval
Referral decision			
<a href="#">3D Seismic Survey</a>	2008/4219	Referral Decision	Completed
<a href="#">Bianchi 3D Marine Seismic Survey, Carnavon Basin, WA</a>	2013/7078	Referral Decision	Completed
<a href="#">CVG 3D Marine Seismic Survey</a>	2012/6270	Referral Decision	Completed
<a href="#">Enfield 4D Marine Seismic Surveys, Production Permit WA-28-L</a>	2005/2370	Referral Decision	Completed
<a href="#">Rose 3D Seismic acquisition survey</a>	2008/4220	Referral Decision	Completed
<a href="#">Stybarrow Baseline 4D Marine Seismic Survey (Permit Areas WA-255-P, WA-32-L, WA-</a>	2008/4165	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
<a href="#">Ancient coastline at 125 m depth contour</a>	North-west
<a href="#">Canyons linking the Cuvier Abyssal Plain and the Cape Range Peninsula</a>	North-west
<a href="#">Continental Slope Demersal Fish Communities</a>	North-west
<a href="#">Exmouth Plateau</a>	North-west
<a href="#">Glomar Shoals</a>	North-west

Biologically Important Areas

[ Resource Information ]

Scientific Name	Behaviour	Presence
Marine Turtles		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Internesting buffer	Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Foraging	Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Internesting	Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Internesting buffer	Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Mating	Known to occur
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Nesting	Known to occur
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Internesting buffer	Known to occur
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Internesting buffer	Known to occur
Seabirds		
<a href="#">Ardenna pacifica</a> Wedge-tailed Shearwater [84292]	Breeding	Known to occur

Scientific Name	Behaviour	Presence
<a href="#">Sterna dougallii</a> Roseate Tern [817]	Breeding	Known to occur
<a href="#">Sternula nereis</a> Fairy Tern [82949]	Breeding	Known to occur
<a href="#">Thalasseus bengalensis</a> Lesser Crested Tern [66546]	Breeding	Known to occur
Sharks		
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Foraging	Known to occur
Whales		
<a href="#">Balaenoptera musculus brevicauda</a> Pygmy Blue Whale [81317]	Migration	Known to occur
<a href="#">Megaptera novaeangliae</a> 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: 16-Sep-2024

[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](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance (Ramsar</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	1
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	23
<a href="#">Listed Migratory Species:</a>	35

## 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.

<a href="#">Commonwealth Lands:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	60
<a href="#">Whales and Other Cetaceans:</a>	23
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	1

## Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	None
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">EPBC Act Referrals:</a>	19
<a href="#">Key Ecological Features (Marine):</a>	2
<a href="#">Biologically Important Areas:</a>	4
<a href="#">Bioregional Assessments:</a>	None
<a href="#">Geological and Bioregional Assessments:</a>	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)

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		
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus fulvus</a> Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
<a href="#">Phaethon rubricauda westralis</a> Red-tailed Tropicbird (Indian Ocean), Indian Ocean Red-tailed Tropicbird [91824]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
SHARK		

Scientific Name	Threatened Category	Presence Text
<a href="#">Carcharias taurus (west coast population)</a>		
Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a>		
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pristis pristis</a>		
Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pristis zijsron</a>		
Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a>		
Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Sphyrna lewini</a>		
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species	[ <a href="#">Resource Information</a> ]	
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
<a href="#">Anous stolidus</a>		
Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Calonectris leucomelas</a>		
Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Fregata ariel</a>		
Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a>		
Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
Migratory Marine Species		
<a href="#">Anoxypristis cuspidata</a> Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat known to occur within area
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Isurus oxyrinchus</a> Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
<a href="#">Isurus paucus</a> Longfin Mako [82947]		Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Breeding known to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat likely to occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat likely to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area
<a href="#">Pristis pristis</a> Freshwater Sawfish, Largetooth Sawfish, River Sawfish, Leichhardt's Sawfish, Northern Sawfish [60756]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> 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		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat likely to occur within area
<a href="#">Phaethon lepturus fulvus</a> Christmas Island White-tailed Tropicbird, Golden Bosunbird [26021]	Endangered	Species or species habitat may occur within area
Fish		
<a href="#">Campichthys tricarinatus</a> Three-keel Pipefish [66192]		Species or species habitat may occur within area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
<a href="#">Corythoichthys flavofasciatus</a> Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
<a href="#">Cosmocampus banneri</a> Roughridge Pipefish [66206]		Species or species habitat may occur within area
<a href="#">Doryrhamphus dactyliophorus</a> Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
<a href="#">Doryrhamphus excisus</a> Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
<a href="#">Doryrhamphus janssi</a> Cleaner Pipefish, Janss' Pipefish [66212]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species habitat may occur within area
<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]		Species or species habitat may occur within area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
<a href="#">Haliichthys taeniophorus</a> Ribboned Pipehorse, Ribboned Seadragon [66226]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area
<a href="#">Hippocampus spinosissimus</a> Hedgehog Seahorse [66239]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Micrognathus micronotopterus</a> Tidepool Pipefish [66255]		Species or species habitat may occur within area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
<a href="#">Solegnathus lettiensis</a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
Reptile		
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Sea Snake, Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Aipysurus duboisii</a> Dubois' Sea Snake, Dubois' Seasnake, Reef Shallows Sea Snake [1116]		Species or species habitat may occur within area
<a href="#">Aipysurus foliosquama</a> Leaf-scaled Sea Snake, Leaf-scaled Seasnake [1118]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Aipysurus laevis</a> Olive Sea Snake, Olive-brown Sea Snake [1120]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Aipysurus mosaicus as Aipysurus eydouxii</a> Mosaic Sea Snake [87261]		Species or species habitat may occur within area
<a href="#">Aipysurus tenuis</a> Brown-lined Sea Snake, Mjoberg's Sea Snake [1121]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Crocodylus porosus</a> Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
<a href="#">Ephalophis greyae as Ephalophis greyi</a> Mangrove Sea Snake [93738]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Hydrophis czeblukovi</a> Fine-spined Sea Snake [59233]		Species or species habitat may occur within area
<a href="#">Hydrophis elegans</a> Elegant Sea Snake, Bar-bellied Sea Snake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis kingii as Disteira kingii</a> Spectacled Sea Snake [93511]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Hydrophis macdowelli</a> as <a href="#">Hydrophis mcdowelli</a> MacDowell's Sea Snake, Small-headed Sea Snake, [75601]		Species or species habitat may occur within area
<a href="#">Hydrophis major</a> as <a href="#">Disteira major</a> Olive-headed Sea Snake [93512]		Species or species habitat may occur within area
<a href="#">Hydrophis ornatus</a> Spotted Sea Snake, Ornate Reef Sea Snake [1111]		Species or species habitat may occur within area
<a href="#">Hydrophis peronii</a> as <a href="#">Acalyptophis peronii</a> Horned Sea Snake [93509]		Species or species habitat may occur within area
<a href="#">Hydrophis platura</a> as <a href="#">Pelamis platurus</a> Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area
<a href="#">Hydrophis stokesii</a> as <a href="#">Astrotia stokesii</a> Stokes' Sea Snake [93510]		Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Congregation or aggregation known to occur within area

Whales and Other Cetaceans		[ <a href="#">Resource Information</a> ]
Current Scientific Name	Status	Type of Presence
Mammal		
<a href="#">Balaenoptera borealis</a> Sei Whale [34]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area



Current Scientific Name	Status	Type of Presence
<a href="#">Balaenoptera physalus</a> Fin Whale [37]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Feresa attenuata</a> Pygmy Killer Whale [61]		Species or species habitat may occur within area
<a href="#">Globicephala macrorhynchus</a> Short-finned Pilot Whale [62]		Species or species habitat may occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Kogia breviceps</a> Pygmy Sperm Whale [57]		Species or species habitat may occur within area
<a href="#">Kogia sima</a> Dwarf Sperm Whale [85043]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]		Breeding known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Peponocephala electra</a> Melon-headed Whale [47]		Species or species habitat may occur within area
<a href="#">Physeter macrocephalus</a> Sperm Whale [59]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
<a href="#">Pseudorca crassidens</a> False Killer Whale [48]		Species or species habitat likely to occur within area
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Stenella coeruleoalba</a> Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area
<a href="#">Stenella longirostris</a> Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area
<a href="#">Steno bredanensis</a> Rough-toothed Dolphin [30]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat may occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area
<a href="#">Ziphius cavirostris</a> Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area

Habitat Critical to the Survival of Marine Turtles		[ Resource Information ]
Scientific Name	Behaviour	Presence
Aug - Sep		
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Nesting	Known to occur

## Extra Information

EPBC Act Referrals			[ Resource Information ]
Title of referral	Reference	Referral Outcome	Assessment Status
<a href="#">Browse to North West Shelf Development, Indian Ocean, WA</a>	2018/8319		Approval
<a href="#">Project Highclere Cable Lay and Operation</a>	2022/09203		Completed
Controlled action			
<a href="#">Development of Angel gas and condensate field, North West Shelf</a>	2004/1805	Controlled Action	Post-Approval
<a href="#">Development of Browse Basin Gas Fields (Upstream)</a>	2008/4111	Controlled Action	Completed
Not controlled action			
<a href="#">Development of Mutineer and Exeter petroleum fields for oil production, Permit</a>	2003/1033	Not Controlled Action	Completed
<a href="#">Maia-Gaea Exploration wells</a>	2000/17	Not Controlled Action	Completed
<a href="#">Project Highclere Geophysical Survey</a>	2021/9023	Not Controlled Action	Completed
Not controlled action (particular manner)			
<a href="#">3D Marine Seismic Survey in WA 457-P &amp; WA 458-P, North West Shelf, offshore WA</a>	2013/6862	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">3D seismic survey</a>	2006/2781	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Cue Seismic Survey within WA-359-P, WA-361-P and WA-360-P</a>	2007/3647	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">DAVROS MC 3D marine seismic survey northwaet of Dampier, WA</a>	2013/7092	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Decommissioning of the Legendre facilities</a>	2010/5681	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
<a href="#">Deep Water Northwest Shelf 2D Seismic Survey</a>	2007/3260	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Demeter 3D Seismic Survey, off Dampier, WA</a>	2002/900	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Fletcher-Finucane Development, WA26-L and WA191-P</a>	2011/6123	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2008/4630	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Judo Marine 3D Seismic Survey within and adjacent to WA-412-P</a>	2009/4801	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Offshore Drilling Campaign</a>	2011/5830	Not Controlled Action (Particular Manner)	Post-Approval
<a href="#">Westralia SPAN Marine Seismic Survey, WA &amp; NT</a>	2012/6463	Not Controlled Action (Particular Manner)	Post-Approval

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
<a href="#">Ancient coastline at 125 m depth contour</a>	North-west
<a href="#">Glomar Shoals</a>	North-west

Biologically Important Areas

[ [Resource Information](#) ]

Scientific Name	Behaviour	Presence
Marine Turtles		
<a href="#">Natator depressus</a>		
Flatback Turtle [59257]	Internesting buffer	Known to occur
Seabirds		

Scientific Name	Behaviour	Presence
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[Ardena pacifica](#)

Wedge-tailed Shearwater [84292]	Breeding	Known to occur
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Sharks

[Rhincodon typus](#)

Whale Shark [66680]	Foraging	Known to occur
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Whales

[Megaptera novaeangliae](#)

Humpback Whale [38]	Migration (north and south)	Known to occur
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# 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 E NOPSEMA REPORT FORMS

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>

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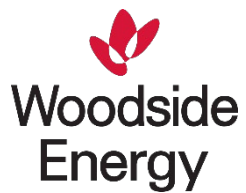
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APPENDIX F      STAKEHOLDER CONSULTATION

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# **Appendix F: Angel Subsea Infrastructure Removal Environment Plan**

April 2025

Revision 0

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## 1. CONSULTATION APPROACH

Consultation under regulation 25 of the OPGGS(E) Regulations provides that a titleholder must consult each relevant person (regulation 25(1)), 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(2)), and must allow a relevant person a reasonable period for consultation (regulation 25(3)).

A titleholder must also give a relevant person a reasonable opportunity to consult – this means that a titleholder will need to demonstrate that what it did constituted consultation appropriate and adapted to the nature of the interests of the relevant person (see Tipakalippa Full Court paragraph 104). The EP must contain a report that contains an assessment of the merits of any objection or claim about the adverse impact of each activity to which the EP relates, and a statement of the titleholder's response, or proposed response, if any, to each objection or claim (regulation 24(b)).

The criteria for acceptance of an EP includes that the EP demonstrates that the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate (regulation 34(g)).

For the Angel Subsea Infrastructure Removal Environment Plan (EP), Woodside has taken a broad and proactive tiered consultation approach over a period of 7 months.

This approach was aimed at raising public awareness of the consultation opportunity and to enable self-identification. It included a social media campaign and advertising in national, state, regional and Indigenous newspapers.

The tiered consultation approach discharges regulation 25 of the Environment Regulations' requirements. The approach is proactive, extended, has enabled self-identification, and has raised broad awareness of Woodside's activities related to this EP.

### 1.1 Tiered consultation approach

<b>Regulation 25</b>	Woodside's consultation approach assessed and identified relevant persons, enabled two-way dialogue and engagement, and included email and phone call follow up. The approach taken comfortably satisfies the requirements of regulation 25: to give relevant persons sufficient information and allow a reasonable period of time for consultation (see Section 5 in the EP).
<b>Proactive</b>	To raise awareness of the consultation process, and to enable grass-roots consultation, Woodside undertook advertised regional consultation roadshows and facilitated consultation at regional community events.
<b>Self-Identification</b>	The consultation timeframe was also extended at the request of some relevant and non-relevant persons.
<b>Broad Understanding</b>	Broad communication activities were undertaken to build awareness of consultation and enable self-identification, supported by targeted education materials.

### 1.2 Building on the existing consultation approach

For this EP, Woodside has built on its consultation methodology and undertaken additional consultation activities throughout the consultation period to ensure a reasonable period of time and sufficient information has been provided to relevant persons so that they can make an informed assessment of the possible consequences of the activity on their functions, interests or activities.

The approach for this included:

- a consultation period of up to 7 months
- undertaking proactive consultation activities to provide sufficient information to relevant persons

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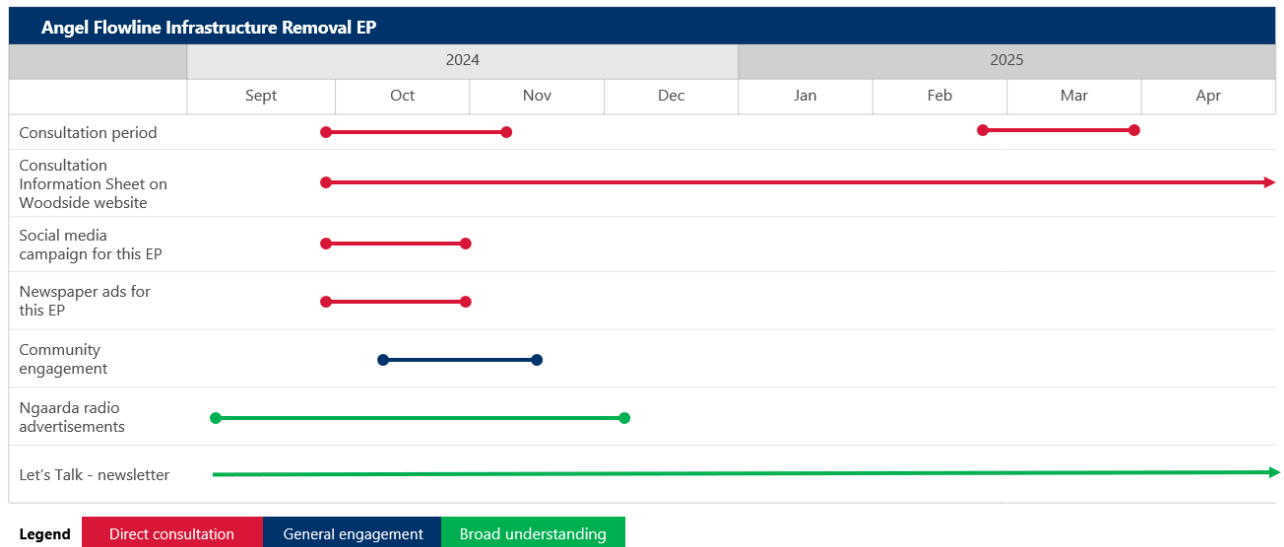
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- raising awareness of the consultation process and opportunity to provide feedback
- driving participation in the consultation process.
- An overview of this approach is shown below:



**Figure 1-1: Angel Subsea Infrastructure Removal EP consultation activity**

### 1.3 Traditional custodian consultation approach

Woodside has meaningful long-term relationships with relevant Traditional Custodians specifically tailored to provide for effective engagement which is continuous and is not confined to individual EPs, instead covering all EPs and other issues that are relevant at the time of engagement.

To this end, consultation on any particular EP, including the Angel Subsea Infrastructure Removal EP, happens before, during and after the designated consultation period in a more holistic manner allowing for an understanding of the bigger picture and accommodating cultural requirements. Ongoing consultation remains an important part of consulting with Traditional Custodians based on availability, cultural protocols and the preferred method of consultation for each relevant person.

Woodside has works with nominated representative bodies to obtain their input on how they would like to be consulted so as to enable each group to be consulted in a manner appropriately adapted to their interests.

### 1.4 NGO consultation approach

Woodside has an established history of consulting with environmental non-government organisations (NGOs) as part of its EP consultation. In its methodology (Section 5.3.4, Table 5-2), NGOs are considered "Other non-government groups or organisations" and "Research institutes and local conservation groups or organisations". Relevant person identification for these categories is based on 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.

So that NGOs were given sufficient information and a reasonable period of time to consult, Woodside:

- advertised the consultation period (social and traditional media)
- directly consulted NGOs

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- participated in regional community events (which were advertised) in the Pilbara region which could be attended by any NGOs including local groups (if NGOs attended these sessions, they did not identify themselves)

## **1.5 NGO response**

During consultation for the Angel Infrastructure Removal EP, no responses from NGOs were received.

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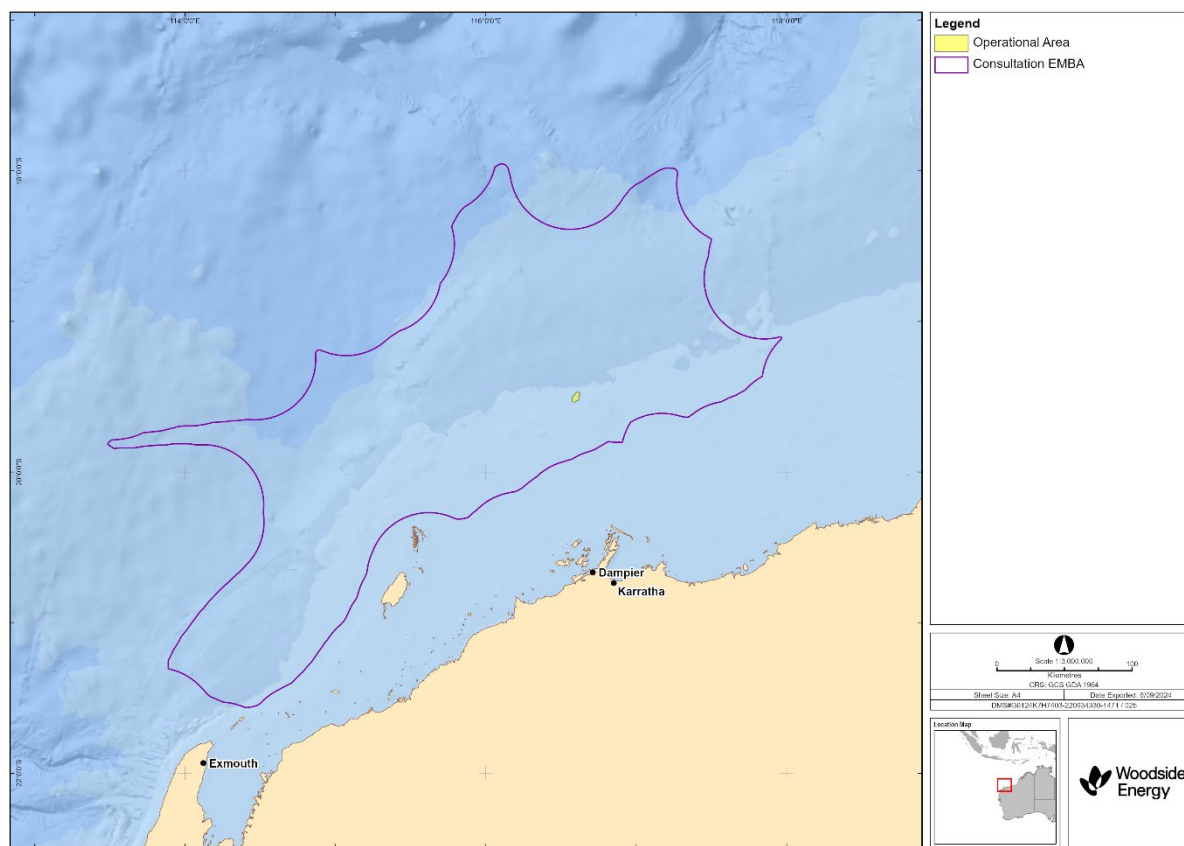
## 2. RELEVANCY ASSESSMENT

### 2.1 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 in the EP or self-identified and Woodside assessed as not relevant are summarised below at Table 1 and Table 3.

As per Woodside's methodology (Section 5 in the EP), assessment of relevant persons is informed by the EMBA, shown in Figure 2-1.



**Figure 2-1: Operational Area and EMBA for the Angel Infrastructure Removal EP.**

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## 2.2 Table 1: Assessment of relevance

Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
<b>Commonwealth and WA State Government Departments or Agencies – Marine</b>			
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
Australian Communications and Media Authority (ACMA)	Regulator for communications and media	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. ACMA's responsibilities aren't relevant to the activity as telecommunications lines do not intersect the Operational Area but are in proximity to it. Woodside chose to contact ACMA at its discretion in line with Section 5.3.7 of the EP.	No
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. The North West Slope Trawl and Western Deepwater Trawl Fisheries are active in the EMBA. AFMA's responsibilities may be relevant to the activity as the North West Slope Trawl and Western Deepwater Trawl Fisheries are active in the EMBA.	Yes
Australian Hydrographic Office (AHO)	Responsible for maritime safety and Notices to Mariners	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. AHO's responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes

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<b>Person or Organisation</b>	<b>Summary of responsibilities and/or functions, interests or activities</b>	<b>Assessment of relevance</b>	<b>Relevant person</b>
Australian Maritime Safety Authority (AMSA) – Marine Pollution	Legislated responsibility for oil pollution response in Commonwealth waters	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations.  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.	Yes
Australian Maritime Safety Authority (AMSA) – Marine Safety	Statutory agency for vessel safety and navigation	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations.  AMSA – Marine Safety’s responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes
Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries	Responsible for implementing Commonwealth policies and programs to support agriculture, fishery, food and forestry industries	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations.  The North West Slope Trawl and Western Deepwater Trawl Fisheries are active in the EMBA.  DAFF – Fisheries responsibilities may be relevant to the activity as the above mentioned fisheries are active in the EMBA.	Yes
Department of Defence (DoD)	Responsible for defending Australia and its national interests.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations.  DoD’s responsibilities may be relevant to the activity as defence training areas lie within the EMBA.	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.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(b) of the Environment Regulations.  There is known Maritime Cultural Heritage overlapping the EMBA.	Yes
Department of Primary Industries and	Responsible for managing State fisheries	Woodside has applied its methodology for ‘Government departments / agencies – marine’ 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
Regional Development (DPIRD)		<p>The Mackerel Managed Fishery, Pilbara Fish Trawl Managed Fishery, Pilbara Trap Managed Fishery and Pilbara Line Fishery are active in the Operational Area.</p> <p>The Exmouth Gulf Prawn Managed Fishery, Mackerel Managed Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Onslow Prawn Managed Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl Managed Fishery, Pilbara Trap Managed Fishery, Pilbara Line Managed Fishery, Specimen Shell Managed Fishery, West Coast Deep Sea Crustacean Managed Fishery and WA Sea Cucumber 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
Pilbara Ports Authority (PPA)	<p>PPA encompasses the Ports of Ashburton, Dampier, Port Hedland and Varanus Island.</p> <p>PPA oversees the operation of the greenfield ports of Anketell, Balla Balla, Cape Preston East, Cape Preston West and Urala.</p> <p>PPA oversees the Shipping and Pilotage Act 1967 (SPA) ports of Barrow Island, Cape Preston, Onslow and Port Walcott.</p>	<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 does not have the potential to impact Pilbara Ports Authority's responsibilities as the EMBA does not overlap the Pilbara Ports Authority's area of responsibility.</p> <p>Woodside chose to contact PPA at its discretion in line with Section 5.3.7 of the EP</p>	No
<b>Commonwealth and WA State Government Departments or Agencies – Environment</b>			
Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine)	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.	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations.</p> <p>DAFF – Biosecurity's responsibilities may be relevant to the proposed activities in the EMBA in the prevention of introduced</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
pests, vessels, aircraft and personnel)	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.  The Dept 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.	marine species.	
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 the EMBA overlaps WA parks, forests or reserves.  Activities have the potential to impact marine tourism in the EMBA.	Yes
Clean Energy Regulator (CER)	The Clean Energy Regulator administers schemes legislated by the Australian Government for measuring, managing, reducing or offsetting Australia's carbon emissions.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations.  CER's responsibilities are not relevant to non-operational EPs.	No
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.  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.	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

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
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 Australian Marine Parks (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 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 are not relevant to the activity as the EMBA does not overlap the Ningaloo Marine Park.  Woodside chose to contact NCWHAC at its discretion in line with Section 5.3.7 of the EP.	No
<b>Commonwealth and State Government Departments or Agencies – Industry</b>			
Department of Energy, 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
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
<b>Commonwealth commercial fisheries and peak representative bodies</b>			
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Represents the interests of the Southern Bluefin Tuna Fishery and Western Skipjack 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.	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		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.  Woodside chose to contact ASBTIA at its discretion in line with Section 5.3.7 of the EP.	
Commonwealth Fisheries Association (CFA)	Represents the interests of commercial fishers with licences in Commonwealth 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 North-West Slope Trawl Fishery and Western Deepwater Trawl Fishery are active in the EMBA.  CFA's functions may be relevant to the activity as the North-West Slope Trawl Fishery, Western Deepwater Trawl Fishery are active in the EMBA.	Yes
North West Slope Trawl Fishery	Commonwealth commercial 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 fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years.	Yes
Western Deepwater Trawl Fishery	Commonwealth commercial 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 fishery does not overlap the Operational Area. The fishery overlaps EMBA and has been active in the EMBA within the last 5 years.	Yes
<b>State commercial fisheries and peak representative bodies</b>			
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.	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>The Mackerel Managed Fishery, Pilbara Fish Trawl Managed Fishery, Pilbara Trap Managed Fishery, Pilbara Line Fishery have been active in the Operational Area within the last 5 years.</p> <p>The Exmouth Gulf Prawn Managed Fishery, Mackerel Managed Fishery, Marine Aquarium Fish Managed Fishery, Nickol Bay Prawn Managed Fishery, Onslow Prawn Managed Fishery, Pilbara Crab Managed Fishery, Pilbara Fish Trawl Managed Fishery, Pilbara Trap Managed Fishery, Pilbara Line Fishery, Specimen Shell Managed Fishery and West Coast Deep Sea Crustacean 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>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>	
Mackerel Managed Fishery (Area 2)	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 past 5 years.</p>	Yes
Demersal Scalefish Fishery: 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>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years.	
Demersal Scalefish Fishery: Pilbara Trap Fishery	State commercial 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 fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years.	Yes
Demersal Scalefish Fishery: Pilbara Line Fishery	State commercial 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 fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the past 5 years.	Yes
Marine Aquarium Fish Managed Fishery	State commercial 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 fishery does not overlap the Operational Area but 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. 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.	No
Nickol Bay Prawn Managed Fishery	State commercial 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 fishery does not overlap the Operational Area but overlaps the EMBA and has been active in the EMBA within the past 5 years, however, based on WAFIC's advice, Woodside does not	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		need to consult fisheries in the EMBA. 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.	
Onslow Prawn Managed Fishery	State commercial 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 fishery does not overlap the Operational Area but 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. 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.	No
Pilbara Crab Managed Fishery	State commercial 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 fishery does not overlap the Operational Area but 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. 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.	No
Specimen Shell Managed Fishery	State commercial 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.	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		The fishery does not overlap the Operational Area but 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. 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.	
West Coast Deep Sea Crustacean Managed Fishery	State commercial 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 fishery does not overlap the Operational Area but 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. 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.	No
West Australian Sea Cucumber Fishery	State commercial 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 fishery does not overlap the Operational Area but 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. 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.	No

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<b>Recreational marine users and peak representative bodies</b>			
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>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, Indian Chief Charters, Innkeeper Sport Fishing, Innkeeper Sport Fishing Charter, Kings Ningaloo Reef Tours, Live Ningaloo, Mahi Mahi Fishing Charters, Montebello Island Safaris, Ningaloo Aviation, Ningaloo Blue, Ningaloo Coral Bay Boats, Ningaloo Discovery, Ningaloo 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, Peak Sportfishing Charters, Pelican Charters, Sail Ningaloo, Sea Force Charters, Set The Hook, Three Islands, Top Gun Charters, Ultimate Watersports, Venture Ningaloo, View Ningaloo, Warrior Princess Charters, Yardi Creek Boat Tours, Aoa International Pty Ltd, Aspa Pastrikos, Austanley Pty Ltd, Blue Juice Tours Pty Ltd, Bondall Pty Ltd, C Emery Fishing Pty Ltd, Chapel Nominees Pty Ltd, D &amp; N Nominees Pty Ltd, Eco-Abrolhos Pty Ltd, Fawesome Expeditions Pty Ltd, Fire Tiger Pty Ltd, G. C. Bass nominees Pty Ltd, Jostan Holdings Pty Ltd, Km Charters Pty Ltd, Kw Marine Pty Ltd, L &amp; S Family Holdings Pty Ltd, Lulamanzi Investments Pty Ltd, Lyons Family Super Pty Ltd, Makalee Pty Ltd, Maritime Engineering Services Pty Ltd, Melkit Pty Ltd, Millennial Charters Pty Ltd, Monkey Mia Yacht Charters Pty Ltd, Monster Sportfishing Adventures Pty Ltd, Mr Corry E Wilson, North Star Cruises Australia Pty Ltd, On Strike Charters (Wa) Pty Ltd, Reel Force Charters Pty Ltd, Regalchoice Holdings Pty Ltd, Seafresh Holdings Pty Ltd,</p>	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>Sharkbay Charters Pty Ltd, Surefire Marine Services Pty Ltd, The Great Escape Charter Company Pty Ltd, W.A Maritime Investments Pty Ltd</p> <p>Activities have the potential to impact Gascoyne-based dive, tourism and charter operator's functions, interests or activities due to the location of activities and there has been recorded charter effort adjacent to the EMBA in the past 5 years.</p> <p>Woodside chose to contact individual Gascoyne Recreational Marine Users at its discretion in line with Section 5.3.7 of the EP.</p>	
Marine Tourism WA	Represents the interests of marine tourism in WA.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>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.</p>	Yes
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>Marine Rescue Dampier, Port Walcott Volunteer Marine Rescue, West Pilbara Volunteer Sea Search and Rescue Group, Archipelago Adventures, Hampton Harbour Boat &amp; Sailing Club, Port Walcott Yacht Club, Reef Seeker Charters, King Bay Game Fishing Club, Nickol Bay Sport Fishing Club, Bardina Pty Ltd, Down the Line Charters Pty Ltd, Mackerel Islands Pty Ltd, Ocean Charters Pty Ltd, Serenity Isles Trading Company Pty Ltd, Wyndham Fishing Tours Pty Ltd, Charter Travel Company Pty Ltd, Kw Marine Pty Ltd, Norbrick Pty Ltd, Sail Ningaloo Pty Ltd, Tiffom Pty Ltd, Aoa International Pty Ltd, Australian Port And Marine Services Pty Ltd, Bloor Street Investments Pty Ltd, Blue Juice Tours Pty Ltd, Bondall Pty Ltd, Breffen Nominees Pty Ltd, Broome Chiropractic Pty Ltd, Broome Tours Pty Ltd, C Emery Fishing Pty Ltd, Chapel</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>Nominees Pty Ltd, Charter Express Pty Ltd, CM Ventures Pty Ltd, Coastway Investments Pty Ltd, Coral Princess Cruises (Nq) Pty Ltd, Discovery Holiday Parks Pty Limited, Diversity Charter Company Wa Pty Ltd, Eco-Abrolhos Pty Ltd, Fawesome Expeditions Pty Ltd, G. C. Bass nominees Pty Ltd, Hartley Motorcycles Pty Ltd, Hotel And Resort Investments Pty Ltd, Humbug Fishing Pty Ltd, Kcc Group Pty Ltd, Kimberley Getaway Cruises Pty Ltd, Kimberley Marine Pty Ltd, Kimberley Quest Adventures Pty Ltd, King Sound Resort Hotel Pty Ltd, Kw Marine Pty Ltd, L &amp; S Family Holdings Pty Ltd, Lake Argyle Cruises Pty Ltd, Lombadina Aboriginal Corporation, Lugger Enterprises Pty Ltd, Lulamanzi Investments Pty Ltd, Mackerel Islands Pty Ltd, Mal Miles Adventures Pty Ltd, Marine Agents Australia Pty Ltd, Maritime Engineering Services Pty Ltd, Melkit Pty Ltd, Millennial Charters Pty Ltd, Monster Sportfishing Adventures Pty Ltd, North Star Cruises Australia Pty Ltd, Ocean Charters Pty Ltd, RSTG Pty Limited, Sea 2 Pty Ltd, Sealife Charters Pty Ltd, Split Tide Pty Ltd, Steven Douglas Chambers, Super Yachts Perth Pty Ltd, The Great Escape Charter Company Pty Ltd, W.A Maritime Investments Pty Ltd, Willie Creek Pearl Farm Pty Ltd</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>	
Recfishwest	Represents the interests of recreational fishers in WA.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p> <p>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.</p>	Yes
WA Game Fishing Association	Represents the interests of game fishers in WA.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations.</p>	Yes

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		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.	
<b>Titleholders and Operators</b>			
Longreach Capital (Beagle No.1)	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. Titleholder or Operator's permit areas overlaps the EMBA.	Yes
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
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
Finder Energy (Finder No16) (and subsidiary Searcher 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
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
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
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
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
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
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
Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos WA PVG	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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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
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
Skye Napoleon	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 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
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
<b>Traditional Custodians and nominated representative corporations</b>			
Buurabalayji Thalanyji Aboriginal Corporation (BTAC)	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 Thalanyji native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which BTAC is the Registered Native Title Body Corporate. BTAC is also party to the Macedon ILUA, which is coastally adjacent to the EMBA.	Yes
Kariyarra Aboriginal Corporation (KAC)	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 Kariyarra native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which the Kariyarra Aboriginal Corporation is the Registered Native Title Body	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		Corporate. The KAC is also party to the Kariyarra and State ILUA, which is coastally adjacent to the EMBA.	
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). The EMBA does not overlap the Murujuga National Park. MAC was established to represent the members of competing Native Title claims over Murujuga, collectively known as the Ngarda Ngardi and comprising Mardudhunera, Ngardluma, 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. 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.	Yes
Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)	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 Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, which the NTGAC and YAC are the Registered Native Title Body Corporates holding native title on behalf of the Baiyungu, Thalanyji and Yinggarda people. The Thalanyji native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which NTGAC is the Registered Native Title Body Corporate. The NTGAC is also party, with the WA State Government, to the	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>Ningaloo Conservation Estate Indigenous Land Use Agreement (the ILUA), which is coastally adjacent to the EMBA. 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'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>	
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 claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which NAC is the Registered Native Title Body Corporate.</p> <p>The Ngarluma/Yindjibarndi People native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which NAC and the Yindjibarndi Aboriginal Corporation are the Registered Native Title Body Corporates.</p> <p>NAC is also party to the Anketell Port, Infrastructure Corridor and Industrial Estates Agreement and Ngarluma Aboriginal Corporation RNTBC, which is coastally adjacent to the EMBA.</p>	Yes
Robe River Kuruma Aboriginal Corporation (RRKAC)	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 KM &amp; YM Indigenous Land Use Agreement 2018 and RTIO Kuruma Marthudunera People ILUA, which is coastally adjacent to the EMBA.</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
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 &amp; Mardudhunera People native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which WAC is the Registered Native Title Body Corporate.</p> <p>WAC is party to the Cape Preston Project Deed (YM Mardie ILUA) and Cape Preston West Export Facility, which is coastally adjacent to 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 claim is coastally adjacent to the EMBA, for which NAC and the Yindjibarndi Aboriginal Corporation are the Registered Native Title Body Corporates.</p>	Yes
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).</p> <p>The Gnulli, Gnulli #2 and Gnulli #3 - Yinggarda, Baiyungu and Thalanyji People native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, which 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 Thalanyji native title claim does not overlap the EMBA. The claim is coastally adjacent to the EMBA, for which YAC is the Registered Native Title Body Corporate.</p> <p>The Yinggarda Aboriginal Corporations nominated representative is Gumala Aboriginal Corporation.</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
<b>Native Title Representative Bodies</b>			
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 Registered Native Title Body Corporate but exist to assist native title claimants and holders.</p> <p>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.</p>	Yes
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 nominated representative is YMAC. Woodside has therefore consulted the NTGAC 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
<b>Self-identified First Nations groups</b>			
Ngarluma Yindjibarndi Foundation Ltd (NYFL)	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 Ngarluma and Yindjibarndi People, the NWS JVs and Woodside entered into an agreement on 22 December 1998 (Agreement).</p> <p>NYFL was subsequently incorporated under the terms of the Agreement to act as trustee for the trust established to benefit the Ngarluma and Yindjibarndi People and the Roebourne Aboriginal Community.</p> <p>Subsequent to that, the Ngarluma people settled their native title claim and established their nominated representative corporation, the Ngarluma Aboriginal Corporation (PBC); and the Yindjibarndi people settled their native title claim and established their nominated representative corporation, the Yindjibarndi Aboriginal Corporation (PBC). The Ngarluma Aboriginal Corporation and the Yindjibarndi Aboriginal Corporation are the appropriate representative bodies for consultation in relation to cultural interests.</p> <p>NYFL's functions may be relevant to the proposed activity in relation to its functions under the Agreement.</p>	
<b>Other First Nations Groups</b>			
Save Our Songlines (SOS) and/or [Individual 1]	Representatives of Non-Government Organisation Save Our Songlines and/or [Individual 1]	<p>Woodside has applied its methodology for 'Other non-government groups or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Save Our Songlines (SOS) and/or [Individual 1] relevance for the proposed activity.</p> <p>Woodside has assessed that SOS and/or [Individual 1] feedback demonstrates an interest with the proposed activity.</p>	Yes
<b>Historical heritage groups or organisations</b>			
Western Australian Museum (WAM)	Manages 200 shipwreck sites of the 1,500 known to be located off the Western Australian coast.	<p>Woodside has applied its methodology for 'Historical cultural heritage groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>There is known shipwrecks overlapping the EMBA which the Western Australian Museum may be responsible for.</p>	Yes

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
<b>Local government and elected Parliamentary representatives, community groups or organisations</b>			
Onslow Chamber of Commerce and Industry (CCI)	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
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.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.  Base Marine, Bhagwan Marine, Cape Conservation Group Inc, Cape Range Riders, DBCA, Department of Defence, Department of Transport, Exmouth Bus Charter, Exmouth Chamber of Commerce and Industry, Exmouth District High School, Exmouth Escape Resort, 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 Centre, Ningaloo Lodge, Ningaloo Coast World Heritage Advisory Council, PHI Aviation, Offshore Unlimited, Shire of Exmouth, Santos, Terraforma Offshore, WA Country Health Service.  The Exmouth CLG's area of responsibility under its terms of reference 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
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.	No

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		The Shire of Exmouth's area of responsibility does not overlap the EMBA. Woodside chose to contact individual Shire of Exmouth at its discretion in line with Section 5.3.7 of the EP.	
Exmouth CCI	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 does not have the potential to be impacted by the proposed activities. Woodside chose to contact individual Shire of Exmouth at its discretion in line with Section 5.3.7 of the EP.	No
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 does not overlap the EMBA. Woodside chose to contact individual City of Karratha at its discretion in line with Section 5.3.7 of the EP.	No
Karratha CLG		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 CLG's area of responsibility under its terms of reference does not overlap the EMBA. Woodside chose to contact individual Karratha CLG members at its discretion in line with Section 5.3.7 of the EP.	No
Karratha CCI	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in the City of Karratha and surrounding areas.	Woodside has applied its methodology for 'Local government and elected Parliamentary representatives, community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		<p>The Karratha and Districts Chamber of Commerce and Industry's interests do not have the potential to be impacted by the proposed activities.</p> <p>Woodside chose to contact Karratha CCI at its discretion in line with Section 5.3.7 of the EP.</p>	
<b>Other non-government groups or organisations (NGOs) or individuals</b>			
Australian Conservation Foundation (ACF)	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine ACF's relevance for the proposed activity.</p> <p>Woodside has assessed that ACF does not have a publicly available statement (or purpose), website or social media material that demonstrates its functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).</p> <p>Woodside chose to contact ACF at its discretion in line with Section 5.3.7.</p>	No
Australian Marine Conservation Society (AMCS)	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Australian Marine Conservation Society's relevance for the proposed activity.</p> <p>Woodside has assessed that Australian Marine Conservation Society does not have a publicly available statement (or purpose), website or social media material that demonstrates its functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).</p> <p>Woodside chose to contact AMCS at its discretion in line with Section 5.3.7.</p>	No

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<b>Person or Organisation</b>	<b>Summary of responsibilities and/or functions, interests or activities</b>	<b>Assessment of relevance</b>	<b>Relevant person</b>
Conservation Council of Western Australia (CCWA)	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Conservation Council of Western Australia's relevance for the proposed activity.</p> <p>Woodside has assessed that CCWA does not have a publicly available statement (or purpose), website or social media material that demonstrates its functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).</p> <p>Woodside chose to contact CCWA at its discretion in line with Section 5.3.7.</p>	No
Greenpeace Australia Pacific (GAP)	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Greenpeace Australia Pacific's relevance for the proposed activity.</p> <p>Woodside has assessed that Greenpeace Australia Pacific does not have a publicly available statement (or purpose), website or social media material that demonstrates its functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).</p> <p>Woodside chose to contact Greenpeace at its discretion in line with Section 5.3.7.</p>	No
Australasian Centre for Corporate Responsibility (ACCR)	Non-government organisation	<p>Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Australasian Centre for Corporate Responsibility's relevance for the proposed activity.</p> <p>Woodside has assessed that Australasian Centre for Corporate Responsibility does not have a publicly available statement (or purpose), website or social media material that demonstrates its</p>	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4). Woodside chose to contact ACCR at its discretion in line with Section 5.3.7.	
Friends of the Earth Australia	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Friends of the Earth's relevance for the proposed activity. Woodside has assessed that Friends of the Earth Australia has a publicly available statement (or purpose), website or social media material that demonstrates that its functions, interests or activities may be relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).	Yes
The Wilderness Society (TWS)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine The Wilderness Society's relevance for the proposed activity. Woodside initially assessed that The Wilderness Society did not have a publicly available statement (or purpose), website or social media material that demonstrated its functions, interests or activities are relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4).	Yes
Maritime Union of Australia (MUA)	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Maritime Union of Australia's relevance for the proposed activity. Woodside has assessed that the Maritime Union of Australia does not have a publicly available statement (or purpose), website or social media material that demonstrates that its	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		functions, interests or activities may be relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4). Woodside chose to contact the MUA at its discretion in line with Section 5.3.7.	
Market Forces	Non-government organisation	Woodside has applied its methodology for 'Other non-government groups or organisations or individuals' under regulation 25(1)(d) of the Environment Regulations to determine Maritime Union of Australia's relevance for the proposed activity. Woodside has assessed that the Market Forces does not have a publicly available statement (or purpose), website or social media material that demonstrates that its functions, interests or activities may be relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.3.4). Woodside chose to contact Market Forces at its discretion in line with Section 5.3.7.	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 may be research being undertaken by AIMS that intersects within the EMBA. Woodside chose to contact AIMS at its discretion in line with Section 5.3.7 of the EP.	No
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	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 CSIRO that intersects within the EMBA.	No

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Person or Organisation	Summary of responsibilities and/or functions, interests or activities	Assessment of relevance	Relevant person
		Woodside chose to contact CSIRO at its discretion in line with Section 5.3.7 of the EP.	
Western Australian 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 the WAMSI that intersects within the EMBA. Woodside chose to contact WAMSI at its discretion in line with Section 5.3.7 of the EP.	No
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. Woodside chose to contact CCG at its discretion in line with Section 5.3.7 of the EP.	No
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 do not have the potential to intersect with the EMBA as the EMBA does not overlap the North West Cape or Ningaloo Reef. Woodside chose to contact Protect Ningaloo at its discretion in line with in line with Section 5.3.7 of the EP.	No

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### 3. CONSULTATION ACTIVITIES

#### 3.1 Angel Subsea Infrastructure Removal EP consultation activities

Woodside has been conducting extensive consultation with relevant persons and other parties for this EP since September 2024 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 Angel Subsea Infrastructure Removal EP. Consultation aims to be inclusive, transparent, voluntary, respectful and two-way. Consultation was undertaken by email, letter, phone call and/or meetings and through advertising.

#### 3.2 Discharging Regulation 25 of the Environment Regulations

Woodside advertised the planned activities proposed for this EP in national, state and relevant local newspapers including (see Record of Consultation, reference 6.5). Regional newspapers do not require subscription and are available directly to households. All communities within or adjacent to the EMBA had access to this information via this information.

No direct comments or feedback were received from the advertisements

Newspaper	Coverage	Publication dates
The Australian	National	2 October 2024
The West Australian	Regional (WA)	2 October 2024
Pilbara News	Local (WA)	9 October 2024
Midwest Times	Local (WA)	8 October 2024
North West Telegraph	Local (WA)	9 October 2024
Koori Mail	Indigenous	9 October 2024
National Indigenous Times	Indigenous	29 October 2024

A Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (Section 5.3 of the EP), which included details such as an activity overview, maps, a summary of key risks and/or impacts and management measures (Record of Consultation, reference 6.1.1). An updated Consultation Information Sheet was also provided to all persons and organisations as part of an activity update in February 2025 (Record of Consultation, reference 6.3.1)

Since the commencement of the initial consultation period (September 2024), the Consultation Information Sheet 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 ([consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)).

The Woodside [Consultation Activities](#) webpage (accessible on the Consultation Information Sheet via a QR code, banners at community events and via social media content and advertisements) includes Consultation Information Sheets for the EPs on which Woodside is currently consulting, including this EP. The website page also features a subscribe field for EP-focussed communications from Woodside.

Additional targeted information was provided to select relevant persons based on their roles and responsibilities such as a vessel density map (Record of Consultation, reference 6.1.4), GIS shape files, shipwreck information (Record of Consultation, reference 6.1.5), a submarine communication cable map (Record of Consultation, reference 6.1.6) and a defence zone map (Record of Consultation, reference 6.1.3). Where appropriate, Woodside conducted phone calls and meetings with relevant persons.

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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 in the EP).

Consultation activities undertaken with relevant persons are summarised at Appendix F, Table 2.

Engagement undertaken with persons or organisations Woodside assessed as not relevant but chose to contact (see Section 5.3.4 in the EP) or self-identified and Woodside assessed as not relevant are summarised at Appendix F, Table 3.

From 30 September 2024, Woodside commenced a geotargeted sponsored social media campaign (Record of Consultation, reference 6.7) covering various local government authorities within, or coastally adjacent to, the EMBA for the proposed activities. The campaign brought the proposed activity to the attention of persons who may be interested and advised persons or organisations on how they can find out about Woodside's proposed activities by visiting Woodside's website.

Platforms	Geotargeted reach	Post dates	Impact
Meta – Facebook and Instagram	129,929	30 September – 28 October 2024	Reach: 129,929 Impressions: 1,856,638 Link Clicks: 2519 Click Through Rate: 0.20%

Below is a summary of comments and reactions to the social media campaign. Please note comments and reactions are not available for Instagram.

Platform	Number of reactions	Number of comments	Comments relevant to EP
Facebook	👍 73 😬 1 shares	2	0

### 3.3 Proactive consultation

#### 3.3.1 Community engagement

The Community Information Sessions or community events that Woodside has conducted or attended are outlined below and captured in more detail in (Record of Consultation, reference 6.8). Woodside published advertisements ahead of these sessions and events in relevant local newspapers and on social media to support attendance.

Date (2024)	Location	Event (if applicable)
12 October	Dampier	Dampier Beachside Markets
2 November	Dampier	Dampier Beachside Markets
14 November	Exmouth	Community Pop-up Exmouth Mall
18 March 2025	Dampier	Dampier Community Association event
6 April 2025	Dampier	Dampier Beachside Markets

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### 3.3.2 Community liaison group engagement

The Exmouth and Karratha Community Liaison Groups (CLGs) represent the interests of a range of local government, industry and community organisations in relation to oil and gas matters in the Exmouth and Karratha region. Woodside regularly meets with the two CLGs to discuss a range of issues including consultation of specific EPs. For this EP, see 4.14.3 for consultation with Exmouth CLG and 5.4.4 for Karratha CLG.

### 3.3.3 Newsletters

Woodside's EP focussed newsletter Let's Talk is designed to reach existing and potential stakeholders and encourage self-identification about Woodside's EP-related activities. The newsletter provides quarterly updates about EP consultation activities, case studies on effective consultation with relevant persons and other EP related information such as forthcoming events where Woodside personnel will be consulting with the local community. Let's Talk is distributed in a variety of locations as well as across digital platforms including Woodside's website and social media channels. People can also subscribe to receive it on Woodside's website. (Record of Consultation, reference 6.9.2).

Woodside also publishes the Karratha Community Update newsletter quarterly which includes a QR code and encourages people to go to the Consultation Activities page on Woodside's website to subscribe and find information about EPs. (Record of Consultation, reference 6.9.1).

## 3.4 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 and so that information was provided in a form that was readily accessible and appropriate (see Section 5.5 in the EP).

Consultation undertaken specifically with Traditional Custodians for this EP includes direct engagement with nominated representative bodies via the contact listed on the Office of the Registrar of Indigenous Corporations (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:

- the EP's Summary Information Sheet, being provided to relevant Traditional Custodian groups (Record of Consultation, reference 6.1.2 and 6.3.2). The resource is developed and reviewed by subject matter experts with knowledge and experience in Indigenous affairs, in collaboration with technical experts to ensure content is appropriate to the intended recipients
- meetings with directors, Elders and any nominated representatives, at a time and location nominated by them
- the exchange of written feedback and correspondence
- telephoning relevant persons to provide context, if requested and/or required
- invitations to and/or attendance at community monthly luncheons for Traditional Custodians.

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 and supported by senior Woodside representatives, subject matter experts and 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

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- 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 6.1.1 and 6.3.1) and Summary Consultation Information Sheets (Record of Consultation, reference 6.1.2 and 6.3.2) are available at face-to-face consultation
- meeting costs such as sitting fees, travel, legal support and executive support and other support required
- advertising in Indigenous publications such as the National Indigenous Times (29 October 2024) and Koori Mail (9 October 2024) (Record of Consultation, reference 6.5.8 and 6.5.7)
- advertising on Ngaarda radio, the only licensed Aboriginal broadcaster in the Pilbara (26 August 2024 – 30 November 2024).

Newspaper	Coverage	Publication dates
Koori Mail	Indigenous	9 October 2024
National Indigenous Times	Indigenous	29 October 2024
Ngaarda Radio	National	26 August 2024 – 30 November 2024

Woodside also ran a geotargeted sponsored social media campaign (Record of Consultation, reference 6.7) to various communities that are coastally adjacent to the EMBA for the proposed activities. Social media is a highly effective means to engage Indigenous audiences as covered in the book Indigenous Digital Life: The Practice and Politics of Being Indigenous on Social Media (Bronwyn Carlson and Ryan Frazer, 2021).

The campaign brought the proposed activity to the attention of persons who may be interested and advised persons or organisations how they can learn more about Woodside's proposed activities by visiting Woodside's website. The advertisements linked to Woodside's website, which details the intent of consultation with relevant persons under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth).

Woodside uses a diverse range of techniques to reach relevant persons and build awareness of the proposed activity and how it may affect their functions, interests or activities and to understand how to provide feedback. The combination of Prescribed Bodies Corporate (PBC) engagement meetings, traditional print media, social media and face-to face community interaction provides a wide-ranging opportunity to consult.

## 4. TABLE 2: CONSULTATION REPORT WITH RELEVANT PERSONS OR ORGANISATIONS

The black numbering (N) in the 'Summary of information provided and record of consultation for this EP' in Table 2 denotes an item raised by a stakeholder. The green numbering (N) in this section denotes Woodside's response to that item.

### 4.1 Commonwealth and WA State Government departments or agencies – marine

#### 4.1.1 Australian Border Force (ABF)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed ABF advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed ABF an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with ABF for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given ABF sufficient information to allow ABF to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to ABF on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:</li> </ul>		

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- The purpose of consultation and set out what was being sought through consultation.
- A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
- A timeframe for consultation and the provision of feedback.
- A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed ABF a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to ABF advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed ABF 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed ABF a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with ABF is appropriate and adapted to the nature of interests of ABF:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025, Woodside sent ABF an activity update, offering ABF another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024, reminding ABF of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as ABF did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on ABF's functions, interests or activities.

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#### 4.1.2 Australian Fisheries Management Authority (AFMA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 6.1.9), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 24 February 2025, Woodside emailed AFMA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.4).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	Woodside has assessed the potential for interaction with Commonwealth managed fisheries in Section 4.10.1 of this EP. Woodside will provide notifications to AFMA, CFA, DAFF – Fisheries, and individual Commonwealth relevant fishery licence holders (see Table 7-5 of this EP) ten days before activity commences, and following completion of activities, as referenced as PS 1.5 of this EP.  No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AFMA for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given AFMA sufficient information to allow AFMA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to AFMA on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> </ul> </li> </ul>		

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- A link to NOPSEMA's brochure 'Consultation on offshore petroleum environment plans'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed AFMA a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to AFMA advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed AFMA 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed AFMA a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with AFMA is appropriate and adapted to the nature of interests of AFMA:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025, Woodside sent AFMA an activity update, offering AFMA another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 14 March 2025, reminding AFMA of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as AFMA did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on AFMA's functions, interests or activities.

### 4.1.3 Australian Hydrographic Office (AHO)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed AHO advising of the proposed activity (Record of Consultation, reference 6.1.10), provided a Consultation Information Sheet, a shipping lanes map, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 1 October 2024, AHO provided a standard response acknowledging that the information had been received and that the data supplied will be registered, assessed, prioritised and validated in preparation for updating AHO's Navigational Charting products (SI Report, reference 3.1).
- (1) On 2 October 2024, AHO formally responded to Woodside (SI Report, reference 3.2), thanking them for the notification and advising that AHO only requires further notification when activities are about to take place and once complete, activities impacting maritime safety and final positions of permanent features for charting
- (1) On 4 October 2024 (SI Report, reference 3.3) and on 21 November 2024 (SI Report, reference 3.4), Woodside responded to AHO thanking them for their reply and noted the request for activity notifications.
- On 24 February 2025, Woodside emailed AHO an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.5).
- On 25 February 2025, AHO provided a standard response acknowledging that the information had been received and that the data supplied will be registered, assessed, prioritised and validated in preparation for updating AHO's Navigational Charting products (SI Report, reference 3.5).
- (1) On 25 February 2025, AHO formally responded in line with their response on 2 October 2025 (SI Report, reference 3.6), thanking Woodside for the notification and advising that AHO only requires further notification when activities are about to take place and once complete, indication of features for updating AHO's Navigational Charting products.
- On 14 March 2025, Woodside sent a follow-up email (Record of Consultation, reference 6.4.1).
- On 17 March 2025, AHO provided a standard response acknowledging that the information had been received and that the data supplied will be registered, assessed, prioritised and validated in preparation for updating AHO's Navigational Charting products (SI Report, reference 3.7).
- (1) On 18 March 2025, AHO formally responded in line with their response on 2 October 2024 and 25 February 2025 (SI Report, reference 3.8), thanking Woodside for the notification and advising that AHO only requires further notification when activities are about to take place and once complete.
- (1) On 1 April 2025, Woodside replied to AHO (SI Report, reference 3.9) noting their reply and confirming further notification will be provided at the start of activities.

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Advised that notification is only required when activities are about to take place and once complete to update AHO's Navigational Charting products.	(1) <b>Woodside assessment:</b> Woodside acknowledges that AHO only requires notification when activities are about to take place and once complete. Woodside accepts its responsibility to provide AHO with activity notifications <b>Woodside response:</b> Woodside confirmed it will provide start and end of activity notifications.	(1) Woodside will notify the AHO no less than four working weeks before operations commence and after flowline removal, as referenced in PS 1.3 in this EP.

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While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AHO for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given AHO sufficient information to allow AHO to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>• The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to AHO on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:</li> <li>• The purpose of consultation and set out what was being sought through consultation.</li> <li>• A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>• A timeframe for consultation and the provision of feedback.</li> <li>• A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>• Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> <li>• On 2 October 2024, 25 February 2025 and 18 March 2025 AHO shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable AHO to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.</li> <li>• Woodside responded to AHO noting its feedback on 4 October 2024, 21 November 2024 and 1 April 2025 .</li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed AHO a reasonable period for consultation in the preparation of this EP because:</p>		

- A consultation period was stated in the initial correspondence to AHO advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed AHO 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed AHO a reasonable period for consultation in preparation of the EP as evidenced by AHO's response on 21 November 2024.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with AHO is appropriate and adapted to the nature of interests of AHO:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent AHO an activity update, offering AHO another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to AHO as evidenced by its response on 2 October 2024, 25 February 2025 and 18 March 2025.

#### **Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- AHO provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from AHO and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Included notifications to AHO prior to commencement and upon completion of activities, in Table 7-7 of this EP, following their request for activity notifications.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on AHO's functions, interests or activities.

#### 4.1.4 Australian Maritime Safety Authority (AMSA) – Marine Pollution

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed AMSA – Marine Pollution advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 24 February 2025, Woodside emailed AMSA – Marine Pollution an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2)</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1).	Woodside has addressed oil spill preparedness and response strategy in Appendix G. No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AMSA – Marine Pollution for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given AMSA – Marine Pollution sufficient information to allow AMSA – Marine Pollution to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to AMSA – Marine Pollution on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul>		

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### Reasonable Period

Woodside allowed AMSA – Marine Pollution a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to AMSA – Marine Pollution advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed AMSA – Marine Pollution 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed AMSA – Marine Pollution a reasonable period for consultation in preparation of the EP.

### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with AMSA – Marine Pollution is appropriate and adapted to the nature of interests of AMSA – Marine Pollution:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent AFMA an activity update, offering AMSA – Marine Pollution another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 14 March 2025, reminding AMSA – Marine Pollution of the opportunity to provide feedback.

### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as AMSA – Marine Pollution did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on AMSA – Marine Pollution's functions, interests or activities.



#### 4.1.5 Australian Maritime Safety Authority (AMSA) – Marine Safety

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed AMSA – Marine Safety advising of the proposed activity (Record of Consultation, reference 6.1.11), provided a Consultation Information Sheet, a shipping lanes map, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.2).
- On 23 October 2024, AMSA -Marine Safety responded to Woodside (SI Report, reference 4.1) to acknowledge Woodside had considered information that AMSA – Marine Safety communicates regarding navigation safety and to note that the Area of Interest is close to charted shipping fairways, therefore vessel traffic will be encountered throughout the duration of Woodside's activities. AMSA – Marine Safety additionally clarified Woodside's commitments to:
  - (1) Notify the AHO no less than 4 weeks before operations commence.
  - (2) Notify AMSA's JRCC at least 24-48 hours before operations commence and end.
  - (3) Provide updates to both the AHO and AMSA on any material changes to planned activities.
  - (4) Ensure vessels 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.
  - (5) Evaluate and implement adequate anti-collision measures including but not limited to installation of Automatic Identification System (AIS) units, offshore guard vessel/s that can monitor traffic, and additional warnings and/or lights to attract attention.
- On 21 November 2024, Woodside responded to AMSA – Marine Safety (SI Report, reference 4.2) and:
  - (1) Confirmed it would notify AHO no less than 4 weeks before operations commence
  - (2) Confirmed it would notify AMSA's JRCC at least 24-48 hours before operations commence and end.
  - (3) Advised it would provide updates to both the AHO and AMSA on any material changes to planned activities.
  - (4) Confirmed that vessels will exhibit appropriate lights and shapes to reflect the nature of operations.
  - (5) Confirmed it will implement adequate anti-collision measures and clarified that offshore guard vessels would not be utilised as an anti-collision measure for this EP as other measures identified would mitigate the risk.
- On 24 February 2025, Woodside emailed AMSA – Marine Safety an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.6).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).
- On 31 March 2025, AMSA – Marine Safety responded to Woodside (SI Report, reference 4.3) to note that heavy vessel traffic and support craft will be encountered in the area of interest throughout the duration of Woodside's activities. AMSA – Marine Safety additionally requested Woodside confirm its commitments to:
  - (1) Notify the AHO no less than 4 weeks before operations commence.
  - (2) Notify AMSA's ARC at least 24-48 hours before operations commence and end.

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<ul style="list-style-type: none"> <li>– (4) Ensure vessels 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.</li> <li>– (5) Evaluate and implement adequate anti-collision measures including but not limited to installation of Automatic Identification System (AIS) units, offshore guard vessel/s that can monitor traffic, and additional warnings and/or lights to attract attention.</li> <li>• On 3 April 2025, Woodside responded to AMSA – Marine Safety (SI Report, reference 4.4) and: <ul style="list-style-type: none"> <li>– (1) Confirmed it would notify AHO no less than 4 weeks before operations commence</li> <li>– (2) Confirmed it would notify AMSA’s JRCC at least 24-48 hours before operations commence and end.</li> <li>– (4) Confirmed that vessels will exhibit appropriate lights and shapes to reflect the nature of operations.</li> <li>– (5) Confirmed it will implement adequate anti-collision measures and clarified that offshore guard vessels would not be utilised as an anti-collision measure for this EP as other measures identified would mitigate the risk.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside’s Response	Inclusion in Environment Plan
(1) Requested the AHO be contacted no less than 4 weeks before operations commence.	(1) <b>Woodside assessment:</b> Woodside notifies AHO of activities to enable AHO to manage any impacts to marine activity. <b>Woodside response:</b> Woodside confirmed the requirement to notify the AHO 4 weeks before operations commence.	(1) Woodside will notify the AHO no less than four working weeks before operations commence, as referenced as PS 1.3. of the EP
(2) Requested the ARC be notified 24-48 hours before operations commence and end.	(2) <b>Woodside assessment:</b> Woodside notifies AHO of activities to enable AHO to manage any impacts to marine activity. <b>Woodside response:</b> Woodside confirmed the requirement to notify the JRCC 24-48 hours before operations commence and end.	(2) Woodside will notify the ARC at least 24–48 hours before operations commence, as referenced as PS 1.4 of the EP.
(3) Requested to be advised of any material changes to planned activities.	(3) <b>Woodside assessment:</b> Woodside notifies AHO of activities to enable AHO to manage any impacts to marine activity. <b>Woodside response:</b> Woodside confirmed the requirement to notify the AHO of any material changes to planned activities.	(3) Woodside will notify the AHO of any material changes to this EP, as referenced as Table 7-5 of the EP.

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<p><b>(4)</b> Vessels should exhibit appropriate lights and shapes to reflect nature of operations.</p>	<p><b>(4)</b> <b>Woodside assessment:</b> Woodside complies with the International Rules for Preventing Collisions at Sea. <b>Woodside response:</b> Woodside confirmed the requirement that 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.</p>	<p><b>(4)</b> Section 6 of 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 required to comply with marine orders and the facility's collision prevention system will be implemented.</p>
<p><b>(5)</b> Woodside to evaluate and implement adequate anti-collision measures including offshore guard vessels.</p>	<p><b>(5)</b> <b>Woodside assessment:</b> Woodside is continuously evaluating existing collision risk mitigation measures. <b>Woodside response:</b> Woodside confirmed the requirement that it will implement adequate anti-collision measures and clarified offshore guard vessels would not be utilised as an anti-collision measure for this EP as other measures identified would mitigate the risk.</p>	<p><b>(5)</b> Section 6 of 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 required to comply with marine orders and the facility's collision prevention system will be implemented.</p>
<p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).</p>	<p>No additional controls or measures are required.</p>
<p><b>Summary Report – Consultation Complete</b></p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AMSA – Marine Safety for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given AMSA – Marine Safety sufficient information to allow AMSA – Marine Safety to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p>		

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- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to AMSA – Marine Safety on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA’s brochure ‘*Consultation on offshore petroleum environment plans*’.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 23 October 2024 and 31 March 2025, AMSA – Marine Safety shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable AMSA – Marine Safety to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to AMSA – Marine Safety noting its feedback on 21 November 2024 and 3 April 2025.

#### Reasonable Period

Woodside allowed AMSA – Marine Safety a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to AMSA – Marine Safety advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside’s methodology allows a 30-day consultation period. Woodside allowed AMSA – Marine Safety 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed AMSA – Marine Safety a reasonable period for consultation in preparation of the EP as evidenced by AMSA – Marine Safety’s responses on 23 October 2024 and 31 March 2025.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside’s approach to consultation with AMSA – Marine Safety is appropriate and adapted to the nature of interests of AMSA – Marine Safety:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent AMSA – Marine Safety an activity update, offering AMSA – Marine Safety another opportunity to provide feedback.

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- Woodside considers a reasonable opportunity was provided to AMSA – Marine Safety as evidenced by its response on 23 October 2024 and 31 March 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- AMSA – Marine Safety provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from AMSA – Marine Safety and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - As standard practice (and as requested by AMSA – Marine Safety during consultation), Woodside will provide activity notifications to AHO and AMSA's ARC as referenced at PS 1.3 and PS 1.4
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on AMSA – Marine Safety's functions, interests or activities.

#### 4.1.6 Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DAFF – Fisheries advising of the proposed activity (Record of Consultation, reference 6.1.12), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.3).
- On 24 February 2025, Woodside emailed DAFF – Fisheries an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.7).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	Woodside has assessed the potential for interaction with Commonwealth managed fisheries in Section 4.10.1 of this EP. Woodside will provide notifications to AFMA, CFA, DAFF – Fisheries, and individual Commonwealth relevant fishery licence holders (see Table 7-5 of this EP) ten days before activity

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		<p>commences, and following completion of activities, as referenced as PS 1.5 of this EP.</p> <p>No additional measures or controls are required.</p>
<p align="center"><b>Summary Report – Consultation Complete</b></p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DAFF – Fisheries for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DAFF – Fisheries sufficient information to allow DAFF – Fisheries to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DAFF – Fisheries on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed DAFF – Fisheries a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to DAFF – Fisheries advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> <li>Woodside's methodology allows a 30-day consultation period. Woodside allowed DAFF – Fisheries 60 days for consultation, which included an additional period following the activity update.</li> <li>Consultation for this EP commenced 7 months ago.</li> <li>In this context, Woodside allowed DAFF – Fisheries a reasonable period for consultation in preparation of the EP.</li> </ul> <p><b>Reasonable Opportunity</b></p> <p>A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DAFF – Fisheries is appropriate and adapted to the nature of interests of DAFF – Fisheries:</p>		

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- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DAFF – Fisheries an activity update, offering DAFF – Fisheries another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding DAFF – Fisheries of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DAFF – Fisheries did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DAFF – Fisheries functions, interests or activities.

### 4.1.7 Department of Defence (DoD)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DoD advising of the proposed activity (Record of Consultation, reference 6.1.13), provided a Consultation Information Sheet, a map of the defence zones, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.4).
- On 24 February 2025, Woodside emailed DoD an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.8).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DoD for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given DoD sufficient information to allow DoD to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DoD on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed DoD a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DoD advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DoD 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DoD a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DoD is appropriate and adapted to the nature of interests of DoD:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025, Woodside sent DoD an activity update, offering DoD another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding DoD of the opportunity to provide feedback.

#### **Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DoD did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DoD's functions, interests or activities.

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#### 4.1.8 Department of Planning, Lands and Heritage (DPLH)

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DPLH advising of the proposed activity (Record of Consultation, reference 6.1.14), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.5).
- On 1 November 2024, DPLH responded to Woodside (SI Report, reference 5.1), thanking Woodside for providing the opportunity to comment. DPLH also:
  - (1) Confirmed that they had no comments to provide on the planned activities.
  - (2) Recommended that Woodside contact DBCA regarding any environmental impacts of the EP.
  - (3) Advised that WAM is the delegate authority for historic shipwrecks and should be contacted if there are any maritime archaeological impacts.
- On 24 February 2025, Woodside emailed DPLH an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.9).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).
- On 3 April 2025, Woodside responded to DPLH (SI Report, reference 5.2 and 5.3) and:
  - (1) Noted DPLH had no comment on the planned activities
  - (2) Confirmed that DBCA's responsibilities are not relevant to the activity as the EMBA does not overlap WA parks, forests or reserves.
  - (3) Confirmed WAM has been informed of the planned activities.
- (1) On 8 April 2025, DPLH responded to Woodside to state DPLH has no further comments on the planned activities (SI Report, reference 5.4)
- On 16 April 2025, Woodside replied to DPLH (SI Report, reference 5.5) and:
  - (1) Noted DPLH had no comment on the planned activities
  - (2) Confirmed that DBCA had been contacted regarding the planned activity on 20 September 2024 and 24 February 2025 and had no objections, claims or feedback.

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Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) No comments to provide on the planned activities.	(1) <b>Woodside assessment:</b> Woodside accepts that DPLH has no comments to provide on the planned activities. <b>Woodside response:</b> Woodside notes DPLH has no comment on the planned activities	(1) Not required.
(2) Recommend contacting DBCA regarding environmental impacts.	(2) <b>Woodside assessment:</b> Woodside assessed DBCA as relevant to the planned activities and contacted DBCA as part of consultation on this EP. <b>Woodside response:</b> Woodside confirmed DBCA has been informed of the planned activities.	(2) Not required.
(3) Advised contacting WAM on maritime archaeological impacts.	(3) <b>Woodside assessment:</b> Woodside assessed WAM as relevant to the planned activities and contacted WAM as part of consultation on this EP. <b>Woodside response:</b> Woodside confirmed WAM has been informed of the planned activities.	(3) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DPLH for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given DPLH sufficient information to allow DPLH to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DPLH on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 1 November 2024, DPLH shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DPLH to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to DPLH noting its feedback on 3 April 2024.

#### Reasonable Period

Woodside allowed DPLH a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DPLH advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DPLH 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DPLH a reasonable period for consultation in preparation of the EP as evidenced by DPLH's response on 1 November 2024 and 1 April 2025.

#### Reasonable Opportunity

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A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DPLH is appropriate and adapted to the nature of interests of DPLH:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DPLH an activity update, offering DPLH another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to DPLH as evidenced by its responses on 1 November 2024 and 1 April 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- DPLH provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from DPLH and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with DPLH because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DPLH's functions, interests or activities.

#### 4.1.9 Department of Primary Industries and Regional Development (DPIRD)

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DPIRD advising of the proposed activity (Record of Consultation, reference 6.1.15), provided a Consultation Information Sheet, a list of shipwrecks, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.6).
- On 24 February 2025, Woodside emailed DPIRD an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.10).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).
- On 31 March 2025, DPIRD responded (SI Report, reference 35.1) with the following feedback and requests prior to submission of the EP to the regulator:
  - **(1)** Consider DPIRD as a relevant person for this EP.

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- (2) Noted the proposed activities may have an effect on fish resources and the aquatic environment managed under WA fisheries legislation.
- (3) Confirmed the commercial fishing interests as well as customary, recreational and chartering fishing resources existing, or in proximity to, the areas associated with the proposed activities.
- (4) Recommended Woodside initiate and maintain ongoing consultation with WAFIC, Recfishwest and Aquaculture Council of Western Australia including providing start and end dates for activities and exclusion zones.
- (5) Recommended contacting the relevant Traditional Owners in the area impacted by the proposed activities.
- (6) Requested DPIRD is advised within 24 hours of Woodside reporting an oil spill incident to the appropriate authority.
- (7) Requested when developing the Oil Spill Contingency Plan (OSCP) that there is baseline marine data included to compare against any post-spill monitoring to determine impacts. This data should be available to DPIRD upon request.
- (8) Noted spawning and nursery areas for key fish species were particularly vulnerable to the impacts of spills. DPIRD requested specific strategies in the EP to mitigate these risks.
- (9) Requested that DPIRD was advised within 24 hours of any suspected or confirmed marine pests or diseases from vessels. Contact details for notifications were provided and it was requested to share this with vessel operators.
- (10) Requested all potential impacts to fisheries, fish resources and the aquatic environment are acknowledged in the Environment Plan with strategies to mitigate or minimise these impacts.
- (11) Advised should any relevant, significant changes affecting fisheries occur prior to completion of Woodside's operations, DPIRD reserves the right to request further consultation and resolution as appropriate
- On 10 April 2025, Woodside responded to DPIRD (SI Report, reference 35.2) as follows:
  - (1) Confirmed DPIRD's feedback that it is a relevant person.
  - (2) Noted assessment of potential spatial and temporal extent for interaction with each fishery occurred by reviewing AFMA, ABARES and DPIRD Fishcube data with the Operational Area and EMBA.
  - (3) Confirmed the list of fisheries provided by DPIRD in its response with interest in the area of proposed activities aligned with Woodside's understanding from its data.
  - (4) Confirmed consultation had occurred with relevant fishery licence holders upon advice from WAFIC and was conducted by WAFIC.
  - (4) Advised that around annually, Woodside updated fishing licence holder contact details via DPIRD's licencing division.
  - (4) Confirmed consultation had occurred with Recfishwest and information provided included specific start and end dates of the activities, and the spatial extent of the proposed activities (including any exclusion zones).
  - (5) Confirmed Woodside had consulted with the relevant Traditional Owners in the preparation of this EP.
  - (6) Confirmed Department of Transport (DoT) is notified within 2 hours of a marine pollution incident and DPIRD would be advised within 24 hours of this DoT notification as outlined in the EP. Woodside requested a dedicated role or person for this notification if this was available.
  - (7,8) Advised the risk of spill events was mitigated through a range of preventative controls including offshore response actions. The aim of the response is to reduce hydrocarbon contact with sensitive coastal areas, including commercially important fish species spawning and aggregation areas.

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- (7) Advised Woodside is a member of the Australian Energy Producers (AEP) Joint Industry Operational and Scientific Monitoring (OSM) Framework (AEP, 2021). In the event of a spill, the OSM Framework will guide the situational awareness and response as well as undertake a suite of comprehensive science-based monitoring programs to evaluate environmental damage.
- (9) Advised Woodside works closely with vessel contractors to ensure compliance with DPIRD's biosecurity policy. This includes a notification to DPIRD within 24 hours of any suspected or confirmed marine pests or diseases from vessels. Woodside confirmed this information would be communicated to vessel operators.
- (10) Confirmed all vessels are required to comply with relevant regulations to prevent introducing invasive marine species (IMS). Vessels will be assessed and managed to prevent the introduction of IMS in accordance with Woodside's Invasive Marine Species Management Plan. This includes a risk assessment process with outcomes ensuring management measures commensurate with the risk are implemented. Confirmed potential impacts to fisheries, fish resources and the aquatic environment are considered in the EP with strategies to mitigate or minimise these impacts.
- (11) Acknowledged that should any significant and relevant changes affecting fisheries occur prior to the completion of our activities, DPIRD reserved the right to request further consultation and resolution, as appropriate.

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) DPIRD confirmed it is a relevant person.	(1) <b>Woodside assessment:</b> Woodside uses a methodology for identifying relevant persons in accordance with regulation 25 (1) and had identified DPIRD as a relevant person when applying the methodology for this EP. <b>Woodside response:</b> Woodside confirmed DPIRD's feedback that it is a relevant person.	(1) Section 5.3 in the EP defines the methodology for identifying relevant persons for consultation.
(2) The proposed activities may have an effect on fish resources and the aquatic environment managed under WA fisheries legislation.	(2) <b>Woodside assessment:</b> Woodside assesses for potential spatial and temporal extent for interaction with each fishery occurred by reviewing AFMA, ABARES and DPIRD Fishcube data with the Operational Area and EMBA. <b>Woodside response:</b> Woodside confirmed assessment of potential spatial and temporal extent for interaction with each fishery occurred by reviewing AFMA, ABARES and DPIRD Fishcube data with the Operational Area and EMBA.	(2) Section 5.3 in the EP defines the methodology for identifying Commonwealth and State fisheries and their representative bodies.
(3)	(3)	(3) Not required.

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There are commercial fishing interests as well as customary, recreational and charting fishing resources existing, or in proximity to, the areas associated with the proposed activities.	<p><b>Woodside assessment:</b> Woodside notes the list of fisheries provided by DPIRD with fishing interests in the area aligns with Woodside data.</p> <p><b>Woodside response:</b> Woodside confirmed the list of fisheries provided by DPIRD in its response with interest in the area of proposed activities aligned with Woodside's understanding from its data.</p>	
<p><b>(4)</b></p> <p>Recommended Woodside initiate and maintain ongoing consultation with WAFIC, Recfishwest and Aquaculture Council of Western Australia including sending start and stop notifications and exclusion zones.</p>	<p><b>(4)</b></p> <p><b>Woodside assessment:</b> Woodside has consulted WAFIC and Recfishwest for this activity. Aquaculture Council of Western Australia was not consulted as they were assessed as not relevant as no aquaculture was identified in the area.</p> <p><b>Woodside response:</b> Woodside confirmed consultation had occurred with relevant fishery licence holders upon advice from WAFIC and was conducted by WAFIC. Woodside confirmed consultation had occurred with Recfishwest and information provided included specific start and end dates of the activities, and the spatial extent of the proposed activities (including any exclusion zones).</p>	<p><b>(4)</b></p> <p>Not required.</p>
<p><b>(5)</b></p> <p>Recommended consultation with relevant Traditional Owners.</p>	<p><b>(5)</b></p> <p><b>Woodside assessment:</b> Woodside consults with Traditional Custodian groups or individuals and Nominated Representative Corporations.</p> <p><b>Woodside response:</b> Woodside confirmed consultation had occurred with relevant Traditional Owners in the preparation of this EP.</p>	<p><b>(5)</b></p> <p>Section 5.3 in the EP defines the methodology for identifying Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations.</p>
<p><b>(6)</b></p> <p>Requested DPIRD is advised within 24 hours of Woodside reporting an oil spill incident to the appropriate authority.</p>	<p><b>(6)</b></p> <p><b>Woodside assessment:</b> Woodside notes DPIRD requests within 24 hours a notification of an oil spill reporting to the appropriate authority.</p> <p><b>Woodside response:</b> Woodside confirmed with DPIRD that Department of Transport (DoT) is notified</p>	<p><b>(6)</b></p> <p>Woodside will consult DoT if there is a spill impacting State waters from the proposed activity, as referenced in the Oil Pollution First Strike Plan (Appendix H).</p> <p>Woodside will notify DPIRD within 24 hours of a notification to DoT for this EP, as referenced at Table</p>

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	within 2 hours of an oil spill and DPIRD would be advised within 24 hours if this occurred for this EP.	7-7 in this EP and in Appendix H – Oil Pollution First Strike Plan.
<p>(7)</p> <p>Requested baseline marine data be collected to compare against post-spill monitoring. This data to be made available to DPIRD upon request.</p>	<p>(7)</p> <p><b>Woodside assessment:</b> Woodside is a member of the Australian Energy Producers (AEP) Joint Industry Operational and Scientific Monitoring (OSM) Framework (AEP, 2021). In the event of a spill, the OSM Framework guides the situational awareness and response as well as undertake a suite of comprehensive science-based monitoring programs to evaluate environmental damage.</p> <p><b>Woodside response:</b> Woodside responded advising the OSM Framework guides the situational awareness and response and undertakes comprehensive science-based monitoring programs to evaluate environmental damage.</p>	<p>(7)</p> <p>Woodside has addressed oil spill preparedness and response strategy in Appendix G.</p>
<p>(8)</p> <p>Spawning and nursery areas for key fish species are particularly vulnerable to the impacts of spills. Requested specific strategies are in the EP to mitigate these risks.</p>	<p>(8)</p> <p><b>Woodside assessment:</b> Woodside notes DPIRD's request for specific strategies in the EP to mitigate risks of impact on vulnerable fish species.</p> <p><b>Woodside response:</b> Woodside responded advising that mitigation of oil spill events occurs through a range of preventative controls and is particularly focused on sensitive coastal areas, including important fish species spawning and in aggregation areas.</p>	<p>(8)</p> <p>Woodside has addressed oil spill preparedness and response strategy in Appendix G.</p>
<p>(9)</p> <p>Requested DPIRD is advised within 24 hours of any suspected or confirmed marine pests or diseases from vessels, rigs or equipment.</p>	<p>(9)</p> <p><b>Woodside assessment:</b> Woodside notes DPIRD's biosecurity policy and its request for notification within 24 hours of suspected or confirmed marine pests or diseases from vessels.</p> <p><b>Woodside response:</b> Woodside confirmed its compliance with DPIRD's biosecurity policy which includes notification within 24 hours of any suspected or confirmed marine pests or diseases from vessels.</p>	<p>(9)</p> <p>Woodside, Qualified IMS Inspector or contractor will notify DPIRD within 24 hours of any suspected or confirmed marine pests or diseases from vessels, rigs or equipment for this EP, as referenced in Section 7.10.4.3 of this EP.</p>

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<p><b>(10)</b> All potential impacts from invasive marine species to fisheries, fish resources and the aquatic environment are acknowledged in the EP with strategies to mitigate or minimise these impacts.</p>	<p><b>(10)</b> <b>Woodside assessment:</b> Woodside complies with all relevant regulations to prevent introducing of invasive marine species (IMS). Woodside noted DPIRD's request for all fisheries, fish resources and the aquatic environment to be acknowledged in the EP with strategies to mitigate or minimise impacts. <b>Woodside response:</b> Woodside advised of its compliance with all relevant regulations to prevent introducing of IMS. Woodside also advised vessels will be assessed and managed to prevent the introduction of IMS in accordance with Woodside's Invasive Marine Species Management Plan.</p>	<p><b>(10)</b> Introduction and establishment of invasive marine species risk evaluation is outlined in Section 6.8.7 and Section 7.2.3 of this EP.</p>
<p><b>(11)</b> DPIRD reserves the right to request further consultation and resolution as appropriate should there be any relevant, significant changes affecting fisheries prior to completion of Woodside's operations.</p>	<p><b>(11)</b> <b>Woodside assessment:</b> Feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP. <b>Woodside response:</b> Woodside confirmed DPIRD reserved the right to request further consultation and resolution throughout the life of the EP.</p>	<p><b>(11)</b> Woodside's ongoing consultation approach (refer to Section 7.9 of this EP), outlines that should consultation feedback be received following EP acceptance that identifies relevant new information or a measure or control that requires implementation or update to meet the intended outcome of consultation, Woodside will apply its EP Management of Knowledge process and Management of Change Process as appropriate.</p>
<p><b>(12)</b> New DPIRD contact provided for further questions related to feedback for this EP.</p>	<p><b>(12)</b> <b>Woodside assessment:</b> Woodside ensures contact details are kept up to date for all relevant persons. <b>Woodside response:</b> Woodside noted the new DPIRD contact and advised records were updated accordingly.</p>	<p><b>(12)</b> Not required.</p>
<p><b>(13)</b> Woodside response received.</p>	<p><b>(13)</b> <b>Woodside assessment:</b> Woodside addressed DPIRD's feedback and DPIRD has viewed this response as evidenced by its email confirmation of this. <b>Woodside response:</b> Woodside responded confirming DPIRD had received Woodside's response.</p>	<p><b>(13)</b> Not required.</p>

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While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 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 7.7.1).	Woodside considers the measures and controls in the EP are appropriate.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DPIRD for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DPIRD sufficient information to allow DPIRD to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>• The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DPIRD on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:</li> <li>• The purpose of consultation and set out what was being sought through consultation.</li> <li>• A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>• A timeframe for consultation and the provision of feedback.</li> <li>• A link to NOPSEMA's brochure 'Consultation on offshore petroleum environment plans'.</li> <li>• Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> <li>• On 31 March 2025, DPIRD consulted and shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DPIRD to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.</li> <li>• In addition to the information provided in the Consultation Information Sheet, Woodside provided DPIRD with further information in response to DPIRD's feedback (email of 10 April 2025).</li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed DPIRD a reasonable period for consultation in the preparation of this EP because:</p>		

- A consultation period was stated in the initial correspondence to DPIRD advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DPIRD 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DPIRD a reasonable period for consultation in preparation of the EP as evidenced by its response on 31 March 2025.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DPIRD is appropriate and adapted to the nature of interests of DPIRD:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DPIRD an activity update, offering DPIRD another opportunity to provide feedback.
- In this context, Woodside allowed DPIRD a reasonable period for consultation in preparation of the EP as evidenced by DPLH's response on 31 March 2025.

#### **Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- DPIRD provided feedback, but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
- Responded to feedback from DPIRD.
- As a result of consultation:
  - Following a marine spill incident, a notification will be made to DPIRD within 24 hours of Woodside reporting the incident to the appropriate authority. This notification has been added to the Oil Pollution First Strike Plan (Appendix H) and Section 7.10.4.3 of this EP.
  - Woodside included a notification to DPIRD within 24 hours of any suspected or confirmed marine pests or species as referenced in Section 7.10.4.3 of this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DPIRD's functions, interests or activities.

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#### 4.1.10 Department of Transport (DoT)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed DoT advising of the proposed activity (Record of Consultation, reference 6.1.16), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>(1) On 7 October 2024, DoT responded to Woodside (SI Report, reference 6.1) acknowledging that Woodside had provided the consultation material and chose not to provide feedback or objections.</li> <li>(1) On 21 November 2024, Woodside responded to DoT (SI Report, reference 6.2) to thank it for its response and note that DoT had acknowledged the consultation material had been provided.</li> <li>On 24 February 2025, Woodside emailed DoT an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.11).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> <li>On 17 March 2024, Woodside emailed DoT (SI Report, reference 6.3) and provided the Oil Pollution First Strike Plan (FSP) and a succinct summary of the FSP as requested by DoT in previous EP correspondence unrelated to this EP.</li> <li>(2) On 24 March 2025, DOT responded to Woodside (SI Report, reference 6.4), noting the FSP and summary provided and stating no further comments.</li> <li>(2) On 24 March 2025, Woodside responded to DOT (SI Report, reference 6.5), noting their reply and no further questions or comments.</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Acknowledged the consultation material and provided no feedback.	(1) <b>Woodside assessment:</b> Woodside accepts that DoT acknowledge the consultation material and chose not to provide feedback. <b>Woodside response:</b> Woodside noted DoT's feedback and that it no feedback or objections.	(1) Not required.
(2) Acknowledged the FSP and summary provided.	(2) <b>Woodside assessment:</b> Woodside accepts that DoT acknowledge the FSP and summary <b>Woodside response:</b> Woodside noted DoT's receipt of the FSP.	(2) Not required
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.	No additional controls or measures are required.

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	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 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 7.7.1).	
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DoT for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DoT sufficient information to allow DoT to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DoT on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> <li>On 7 October 2024, DoT shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DoT to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.</li> <li>Woodside responded to DoT noting its feedback on 21 November 2024 and 24 March 2025.</li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed DoT a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to DoT advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> </ul>		

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- Woodside's methodology allows a 30-day consultation period. Woodside allowed DoT 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DoT a reasonable period for consultation in preparation of the EP as evidenced by DoT's response on 7 October 2024.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DoT is appropriate and adapted to the nature of interests of DoT:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DoT an activity update, offering DoT another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to DoT as evidenced by its response on 21 November 2024 and 24 March 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- DoT provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from DoT and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with DoT because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DoT's functions, interests or activities.

## 4.2 Commonwealth and WA State Government departments or agencies – environment

### 4.2.1 Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed DAFF – Biosecurity advising of the proposed activity (Record of Consultation, reference 6.1.12), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.3).</li> <li>On 24 February 2025, Woodside emailed DAFF – Biosecurity an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.7).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DAFF – Biosecurity for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DAFF – Biosecurity sufficient information to allow DAFF – Biosecurity to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DAFF – Biosecurity on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure <i>'Consultation on offshore petroleum environment plans'</i>.</li> </ul> </li> </ul>		

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- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed DAFF – Biosecurity a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DAFF – Biosecurity advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DAFF – Biosecurity 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DAFF – Biosecurity a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DAFF – Biosecurity is appropriate and adapted to the nature of interests of DAFF – Biosecurity:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DAFF – Biosecurity an activity update, offering DAFF – Biosecurity another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding DAFF – Biosecurity of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DAFF – Biosecurity did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DAFF – Biosecurity's functions, interests or activities.

#### 4.2.2 Department of Biodiversity, Conservation and Attractions (DBCA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed DBCA advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.3).</li> <li>On 24 February 2025, Woodside emailed DBCA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DAFF – Biosecurity for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DBCA sufficient information to allow DBCA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DBCA on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul>		

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### Reasonable Period

Woodside allowed DBCA a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DBCA advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DBCA 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DBCA a reasonable period for consultation in preparation of the EP.

### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DBCA is appropriate and adapted to the nature of interests of DBCA:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DBCA an activity update, offering DBCA another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding DBCA of the opportunity to provide feedback.

### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DBCA did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DBCA functions, interests or activities.

### 4.2.3 Department of Climate Change, Energy, the Environment and Water (DCCEEW)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed DCCEEW advising of the proposed activity (Record of Consultation, reference 6.1.17), provided a Consultation Information Sheet, shipwreck information, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.7).</li> <li>On 26 November 2024, Woodside sent the consultation information to an additional email address, DCCEEW – Underwater Cultural Heritage, advising of the proposed activity (Record of Consultation, reference 6.1.18), provided a Consultation Information Sheet, shipwreck information, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 24 February 2025, Woodside emailed DCCEEW an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.12).</li> <li>On 13 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.3).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DCCEEW for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DCCEEW sufficient information to allow DCCEEW to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DCCEEW on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> </ul> </li> </ul>		

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- A link to NOPSEMA's brochure 'Consultation on offshore petroleum environment plans'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed DCCEEW a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DCCEEW advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DCCEEW 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DCCEEW a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DCCEEW is appropriate and adapted to the nature of interests of DCCEEW:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent DCCEEW an activity update, offering DCCEEW another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 13 March 2025, reminding DCCEEW of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DCCEEW did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DCCEEW functions, interests or activities.

#### 4.2.4 Director of National Parks (DNP)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed DNP advising of the proposed activity (Record of Consultation, reference 6.1.19), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.8).</li> <li>On 24 February 2025, Woodside emailed DNP an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.13).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> <li>On 25 March 2025, DNP replied to Woodside (SI Report, reference 7.1) and stated: <ul style="list-style-type: none"> <li>(1) No authorisations from DNP are required as the planned activities do not overlap any marine parks.</li> <li>(2) Woodside should identify and manage all impacts and risks on Australian marine parks in the EP.</li> <li>(3) Woodside should demonstrate consistency with North-west Marine Parks Network Management Plan 2018.</li> <li>(4) DNP requires notification of any oil/gas pollution incidences that occur as soon as possible.</li> </ul> </li> <li>On 28 March 2025, Woodside replied to DNP (SI Report, reference 7.2) to: <ul style="list-style-type: none"> <li>(1) Acknowledged no authorisation are required from DNP.</li> <li>(2) Confirmed Woodside manages all impacts and risks on AMP values (including ecosystem values) to an acceptable level.</li> <li>(3) Confirm the EP demonstrated that the activities will not be inconsistent with the North-west Marine Parks Network Management Plan 2018.</li> <li>(4) Confirmed notifications will be provided for change of planned activities or for emergency responses.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Confirmed no authorisations from DNP are required.	(1) <b>Woodside assessment:</b> Woodside notes no authorisations from DNP are required given planned activities do not overlap any marine parks. <b>Woodside response:</b> Woodside acknowledged DNP's feedback that no authorisations are needed.	(1) Not required.
(2) Woodside should identify and manage all impacts and risks on Australian marine parks in the EP..	(2) <b>Woodside assessment:</b> Woodside identifies and manages impacts and risks on AMP values.	(2) The EP demonstrates how Woodside will identify and manage all impacts and risks on AMP values (including ecosystem values) to an ALARP and acceptable level

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	<b>Woodside response:</b> Woodside confirmed it identified and managed impacts and risks on AMP values to an acceptable level and had considered all options to avoid or reduce them to ALARP.	and that the activity is not inconsistent with the management plan (see Section 6.7 and Section 6.8 of the EP).
<b>(3)</b> Woodside should demonstrate consistency with North-west Marine Parks Network Management Plan 2018	<b>(3)</b> <b>Woodside assessment:</b> The EP demonstrates that the activities will not be inconsistent with North-west Marine Parks Network Management Plan 2018. <b>Woodside response:</b> Woodside confirmed the EP demonstrates that activities would not be inconsistent with the North-west Marine Parks Network Management Plan 2018.	<b>(3)</b> Section 6.7 and Section 6.8 outlines how Woodside demonstrates consistency with the North-west Marine Parks Network Management Plan 2018
<b>(4)</b> Request for notifications for change of planned activities or for emergency responses.	<b>(4)</b> <b>Woodside assessment:</b> Woodside will notify DNP in the event of relevant changes to the activity, or for emergency response. <b>Woodside response:</b> Woodside confirmed it would notify the DNP on change of activity or emergency response.	<b>(4)</b> Woodside will notify the DNP as referenced in Table 7-5 and Table 7-7 in this EP.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DNP for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### **Sufficient Information**

Woodside has given DNP sufficient information to allow DNP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DNP on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 25 March 2025, DNP shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable DNP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to DNP noting its feedback on 28 March 2025.

#### **Reasonable Period**

Woodside allowed DNP a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DNP advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DNP 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DNP a reasonable period for consultation in preparation of the EP as evidenced by DNP's response on 25 March 2025.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DNP is appropriate and adapted to the nature of interests of DNP:

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- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DNP an activity update, offering DNP another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to DNP as evidenced by its response on 25 March 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- DNP provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from DNP and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - DNP was added to the EP's Table 7-7, following request for activity notifications.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DNP functions, interests or activities.

### 4.3 Commonwealth and WA State Government departments or agencies – industry

#### 4.3.1 Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DEMIRS advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed DEMIRS an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DEMIRS for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given DEMIRS sufficient information to allow DEMIRS to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DEMIRS on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed DEMIRS a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to DEMIRS advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> <li>Woodside's methodology allows a 30-day consultation period. Woodside allowed DEMIRS 60 days for consultation, which included an additional period following the activity update.</li> <li>Consultation for this EP commenced 7 months ago.</li> <li>In this context, Woodside allowed DEMIRS a reasonable period for consultation in preparation of the EP.</li> </ul> <p><b>Reasonable Opportunity</b></p> <p>A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DEMIRS is appropriate and adapted to the nature of interests of DEMIRS:</p>		

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- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent DEMIRS an activity update, offering DEMIRS another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024, reminding DEMIRS of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DEMIRS did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DEMIRS functions, interests or activities.

### 4.3.2 Department of Industry, Science and Resources (DISR)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed DISR advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed DISR an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DISR for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given DISR sufficient information to allow DISR to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to DISR on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed DISR a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to DISR advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed DISR 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed DISR a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with DISR is appropriate and adapted to the nature of interests of DISR:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- In February 2025 Woodside sent DISR an activity update, offering DISR another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024, reminding DISR of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as DISR did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on DISR's functions, interests or activities.

## 4.4 Commonwealth commercial fisheries and peak representative bodies

### 4.4.1 Commonwealth Fisheries Association (CFA)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed the CFA advising of the proposed activity (Record of Consultation, reference 6.1.9), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 24 February 2025, Woodside emailed CFA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.4).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	Woodside has assessed the potential for interaction with Commonwealth managed fisheries in Section 4.10.1 of this EP. Woodside will provide notifications to AFMA, CFA, DAFF – Fisheries, and individual Commonwealth relevant fishery licence holders (see Table 7-5 of this EP) ten days before activity commences, and following completion of activities, as referenced as PS 1.5 of this EP.  No additional measures or controls are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with CFA for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given CFA sufficient information to allow CFA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to CFA on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed CFA a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to CFA advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed CFA 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed CFA a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with CFA is appropriate and adapted to the nature of interests of CFA:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent CFA an activity update, offering CFA another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 14 March 2025, reminding CFA of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as CFA did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on CFA's functions, interests or activities.

### 4.4.2 North West Slope Trawl Fishery

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed North West Slope Trawl Fishery advising of the proposed activity (Record of Consultation, reference 6.1.20), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 24 February 2025, Woodside emailed North West Slope Trawl Fishery an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.14).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

#### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with North West Slope Trawl Fishery for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

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Woodside has given North West Slope Trawl Fishery sufficient information to allow North West Slope Trawl Fishery to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to North West Slope Trawl Fishery on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed North West Slope Trawl Fishery a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to North West Slope Trawl Fishery advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed North West Slope Trawl Fishery 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed North West Slope Trawl Fishery a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with North West Slope Trawl Fishery is appropriate and adapted to the nature of interests of North West Slope Trawl Fishery:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent North West Slope Trawl Fishery an activity update, offering North West Slope Trawl Fishery another opportunity to provide feedback.

#### Outcomes of Consultation

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Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as North West Slope Trawl Fishery did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on North West Slope Trawl Fisheries functions, interests or activities.

#### 4.4.3 Western Deepwater Trawl Fishery

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed Western Deepwater Trawl Fishery advising of the proposed activity (Record of Consultation, reference 6.1.20), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 24 February 2025, Woodside emailed Western Deepwater Trawl Fishery an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.14).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

##### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Western Deepwater Trawl Fishery for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

##### Sufficient Information

Woodside has given Western Deepwater Trawl Fishery sufficient information to allow Western Deepwater Trawl Fishery to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Western Deepwater Trawl Fishery on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.

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- A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
- A timeframe for consultation and the provision of feedback.
- A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed Western Deepwater Trawl Fishery a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Western Deepwater Trawl Fishery advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Western Deepwater Trawl Fishery 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Western Deepwater Trawl Fishery a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Western Deepwater Trawl Fishery is appropriate and adapted to the nature of interests of Western Deepwater Trawl Fishery:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Western Deepwater Trawl Fishery an activity update, offering Western Deepwater Trawl Fishery another opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as Western Deepwater Trawl Fishery did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.

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- The measures and controls described in this EP address the potential impact from the proposed activity on Western Deepwater Trawl Fisheries functions, interests or activities.

## 4.5 State commercial fisheries and peak representative bodies

### 4.5.1 Western Australian Fishing Industry Council (WAFIC)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed WAFIC advising of the proposed activity (Record of Consultation, reference 6.1.22), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- (1) On 1 October 2024, WAFIC responded to Woodside (SI Report, reference 9.1) requesting information to support consultation with the relevant state fisheries
- (1) On 3 October 2024, Woodside responded to WAFIC (SI Report, reference 9.2) confirming information to support consultation of the state fisheries..
- (1) On 3 October 2024, WAFIC emailed the relevant fishery licence holders (SI Report, reference 9.3) advising of the proposed activity, provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- (1) On 3 October 2024, WAFIC emailed Woodside (SI Report, reference 9.4) and confirmed that the fisheries had received the consultation information..
- (2) On 1 November 2024, WAFIC emailed Woodside (SI Report, reference 9.5) confirming it did not have any feedback from licence holders regarding this EP. WAFIC also provided the following further comments and questions:
  - (3) How will the infrastructure deemed practicable be recycled?
  - (4) Requested that Woodside note WAFIC's position that titleholders should not commit to artificial reef proposals until they have secured in-principle agreement with WAFIC.
  - (5) Requested that no infrastructure to be left in-situ that presents a snagging risk to current or future fishing operations.
  - (6) Confirmed that WAFIC does not support the use of over trawlable structures due to safety risks.
  - (7) Requested that no material or contaminants that presents significant risk to aquatic resources or marine environments remains in-situ.
  - (8) Requested that a benthic survey be completed, following decommissioning activities and prior to infrastructure being removed from navigational charts, to ensure that any infrastructure left in-situ does not present a snagging risk to current or future fishing operations.
  - (9) Sought confirmation on what Woodside had in place for oil spill response planning, including notifying WAFIC within 24 hours of event notification. WAFIC additionally offered assistance to communicate with WA fisheries should this be required.
  - (10) Sought confirmation Woodside had a current list of WA commercial fisheries that could be impacted by an unplanned spill scenario.
  - (11) Sought confirmation that Woodside had an effective Operational and Scientific Monitoring Program (OSMP) for the purposes of determining impacts and monitoring the recovery of the marine environment
  - (12) Shared its position on consultation with the WA fishing industry for unplanned events
  - (13) Advised Woodside's ongoing communication with mariners regarding notices on activities was appreciated and asked to be included in any vessel operation look ahead.

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<ul style="list-style-type: none"> <li>– (14) Confirmed it had no further comments and questions related to the proposed activities.</li> <li>• (2) On 11 February, Woodside noted WAFIC did not have any feedback from licence holders related to this EP (SI Report, reference 9.6). Woodside also responded to WAFIC as follows: <ul style="list-style-type: none"> <li>– (3) Affirmed its commitment to reusing, repurposing and/or recycling infrastructure wherever practicable, additionally Woodside confirmed that there is a 90% landfill avoidance by weight target for the combined NWS Rigid Pipeline Removal campaign.</li> <li>– (4) Confirmed that the planned activities do not include introducing an artificial reef.</li> <li>– (5) Confirmed that the infrastructure outlined in the EP is contained within the operating Angel field and therefore covered by an existing exclusion zone, which prevents public and/or fisheries access. Upon cessation of production a future Angel Decommissioning Environmental Plan will be developed to address the remaining infrastructure, navigational charts will be updated upon the completion of all decommissioning activities.</li> <li>– (6) Noted that WAFIC does not support over trawlable structures and confirmed that the planned activities do not include the use of over trawlable structures.</li> <li>– (7) Confirmed that no material or contaminants are planned to present an unacceptable risk from the planned activities.</li> <li>– (8) Confirmed a benthic survey will be undertaken at the completion of the full decommissioning of all Angel infrastructure, this will be included in a future Angel Decommissioning Environmental Plan. Confirmed an as left survey will be undertaken following the activities covered by this EP, given the currently in place exclusion zone around the Angel field there is no additional snagging risk to current or future fishing operations.</li> <li>– (9) Outlining that an Oil Strike Plan is in place for all EPs and contact would be made with WAFIC within 24 hours should this occur.</li> <li>– (10) Woodside had a current list of WA commercial fisheries that could be impacted by an unplanned spill scenario.</li> <li>– (11) Woodside had an effective Operational and Scientific Monitoring Program (OSMP) for the purposes of determining impacts and monitoring the recovery of the marine environment.</li> <li>– (12) Confirmed Woodside has incorporated WAFIC's consultation guidance into its consultation methodology.</li> <li>– (13) Confirmed activity notifications to WAFIC had been incorporated into the EP as standard controls.</li> <li>– (14) Noted that WAFIC had no further comments related to the proposed activities.</li> </ul> </li> <li>• On 24 February 2025, Woodside emailed WAFIC an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.17).</li> <li>• On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Confirmed consultation information was sent to fisheries/licence holders.	(1) <b>Woodside assessment:</b> Woodside noted that consultation information had been distributed to relevant fishery licence holders via WAFIC.	(1) Not required.

	<b>Woodside response:</b> Woodside thanked WAFIC for distributing consultation information to relevant fishery licence holders.	
<b>(2)</b> No feedback from fishery licence holders.	<b>(2)</b> <b>Woodside assessment:</b> Woodside noted that WAFIC did not get any feedback from fishing licence holders. <b>Woodside response:</b> Woodside acknowledged that WAFIC did not receive any feedback resulting from consultation with fishery licence holders.	<b>(2)</b> Not required.
<b>(3)</b> How will infrastructure be recycled.	<b>(3)</b> <b>Woodside assessment:</b> Woodside plans to recycle the recovered infrastructure in accordance with the waste management hierarchy philosophy to reduce waste disposal to landfill. <b>Woodside response:</b> Woodside affirmed its commitment to reusing, repurposing and/or recycling infrastructure wherever practicable, using the contractors waste management system.	<b>(3)</b> Section 3.10, Section 6.8.5 and Section 7.2.5 of the EP outline Woodsides approach to managing recycling of recovered infrastructure.
<b>(4)</b> Titleholders should not commit to artificial reef proposals until they have secured in-principle agreement with WAFIC.	<b>(4)</b> <b>Woodside assessment:</b> Woodside has not planned to introduce artificial reefs as part of this EP and noted WAFIC's position regarding the introduction of artificial reefs. <b>Woodside response:</b> Woodside confirmed with WAFIC that the planned activities do not include the introduction of artificial reefs.	<b>(4)</b> Section 3 of the EP outlines Woodsides plan to remove the infrastructure under this Any remaining infrastructure will be recorded in the Angel field inventory and managed under the accepted Angel Operations EP
<b>(5)</b> Infrastructure left in-situ presents a snagging risk to current and future fishing operations.	<b>(5)</b> <b>Woodside assessment:</b> The infrastructure outlined in this EP is located within an exclusion zone, which prevents access by fishers. A future Angel Decommissioning Environment Plan will be developed to address the remaining infrastructure in the Angel field.	<b>(5)</b> Section 3 of the EP outlines Woodsides plan to remove the infrastructure under this EP. Any remaining infrastructure will be recorded in the Angel field inventory and managed under the accepted Angel Operations EP

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	<b>Woodside response:</b> Woodside confirmed with WAFIC that the infrastructure outline in this EP is located within an exclusion zone, which prevents access. Woodside additionally confirmed that following the cessation of production a future Angel Decommissioning Environment Plan will be developed to address the remaining infrastructure in the Angel field.	
<b>(6)</b> Not supportive of the use of over trawable structures.	<b>(6)</b> <b>Woodside assessment:</b> Woodside noted WAFIC's position regarding over trawable structures. <b>Woodside response:</b> Woodside confirmed with WAFIC that the planned activities do not include the use of over trawable structures.	<b>(6)</b> Section 3 outlines Woodsides plan to remove the infrastructure under this EP and does not include the use of over trawable structures as part of this activity.
<b>(7)</b> No material or contaminants left in-situ that will present unacceptable risk to aquatic resources or the marine environment from contamination.	<b>(7)</b> <b>Woodside assessment:</b> Woodside does not consider there will be any unacceptable risk to aquatic resources or the marine environment from contamination. <b>Woodside response:</b> Woodside confirmed with WAFIC that the planned activities are not anticipated to present a material or contaminant risk.	<b>(7)</b> As per Section 6.7.1 and Section 6.7.7 material or contaminants are planned to present an unacceptable risk from decommissioning activities.
<b>(8)</b> Benthic survey should be undertaken to ensure no infrastructure is left that presents a snagging risk.	<b>(8)</b> <b>Woodside assessment:</b> Woodside plans to undertake a benthic survey following the full decommissioning of all Angel infrastructure, covered by a future Angel Decommissioning Environmental Plan. An as-left survey will be completed at the conclusion of this EP. <b>Woodside response:</b> Woodside confirmed a benthic survey would be undertaken following the full decommissioning of all Angel infrastructure, covered by a future Angel Decommissioning Environmental Plan. Woodside also confirmed that as there was currently an exclusion zone around the Angel field there was no additional snagging risk to current or future fishing operations.	<b>(8)</b> As outlined in Section 6.7.1 and Section 6.7.2 an ROV as-left survey is planned to be completed at the end of the activity, to ensure no infrastructure is left that presents a snagging risk. Any remaining infrastructure will be recorded in the Angel field inventory and managed under the accepted Angel Operations EP. The current exclusion zone around the operating field will continue to be in place until 2028 to prevent access, as such there should not be additional snagging risk to current or future fishing operations

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<p><b>(9)</b> Sought confirmation on oil spill arrangements including that WAFIC would be advised within 24 hours of an event notification. Offer made to communicate with the WA fishing industry if required.</p>	<p><b>(9)</b> <b>Woodside assessment:</b> Woodside has an Oil Pollution Strike Plan in place for all EPs and in the unlikely event of an unplanned hydrocarbon spill contact would be made with relevant persons within 24 hours. <b>Woodside response:</b> Woodside advised WAFIC it has an Oil Pollution First Strike Plan in place for this EP and confirmed in the unlikely event of an unplanned hydrocarbon spill, contact would be made with WAFIC within 24 hours. Woodside thanked WAFIC for confirming it would assist Woodside with communications with the fishing industry.</p>	<p><b>(9)</b> Woodside has addressed oil spill preparedness and response strategy in Appendix G</p>
<p><b>(10)</b> Sought confirmation that Woodside had a current list of WA fisheries that could be impacted by an unplanned spill scenario.</p>	<p><b>(10)</b> <b>Woodside assessment:</b> Woodside retains a list of commercial fishery licence holders which is updated approximately annually. <b>Woodside response:</b> Woodside advised WAFIC it had a list of commercial fishery licence holders which is updated approximately annually.</p>	<p><b>(10)</b> Not required.</p>
<p><b>(11)</b> Sought confirmation that Woodside had an effective Operational and Scientific Monitoring Program (OSMP).</p>	<p><b>(11)</b> <b>Woodside assessment:</b> Woodside has a well-established OSMP in place executed under the Joint Industry OSM Framework (AEP, 2021). <b>Woodside response:</b> Woodside confirmed with WAFIC an OSMP was in place executed under the Joint Industry OSM Framework.</p>	<p><b>(11)</b> The EP demonstrates Woodside has an effective OSMP in Annex C of the Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) (Appendix G).</p>
<p><b>(12)</b> Shared WAFIC consultation guidance with the WA fishing industry – <i>Consultation for unplanned events</i>.</p>	<p><b>(12)</b> <b>Woodside assessment:</b> Woodside accepts WAFIC's guidance on consultation with the WA fishing industry and has incorporated this into the Woodside consultation methodology.</p>	<p><b>(12)</b> Woodside consultation methodology (see Section 5.3.4 Table 5-2) incorporates WAFIC's consultation guidance.</p>

	<b>Woodside response:</b> Woodside advised WAFIC it had incorporated WAFIC's consultation guidance into the Woodside consultation methodology.	
<b>(13)</b> Asked to be included in any vessel operation look ahead associated with this EP.	<b>(13)</b> <b>Woodside assessment:</b> Woodside will notify WAFIC on activity commencement and completion as well as distances around temporary exclusion zones. <b>Woodside response:</b> Woodside advised WAFIC that activity notifications are incorporated into this EP as standard controls.	<b>(13)</b> Woodside will provide notifications to WAFIC (see Table 7.5 of this EP) prior to commencement and upon completion of activities, as referenced as PS 1.5 of the EP.
<b>(14)</b> No further comments related to this EP.	<b>(14)</b> <b>Woodside assessment:</b> Woodside accepts WAFIC has no further comments related to the proposed activities for this EP. <b>Woodside response:</b> Woodside noted WAFIC had no further comments related to this EP.	<b>(14)</b> Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	Woodside has assessed the potential for interaction with State-managed fisheries in Section 4.10.1 of the EP. No additional controls or measures are required
<b>Summary Report – Consultation Complete</b>		
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with WAFIC for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:  <b>Sufficient Information</b> Woodside has given WAFIC sufficient information to allow WAFIC to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:		

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- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to WAFIC on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 1 October 2024, WAFIC shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable WAFIC to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to WAFIC noting its feedback on 1 November 2024.

#### Reasonable Period

Woodside allowed WAFIC a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to WAFIC advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed WAFIC 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed WAFIC a reasonable period for consultation in preparation of the EP as evidenced by WAFIC's response on 11 February 2025.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with WAFIC is appropriate and adapted to the nature of interests of WAFIC:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent CFA an activity update, offering CFA another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to WAFIC as evidenced by its response on 1 November 2024.

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### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- WAFIC provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from WAFIC and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Included notifications to WAFIC prior to commencement and upon completion of activities, in PS 1.5 and Table 7.5 of this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on WAFIC's functions, interests or activities.

### 4.5.2 Mackerel Managed Fishery (Area 2), Pilbara Line Fishery, Pilbara Trap Fishery, Pilbara Trawl Fishery

#### Summary of information provided and record of consultation for this EP:

- On 3 October 2024, WAFIC, on behalf of Woodside, emailed the relevant WA fishery individual licence holders advising of the proposed activity (SI Report, reference 9.3), and provided a Consultation Information Sheet.
- On 1 November 2024, WAFIC emailed Woodside reporting that no feedback had been received for this activity from licence holders (SI Report, reference 9.5).
- On 24 February 2025, Woodside emailed WAFIC advising of an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.17).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation through WAFIC with licence holders for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:		
<b>Sufficient Information</b>		

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Woodside has given State licence holders sufficient information to allow State licence holders to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to State licence holders on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed State licence holders a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to State licence holders advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside, via WAFIC, allowed State license holders 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed State licence holders a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with State licence holders is appropriate and adapted to the nature of interests of State licence holders:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent WA fishery individual licence holders an activity update, via WAFIC, offering WA fishery individual licence holders another opportunity to provide feedback.

#### Outcomes of Consultation

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Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as State licence holders did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on State licence holders' functions, interests or activities.

## 4.6 Recreational marine users and peak representative bodies

### 4.6.1 Marine Tourism WA

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed Marine Tourism WA advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed Marine Tourism WA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Marine Tourism WA for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:		
<b>Sufficient Information</b>		

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Woodside has given Marine Tourism WA sufficient information to allow Marine Tourism WA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Marine Tourism WA on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed Marine Tourism WA a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Marine Tourism WA advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Marine Tourism WA 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Marine Tourism WA a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Marine Tourism WA is appropriate and adapted to the nature of interests of Marine Tourism WA:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Marine Tourism WA an activity update, via WAFIC, offering Marine Tourism WA another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding Marine Tourism WA of the opportunity to provide feedback.

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### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as Marine Tourism WA did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Marine Tourism WA's functions, interests or activities.

## 4.6.2 Pilbara/Kimberley Recreational Marine Users

### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside sent an email to individual Pilbara/Kimberley Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 6.1.20), 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 2024, Woodside sent a letter to individual Pilbara/Kimberley Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 6.1.21), 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 2024, as no response had been received, Woodside proactively sent a follow-up letter (Record of Consultation, reference 6.2.9).
- On 28 February 2025, Woodside emailed Pilbara/Kimberley Recreational Marine Users an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.14).
- On 4 April 2025, Woodside sent a letter to individual Pilbara/Kimberley Recreational Marine Users advising of the activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.15).
- On 16 April 2025, as no response had been received, Woodside proactively sent a follow-up letter (Record of Consultation, reference 6.4.4).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
Summary Report – Consultation Complete		

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Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Pilbara/Kimberley Recreational Marine Users for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### **Sufficient Information**

Woodside has given Pilbara/Kimberley Recreational Marine Users sufficient information to allow Pilbara/Kimberley Recreational Marine Users to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Pilbara/Kimberley Recreational Marine Users on 29 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
- The purpose of consultation and set out what was being sought through consultation.
- A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
- A timeframe for consultation and the provision of feedback.
- A link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the Community
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### **Reasonable Period**

- Woodside allowed Pilbara/Kimberley Recreational Marine Users a reasonable period for consultation in the preparation of this EP because:
- A consultation period was stated in the initial correspondence to Pilbara/Kimberley Recreational Marine Users advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Pilbara/Kimberley Recreational Marine Users 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced seven months ago.
- In this context, Woodside allowed Pilbara/Kimberley Recreational Marine Users a reasonable period for consultation in preparation of the EP.

#### **Reasonable Opportunity**

- A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Pilbara/Kimberley Recreational Marine Users is appropriate and adapted to the nature of interests of Gascoyne and Pilbara/Kimberley Recreational Marine Users:
- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Pilbara/Kimberley Recreational Marine Users an activity update, offering Pilbara/Kimberley Recreational Marine Users another opportunity to provide feedback.
- In the absence of feedback for the majority, Woodside sent a follow-up consultation email on 23 October 2024 and 18 April 2025, reminding Pilbara/Kimberley Recreational Marine Users of the opportunity to provide feedback.

**Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as Pilbara/Kimberley Recreational Marine Users did not provide material feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.

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### 4.6.3 Recfishwest

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed Recfishwest advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, Recfishwest responded to Woodside (SI Report, reference 11.1) and:
  - (1) Acknowledged its plans to conduct this EP's activities from Q3 2026 to Q1 2027.
  - (2) Advised that the proposed activities occurring will affect areas accessed by recreational fishers and requested updates to inform the fishing community about the 500m exclusion zones.
  - (3) Advised that sub-sea structures may provide equal or better environmental outcomes if left in-situ compared to complete removal.
- (1) On 7 October 2024 (SI Report, reference 11.2) and 21 November 2024 (SI Report, reference 11.3), Woodside responded to Recfishwest to note Recfishwest:
  - (1) Acknowledged the planned timelines.
  - (2) Required activity notifications for communicating with the recreational fishing community.
  - (3) Position on the potential suitability of subsea structures remaining in-situ.
- On 24 February 2025, Woodside emailed Recfishwest an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).
- On 25 March 2025, Recfishwest responded to Woodside (SI Report, reference 11.4) and:
  - (4) Advised they had no additional comments on the planned activities.
  - (5) Requested more information on Woodsides chemical assessment process.
  - (6) Requested more information on how cumulative impacts of release contaminants are considered.
- On 3 April 2025, Woodside responded to Recfishwest (SI Report, reference 11.5) to:
  - (4) Noted Recfishwest has no further comments on the planned activities.
  - (5) Provided information on Woodsides chemical assessment approach.
  - (6) Provided information on cumulative impacts of potential contaminant releases.

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Acknowledged planned timelines for this EP.	(1)	(1) Not required.

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	<p><b>Woodside assessment:</b> Woodside plans to conduct the proposed activities for this EP from Q3 2026 to Q1 2027.</p> <p><b>Woodside response:</b> Woodside noted Recfishwest understood the timing for the proposed activities for this EP.</p>	
<p><b>(2)</b> Proposed activities will affect areas used by recreational fishers and activity notifications are requested.</p>	<p><b>(2)</b> <b>Woodside assessment:</b> Woodside understands the general area is accessed by the charter industry and recreational fishers in large vessels and the need to provide notifications to Recfishwest.</p> <p><b>Woodside response:</b> Woodside confirmed Recfishwest would be notified prior to commencement and following completion of activities.</p>	<p><b>(2)</b> Woodside will provide notifications to Recfishwest as set out in PS 1.5 of the EP</p>
<p><b>(3)</b> Advised that there may be environmental benefit to leaving subsea structures in-situ.</p>	<p><b>(3)</b> <b>Woodside assessment:</b> Woodside understands Recfishwest's position that there may be benefits to recreational fishers by leaving subsea structures in-situ.</p> <p><b>Woodside response:</b> Woodside noted Recfishwest's position on the potential suitability of subsea structures remaining in-situ.</p>	<p><b>(3)</b> Not required.</p>
<p><b>(4)</b> No further comments on the planned activities.</p>	<p><b>(4)</b> <b>Woodside assessment:</b> Woodside noted that Recfishwest has no further comments on the planned activities.</p> <p><b>Woodside response:</b> Woodside acknowledged Recfishwest had no further comments.</p>	<p><b>(4)</b> Not required.</p>
<p><b>(5)</b> Requested more information on Woodsides chemical assessment process.</p>	<p><b>(5)</b> <b>Woodside assessment:</b> Woodside notes Recfishwest interest in the chemical assessment process</p> <p><b>Woodside response:</b> Woodside provided further information to Recfishwest on the chemical assessment process</p>	<p><b>(5)</b> Woodside has utilised the chemical assessment process as defined in Section 7.2.1 and Section 7.2.2 of the EP</p>

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<p>(6)</p> <p>Requested more information on how cumulative impacts of release contaminants are considered.</p>	<p>(6)</p> <p><b>Woodside assessment:</b> Woodside notes Recfishwest interest in the cumulative impacts of release contaminants.</p> <p><b>Woodside response:</b> Woodside provided further information to Recfishwest on the cumulative impacts of release contaminants.</p>	<p>(6)</p> <p>Woodside has considered the cumulative impacts of release contaminants for this EP in Section 6.7.7.</p>
<p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.</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 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 7.7.1).</p>	<p>No additional controls or measures are required.</p>
<p><b>Summary Report – Consultation Complete</b></p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with DoT for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given Recfishwest sufficient information to allow Recfishwest to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>• The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Recfishwest on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>– The purpose of consultation and set out what was being sought through consultation.</li> <li>– A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>– A timeframe for consultation and the provision of feedback.</li> <li>– A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> </ul> </li> </ul>		

- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

- On 2 October 2024 and 24 February 2025 Recfishwest shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable Recfishwest to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to Recfishwest noting its feedback on 2 October 2024 and 25 March 2025.

#### **Reasonable Period**

Woodside allowed Recfishwest a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Recfishwest advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Recfishwest 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Recfishwest a reasonable period for consultation in preparation of the EP as evidenced by Recfishwest's response on 2 October 2024 and 25 March 2025.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Recfishwest is appropriate and adapted to the nature of interests of Recfishwest:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Recfishwest an activity update, offering Recfishwest another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to Recfishwest as evidenced by its response on 2 October 2024 and 25 March 2025.

#### **Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Recfishwest provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from Recfishwest and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.

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- Made no changes or inclusions to the EP as a result of consultation with Recfishwest because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Recfishwest's functions, interests or activities.

#### 4.6.4 WA Game Fishing Association

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed the WA Game Fishing Association advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed the WA Game Fishing Association an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

##### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with the WA Game Fishing Association for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

##### Sufficient Information

Woodside has given the WA Game Fishing Association sufficient information to allow the WA Game Fishing Association to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to the WA Game Fishing Association on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.

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- A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
- A timeframe for consultation and the provision of feedback.
- A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed the WA Game Fishing Association a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to the WA Game Fishing Association advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed WA Game Fishing Association 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed WA Game Fishing Association a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with the WA Game Fishing Association is appropriate and adapted to the nature of interests of the WA Game Fishing Association:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent WA Game Fishing Association an activity update, offering WA Game Fishing Association another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding the WA Game Fishing Association of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as the WA Game Fishing Association did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.

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- The measures and controls described in this EP address the potential impact from the proposed activity on the WA Game Fishing Association's functions, interests or activities.

## 4.7 Titleholders and operators

### 4.7.1 INPEX Alpha, JX Nippon O&G Exploration (Australia), KATO Energy / KATO Corowa / KATO NWS / KATO Amulet, Kyushu Electric Wheatstone, Longreach Capital Investments, PE Wheatstone, Shell Australia, Skye Napoleon / Skye Resources, Western Gas

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed titleholders advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed titleholders an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with titleholders for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given titleholders sufficient information to allow titleholders to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p>		

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- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to titleholders on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed titleholders a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to titleholders advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed titleholders 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed titleholders a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with titleholders is appropriate and adapted to the nature of interests of titleholders:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent titleholders an activity update, offering titleholders another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding titleholders of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as titleholders did not provide feedback for this EP.

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- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable. The measures and controls described in this EP address the potential impact from the proposed activity on titleholders' functions, interests or activities.

#### 4.7.2 BP Developments Australia

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed BP advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- (1) On 21 October 2024, BP responded to Woodside (SI Report, reference 12.1) to advise it considered the impacts and risks identified will be appropriately managed and it had no feedback or objections at this time.
- (1) On 31 December 2024, Woodside responded to BP (SI Report, reference 12.2) to thank it for considering the impacts and risks for this EP will be appropriately managed under the proposed measures. Woodside also noted BP had no objections or other feedback at this time.
- On 24 February 2025, Woodside emailed BP an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Considered impacts and risks identified were appropriately managed and therefore had no feedback or objections.	(1) <b>Woodside assessment:</b> Woodside accepts that BP has no feedback at this time as it considers impacts and risks will be appropriately managed. <b>Woodside response:</b> Woodside noted BP's feedback that risks and impacts for this EP will be appropriately managed and therefore it had no feedback or objections.	(1) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation.	No additional controls or measures are required.

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	Should further 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 7.7.1).	
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with BP for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given BP sufficient information to allow BP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to BP on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> <li>On 21 October 2024, BP shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable BP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.</li> <li>Woodside responded to BP noting its feedback on 31 December 2024.</li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed BP a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to BP advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> <li>Woodside's methodology allows a 30-day consultation period Woodside allowed BP 60 days for consultation, which included an additional period following the activity update.</li> <li>Consultation for this EP commenced 7 months ago.</li> <li>In this context, Woodside allowed BP a reasonable period for consultation in preparation of the EP as evidenced by BP's response on 21 October 2024.</li> </ul>		

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### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with BP is appropriate and adapted to the nature of interests of BP:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent BP an activity update, offering titleholders another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to BP as evidenced by its response on 21 October 2024.

### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- BP provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from BP and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with BP because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on BP's functions, interests or activities.

## 4.7.3 Chevron Australia / Osaka Gas Gorgon / Tokyo Gas Gorgon / JERA Gorgon

### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed Chevron advising of the proposed activity (Record of Consultation, reference 6.1.23), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 12 November 2024, Chevron responded to Woodside (SI Report, reference 13.1) and:
  - (1) Thanked it for considering Chevron's functions, interests, and activities and confirm that Chevron has received the information provided and no issues have been identified.
  - (2) Provided a general comment across all proposed activities if the work plan is executed during the cyclone season, then Woodside should provide cyclone anchor configuration.
- On 25 February 2025, Woodside emailed Chevron an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.16).

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<ul style="list-style-type: none"> <li>On 12 March 2025, Woodside responded to Chevron (SI Report, reference 13.2) noting <ul style="list-style-type: none"> <li>(1) There were no issues identified with the EP</li> <li>(2) There were no plans for activities to occur in cyclone season, however in the unlikely case this was to occur the vessel contractors will implement a Cyclone Contingency Plan and detailed information about risks provided to Chevron.</li> </ul> </li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> <li>(1) On 19 March 2025, Chevron responded to Woodside (SI Report, reference 13.3), confirming that they had no feedback to provide.</li> <li>(1) On 27 March 2025, Woodside responded to Chevron (SI Report, reference 13.4), noting it had no feedback on the EP.</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) No issues identified.	(1) <b>Woodside assessment:</b> Woodside accepts that Chevron identified no issues with proposed EP activities. <b>Woodside response:</b> Woodside confirmed with Chevron that it had no issues with EP activities.	(1) Not required.
(2) Requested information related to cyclone season.	(2) <b>Woodside assessment:</b> Woodside understands that Chevron would want to be informed of risks to its assets if activities progressed during cyclone season but can confirm no planned operational activities will occur during this time. <b>Woodside response:</b> Woodside confirmed that planned activities associated with the EP will not occur during cyclone season however in the unlikely case it was to occur a Cyclone Contingency Plan would be put in place and detailed information about risks provided to Chevron.	(2) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation.	No additional controls or measures are required.

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	Should further 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 7.7.1).	
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Chevron for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given Chevron sufficient information to allow Chevron to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Chevron on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> <li>On 12 November 2024 and 19 March 2025, Chevron shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable Chevron to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.</li> <li>Woodside responded to Chevron noting its feedback on 12 March 2025 and 27 March 2025.</li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed Chevron a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to Chevron advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> <li>Woodside's methodology allows a 30-day consultation period. Woodside allowed Chevron 60 days for consultation, which included an additional period following the activity update.</li> <li>Consultation for this EP commenced 7 months ago.</li> </ul>		

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- In this context, Woodside allowed Chevron a reasonable period for consultation in preparation of the EP as evidenced by Chevron's response on 12 November 2024 and 19 March 2025.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Chevron is appropriate and adapted to the nature of interests of Chevron:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent Chevron an activity update, offering titleholders another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to Chevron as evidenced by its responses on 12 November 2024 and 19 March 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Chevron provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from Chevron and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with Chevron because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Finder Energy's functions, interests or activities.

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#### 4.7.4 Finder Energy (No 16)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Finder Energy advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>(1) On 1 October 2024, Finder Energy responded to Woodside (SI Report, reference 14.1) to advise that it had no feedback or objections at this time.</li> <li>(1) On 3 October 2024 (SI Report, reference 14.2) and 21 November 2024 (SI Report, reference 14.3), Woodside responded to Finder Energy to thank it for its reply and Woodside also noted Finder Energy had no objections or other feedback at this time.</li> <li>On 24 February 2025, Woodside emailed Finder Energy an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Had no feedback or objections at this time.	(1) <b>Woodside assessment:</b> Woodside accepts that Finder Energy has no feedback. <b>Woodside response:</b> Woodside noted that Finder Energy had no feedback or objections.	(1) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		
Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Finder Energy for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:		

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### Sufficient Information

Woodside has given Finder Energy sufficient information to allow Finder Energy to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Finder Energy on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 1 October 2024, Finder Energy shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable BP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to Finder Energy on 3 October 2024 noting its feedback.

### Reasonable Period

Woodside allowed Finder Energy a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Finder Energy advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Finder Energy 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Finder Energy a reasonable period for consultation in preparation of the EP as evidenced by Finder Energy's response on 1 October 2024.

### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Finder Energy is appropriate and adapted to the nature of interests of Finder Energy:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- In February 2025 Woodside sent Finder Energy an activity update, offering titleholders another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to Finder Energy as evidenced by its response on 1 October 2024.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Finder Energy provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from Finder Energy and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with Finder Energy because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Finder Energy's functions, interests or activities.

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## 4.7.5 KUFPEC

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed KUFPEC advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- (1) On 11 November 2024, KUFPEC responded to Woodside (SI Report, reference 15.1) to advise it had no feedback or objections on the proposed activities.
- On 24 February 2025, Woodside emailed KUFPEC an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).
- (1) On 25 March 2025, KUFPEC responded to Woodside (SI Report, reference 15.2) to advise it has objections on the proposed activities.
- (1) On 27 March 2025, Woodside responded to KUFPEC (SI Report, reference 15.3), to thank them for the response and note they have no objections to the proposed activities.

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Had no feedback or objections on the proposed activities.	(1) <b>Woodside assessment:</b> Woodside accepts that KUFPEC has no feedback or objections on the proposed activities. <b>Woodside response:</b> Woodside confirmed that KUFPEC had no feedback or objections on the proposed activities.	(1) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with KUFPEC for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given KUFPEC sufficient information to allow KUFPEC to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to KUFPEC on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).
- On 11 November 2024, KUFPEC shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable KUFPEC to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to KUFPEC noting its feedback on 11 November 2024 and 25 March 2025.

#### Reasonable Period

Woodside allowed KUFPEC a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to KUFPEC advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed KUFPEC 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed KUFPEC a reasonable period for consultation in preparation of the EP as evidenced by KUFPEC's response on 11 November 2024 and 25 March 2025.

#### Reasonable Opportunity

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A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with KUFPEC is appropriate and adapted to the nature of interests of KUFPEC:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- In February 2025 Woodside sent KUFPEC an activity update, offering titleholders another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to KUFPEC as evidenced by its response on 11 November 2024 and 25 March 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- KUFPEC provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from KUFPEC and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with KUFPEC because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on KUFPEC's functions, interests or activities.

#### 4.7.6 Mobil Australia Resources Company (Mobil)

##### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed Mobil advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 24 February 2025, Woodside emailed Mobil an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

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### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Mobil for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given Mobil sufficient information to allow Mobil to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Mobil on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.
  - A timeframe for consultation and the provision of feedback.
  - A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
  - Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed Mobil a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Mobil advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Mobil 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Mobil a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Mobil is appropriate and adapted to the nature of interests of Mobil:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.

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- In February 2025 Woodside sent Mobil an activity update, offering titleholders another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 14 March 2025, reminding Mobil of the opportunity to provide feedback.

**Outcomes of Consultation**

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as Mobil did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Mobil's functions, interests or activities.

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#### 4.7.7 Santos Ltd / Santos WA Northwest / Santos Offshore / Santos WA Southwest / Santos WA PVG

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Santos advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 18 October 2024, Santos responded to Woodside (SI Report, reference 16.1): <ul style="list-style-type: none"> <li>(1) Advised that it had planned activities in the same timeframe and vicinity of Woodside's activities and requested notification of planned vessel movements.</li> <li>(2) Advised Santos had no other feedback or objections on the proposed activities.</li> </ul> </li> <li>On 31 December 2024, Woodside responded to Santos (SI Report, reference 16.2) and: <ul style="list-style-type: none"> <li>(1) Thanked Santos for their understanding of the possibility of temporary vessel operations within Santos' adjacent title and confirmed it would provide Santos with start and end of activity notifications as requested.</li> <li>(2) Noted that Santos had no other feedback or objections.</li> </ul> </li> <li>On 24 February 2025, Woodside emailed Santos an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>(2) On 25 February 2025, Santos responded to Woodside (SI Report, reference 16.3), thanking Woodside for the update and confirming that Santos has no questions or concerns regarding the activities.</li> <li>(2) On 8 April 2025, Woodside thanked Santos for response and noted it had no further feedback on the planned activities (SI Report, reference 16.4).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<b>(1)</b> Requested notification of planned vessel movements as Santos has planned activities in the same timeframe and vicinity of the area.	<b>(1)</b> <b>Woodside assessment:</b> Woodside acknowledges that Santos may have planned activities at the same time in the same vicinity as Woodside's proposed activities for this EP. Woodside accepts its responsibility to advise Santos of these planned activities.  <b>Woodside response:</b> Woodside confirmed with Santos that it will provide notification prior to the commencement and ending of activities.	<b>(1)</b> Santos will be notified prior to commencement and upon completion of activities, as referenced in Table 7-5 (PS 1.5).  No additional measures or controls are required.

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(2) Had no other feedback or objections.	(2) <b>Woodside assessment:</b> Woodside accepts that Santos has no other feedback or objections. <b>Woodside response:</b> Woodside noted that Santos had no other feedback or objections.	(2) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Santos for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given Santos sufficient information to allow Santos to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Santos on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul>		

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- On 18 October 2024, Santos shared its feedback, claims or objections regarding this activity, indicating the information provided was sufficient to enable Santos to make an informed assessment of the possible consequences of the activity on its functions, interests or activities.
- Woodside responded to Santos noting its feedback on 31 December 2024.

#### Reasonable Period

Woodside allowed Santos a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Santos advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Santos 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Santos a reasonable period for consultation in preparation of the EP as evidenced by Santos' response on 18 October 2024 and 25 February 2025.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Santos is appropriate and adapted to the nature of interests of Santos:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Santos an activity update, offering titleholders another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to Santos as evidenced by its response on 18 October 2024 and 25 February 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Santos provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from Santos and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - As a result of Santos' feedback requesting activity notifications, this was added to Table 7-5 (PS 1.5) of the EP
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.

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- The measures and controls described in this EP address the potential impact from the proposed activity on Santos' functions, interests or activities.

## 4.8 Peak industry representative bodies

### 4.8.1 Australian Energy Producers (AEP)

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed AEP advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed AEP an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.

#### Summary Report – Consultation Complete

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with AEP for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:

#### Sufficient Information

Woodside has given AEP sufficient information to allow AEP to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:

- The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to AEP on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:
  - The purpose of consultation and set out what was being sought through consultation.
  - A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.

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- A timeframe for consultation and the provision of feedback.
- A link to NOPSEMA's brochure '*Consultation on offshore petroleum environment plans*'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed AEP a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to AEP advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed AEP 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed AEP a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with AEP is appropriate and adapted to the nature of interests of AEP:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Santos an activity update, offering titleholders another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding AEP of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as AEP did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on AEP functions, interests or activities.

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## 4.9 Traditional custodians and nominated representative corporations

### 4.9.1 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.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed BTAC advising of the proposed activity (Record of Consultation, reference 6.1.24), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that BTAC and its members may have within the EMBA.
  - (1) Details of BTAC's cultural values previously provided by BTAC to Woodside during consultation for other activities that may be relevant to the proposed activity. These cultural values include BTAC's cultural obligation to care for the environmental values of Sea Country, such as archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Mackerel Islands.
  - (1) A request from Woodside that BTAC confirm if there were any changes or additional information regarding cultural values that Woodside should consider in the preparation for this EP.
  - A request for feedback by 1 November 2024.
  - A request for information on how BTAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with BTAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for BTAC to provide information about the proposed activity to other individuals, as required.
  - Acknowledgement that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 3 October 2024, Woodside emailed BTAC an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed BTAC a reminder about the proposed activity (SI Report, reference 17.1). The email included:
  - A reference to the original consultation email for this EP sent to BTAC on 30 September 2024, which included Summary and Consultation Information Sheets and listed cultural values previously provided by BTAC to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how BTAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with BTAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for BTAC to provide information about the proposed activity to other individuals, as required.

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<ul style="list-style-type: none"> <li>On 21 October 2024, Woodside received an automated email 'failed delivery notice' to the reminder email sent earlier on the same day (SI Report, reference 17.2).</li> <li>On 21 October 2024, Woodside resent the activity reminder email to BTAC and copied another BTAC nominated officer to ensure the email was successfully delivered (SI Report, reference 17.3).</li> <li>(2, 3) On 18 November 2024, following a meeting between Woodside and BTAC on 15 November 2024 to discuss matters unrelated to this activity, Woodside emailed BTAC a summary of the meeting's outcomes and further actions by both parties (SI Report, reference 17.4), which included a scope for Sea Country mapping and a ranger proposal. Outcomes and matters relevant to this EP included: <ul style="list-style-type: none"> <li>(2) Woodside confirming it would meet with BTAC's heritage teams to undertake a workshop to discuss a heritage agreement and finalise the scope for Sea Country mapping.</li> <li>(3) Woodside requesting that BTAC send its ranger program proposal to Woodside for consideration.</li> </ul> </li> <li>On 24 February 2025, Woodside emailed BTAC an activity update about the proposed activity (Record of Consultation, reference 6.3.18). The email included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to BTAC on 30 September 2024.</li> <li>That changes have been made to the original Consultation Information Sheet previously provided to BTAC, such as that it provides more accurate information relating to the summary of key risks and impacts.</li> <li>The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with BTAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>On 13 March 2025, Woodside emailed BTAC a reminder about the activity (SI Report, reference 17.5), which included: <ul style="list-style-type: none"> <li>A reference to the activity update emailed to BTAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with BTAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) BTAC has a cultural obligation to care for the environmental values of Sea Country. BTAC's interests include archaeological sites identified on nearshore	(1) <b>Woodside assessment:</b> Woodside assessed BTAC's cultural obligation to care for environmental values of Sea Country to represent potential cultural values. The	(1) Woodside has recorded BTAC's interests and potential cultural values in Section 4.9: Cultural values and heritage, and assessed potential impact on these,

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islands including the Montebello Islands, Barrow Island and Mackerel Islands.	nearshore islands identified by BTAC are adjacent to the EMBA. <b>Woodside response:</b> Updated relevant sections in the EP to record interests and potential cultural values and assessed the potential impact on these and included controls. The islands may be impacted by the activities set out in the EP and Sea Country mapping will therefore continue even though consultation for this EP is closed.	including controls, in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
(2) BTAC and Woodside discussed Sea Country mapping, resulting in BTAC requesting Woodside's support in obtaining technical advice and for Sea Country mapping.	(2) <b>Woodside Assessment:</b> Woodside considers it beneficial for BTAC to have technical advice to ensure the delivery of an outcome that does justice to the work involved to map and record Sea Country values. <b>Woodside Response:</b> Woodside will meet with BTAC's heritage teams will undertake a workshop to discuss a heritage agreement and finalise the scope for Sea Country mapping	(2) Not required
(3) BTAC has requested support for a ranger program.	(3) <b>Woodside Assessment:</b> Woodside acknowledges the value in having trained rangers available in the highly unlikely event of an oil spill and agrees it would be beneficial to an immediate response in an emergency situation. <b>Woodside Response:</b> Woodside has requested BTAC send its ranger program proposal for consideration.	(3) The Program for Ongoing Engagement with Traditional Custodians (Appendix I) includes commitments to social investment to support Indigenous Ranger programs, and support for Indigenous oil spill response capabilities.
Woodside has addressed objections and claims, as noted above.	Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24. 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 7.7.1 of this EP).	Based on the engagement to date, no additional measures or controls are required.

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### Summary Report: Consultation Complete

Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with BTAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:

#### Sufficient Information

Sufficient information has been provided because:

- On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information to BTAC on 30 September 2024 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of BTAC's interests and how the activity could impact those interests.
  - A request for the consultation and information sheets to be distributed to members and individuals as required.
  - An offer to provide more specific information, maps and images if required.
- Woodside provided contact information for Woodside and NOPSEMA.
- Woodside provided updated information to BTAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to BTAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to BTAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.

#### Reasonable Period

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with BTAC on 30 September 2024 and requested BTAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to BTAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to BTAC, and requested BTAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to BTAC for 7 months, demonstrating a "reasonable period" of consultation.

#### Reasonable Opportunity

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A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on BTAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with BTAC members as well as the BTAC Board.
  - Asked BTAC to advise how it would like Woodside to engage and whether BTAC required further information.
- Woodside offered to meet with BTAC on a number of occasions.
- Throughout the consultation period, Woodside and BTAC have had direct contact lines to each other during the period.
- Woodside invites BTAC to Monthly Community Luncheons.

#### Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- BTAC advised Woodside that it has a cultural obligation to care for the environmental values of Sea Country and include archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Mackerel Islands. Woodside has assessed BTAC's cultural obligation to care for environmental values of Sea Country to represent potential cultural values, and recorded these interests and potential cultural values in Section 4.9 and assessed potential impact on these, including controls, in Section 6.
- During the past 7 months, BTAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

#### 4.9.2 Kariyarra Aboriginal Corporation (KAC)

KAC 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.

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**Historical engagement:**

- On 4 September 2024, Woodside met with KAC to present information about other EPs. KAC requested:
  - (1) Mitigation measures to be put in place for:
    - Sea turtle nesting.
    - Impacts to food sources.
    - Impacts to whale migration and Songlines.
- Woodside noted and responded at this meeting that:
  - (1) Similar concerns had been raised in relation to sea turtle nesting, whale migration and food source by other relevant Traditional Owner groups in the Pilbara and subsequently mitigation and avoidance measures had been included in subsequent EPs including this EP.

*Please see Scarborough Seabed Intervention and Trunkline Installation EP (Appendix F and SI Report) for further details of this correspondence.*

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed KAC advising of the proposed activity (Record of Consultation, reference 6.1.25), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that KAC and its members may have within the EMBA.
  - Details of KAC's cultural values previously provided by KAC to Woodside during consultation for other activities that may be relevant to the proposed activity. These cultural values include:
    - (2) KAC's access Sea Country rights and duties, including:
      - looking after and protecting Sea Country
      - fishing, trapping, crabbing, catching turtle and collecting shellfish
      - hunting dugong and taking stingray barbs for spears
      - the protection of Sea Country and totems such as mythic snakes.
    - (3) The potential impacts on coastal landforms and coastal native vegetation.
    - (4) The tangible and intangible heritage associated with the coast and the ocean.
  - (2, 3, 4) Woodside request KAC to confirm if there were any changes or additional information regarding cultural values that Woodside should consider in the preparation for the EP.
  - A request for feedback by 1 November 2024.
  - A request for information on how KAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KAC to understand how it would like information to be managed.

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- That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- A request for KAC to provide information about the proposed activity to other individuals, as required.
- Acknowledgement that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 3 October 2024, Woodside emailed KAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed KAC a reminder about the proposed activity (SI Report, reference 18.1). The email included:
  - A reference to the original consultation email for this EP sent to KAC on 30 September 2024, which included Summary and Consultation Information Sheets and listed cultural values previously provided by KAC to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how KAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for KAC to provide information about the proposed activity to other individuals, as required.
- On 24 February 2025, Woodside emailed KAC an activity update about the proposed activity (Record of Consultation, reference 6.3.19). The email included:
  - A reference to the original consultation email for this EP sent to KAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to KAC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 12 March 2025, Woodside emailed KAC a reminder about the activity (SI Report, reference 18.2) which included:
  - A reference to the activity update emailed to KAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KAC to understand how it would like information to be managed.

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<p>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</p>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<p>(1)</p> <p>KAC requested mitigation measures to be put in place for:</p> <ul style="list-style-type: none"> <li>• Sea turtle nesting.</li> <li>• Impacts to food sources.</li> <li>• Impacts to whale migration and Songlines.</li> </ul>	<p>(1)</p> <p><b>Woodside assessment:</b> Woodside acknowledges KAC's request for mitigation measures to be developed.</p> <p><b>Woodside response:</b> Similar concerns had been raised in relation to sea turtle nesting, whale migration and food source by other relevant Traditional Owner groups in the Pilbara and subsequently mitigation and avoidance measures had been included in subsequent EPs including this EP.</p>	<p>(1)</p> <p>Woodside acknowledges KAC's asserted connection to Sea Country (Section 4.9). Potential impacts on Cultural Features and Heritage Values are assessed in Section 6 of the EP.</p> <p>Woodside acknowledges KAC's asserted connection to Sea Country and Songlines in 4.9 Cultural Values and Heritage). Potential impacts on Cultural Features and Heritage Values are assessed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>
<p>(2)</p> <p>KAC has previously advised Woodside it has Sea Country rights and duties, including to look after and protect Sea Country and secret habitat totems. KAC has mentioned fishing, trapping, crabbing, catching turtle, hunting dugong, and using stingray barbs for spears and collecting shellfish.</p>	<p>(2)</p> <p><b>Woodside assessment:</b> Woodside acknowledges KAC's feedback about Sea Country.</p> <p><b>Woodside response:</b> Woodside has noted KAC's asserted values and interests in Sea Country in Section 4.9. Woodside understands cultural and environmental values are intrinsically linked; in addition to the specific controls for cultural features and heritage values including marine species and habitats.</p>	<p>(2)</p> <p>Woodside acknowledges KAC's asserted connection to Sea Country and Songlines in 4.9 Cultural Values and Heritage). Potential impacts on Cultural Features and Heritage Values are assessed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>
<p>(3)</p> <p>KAC has previously requested Woodside include measures to avoid impacts to coastal landforms and coastal native vegetation.</p>	<p>(3)</p> <p><b>Woodside assessment:</b> Assessment of the impacts and risks associated with the PAP is undertaken in accordance with and consistent with national and international standards and law and policies.</p> <p><b>Woodside response:</b> Woodside has implemented controls to reduce potential risks and impacts on the environment to ALARP and to an acceptable level.</p>	<p>(3)</p> <p>Woodside acknowledges KAC's asserted connection to Sea Country (Section 4.9 Cultural Values and Heritage). Potential impacts on Cultural Features and Heritage Values are assessed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>

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<p><b>(4)</b> KAC's legal representative has previously requested Woodside include measures to avoid impacts to tangible and intangible Aboriginal cultural heritage associated with the coast and the ocean.</p>	<p><b>(4)</b> <b>Woodside assessment:</b> Woodside seeks to avoid damage or disturbance to cultural heritage (including intangible heritage) and assesses cultural heritage impacts, including both direct and indirect impacts and risks associated with PAPs. Mitigation can include any measure or control aimed at supporting the viability of the intangible cultural heritage and its intergenerational transmission.  <b>Woodside response:</b> Woodside understands cultural and environmental values are intrinsically linked; in addition to the specific controls for cultural features and heritage values, the controls and performance standards in Section 6 will reduce impacts to cultural features and heritage values, including marine species and habitats.</p>	<p><b>(4)</b> Woodside acknowledges KAC's asserted connection to Sea Country (Section 4.9 Cultural Values and Heritage). Potential impacts on Cultural Features and Heritage Values are assessed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>
<p>Woodside has addressed objections and claims as noted above.</p>	<p>Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.  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 7.7.1 of this EP).</p>	<p>Based on the engagement to date, no additional measures or controls are required.</p>
<p><b>Summary Report: Consultation Complete</b></p>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with KAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b> Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to KAC on 30 September 2024 when consultation commenced. Woodside provided:</li> </ul>		

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- A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
- Links to the *NOPSEMA Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
- Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of KAC's interests and how the activity could impact those interests.
- A request for the consultation and information sheets to be distributed to members and individuals as required.
- An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to KAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to KAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to KAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with KAC on 30 September 2024 and requested KAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to KAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to KAC, and requested KAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to KAC for 7 months, demonstrating a "reasonable period" of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on KAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.

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- Offered for Woodside to speak with KAC members as well as the KAC Board.
- Asked KAC to advise how it would like Woodside to engage and whether KAC required further information.
- Woodside offered to meet with KAC on a number of occasions.
- Throughout the consultation period, Woodside and KAC have had direct contact lines to each other during the period.
- Woodside invites KAC to Monthly Community Luncheons.

**Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- KAC has previously advised Woodside that:
  - It has Sea Country rights and duties, including:
    - looking after and protecting Sea Country
    - fishing, trapping and crabbing
    - catching turtle
    - hunting dugong
    - using stingray barbs for spears and
    - collecting shellfish.
  - The protection of Sea Country and totems such as mythic snakes is of significance.
  - There are potential impacts on coastal landforms and coastal native vegetation.
  - There is tangible and intangible heritage associated with the coast and the ocean.
  - Woodside has recorded KAC's interests and cultural values in the proposed EP in the following sections:
    - Potential impacts on Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats) in Section 6.10 of the EP.
    - Description of Existing Environment (this includes assessing potential impact and controls)
    - Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.
- During the past 7 months, KAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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### **4.9.3 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.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed MAC advising of the proposed activity (Record of Consultation, reference 6.1.26), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that MAC and its members may have within the EMBA.
  - Details of cultural values previously provided by MAC to Woodside during consultation for other activities that may be relevant to the proposed activity. These cultural values include:
    - (1) There is a potential impact on Jinna (Songlines).
    - (2) That any development could potentially affect the natural movement, migration and/or other behaviour of marine species, and may have an impact on the cultural interpretation of the seasonal landscape, seascape and associated cultural behaviours.
  - (1, 2) A request from Woodside that MAC confirm if there were any changes or additional information regarding cultural values that Woodside should consider in the preparation for this EP.
  - A request for feedback by 1 November 2024.
  - A request for information on how MAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with MAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for MAC to provide information about the proposed activity to other individuals, as required.
- On 3 October 2024, Woodside emailed MAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed MAC a reminder about the proposed activity (SI Report, reference 19.1). The email included:
  - A reference to the original consultation email for this EP sent to MAC on 30 September 2024, which included Summary and Consultation Information Sheets and listed cultural values previously provided by MAC to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how MAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with MAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for MAC to provide information about the proposed activity to other individuals, as required.

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- On 23 October 2024, Traditional Owner members from MAC attended Woodside’s Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.3).
- On 21 November 2024, NYFL advised Woodside about the passing of a Senior Yindjibarndi Elder and founding member of NYFL. The NYFL Board advised that grieving protocols were underway, and the community was commencing a period of mourning (SI Report, reference 19.2). As a sign of respect, Woodside would be limiting communication with MAC until further notice.
- On 24 February 2025, Woodside emailed MAC an activity update about the proposed activity (Record of Consultation, reference 6.3.20). The email included:
  - A reference to the original consultation email for this EP sent to MAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to MAC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside’s mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with MAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2024, Woodside emailed MAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).
- On 5 March 2025, Traditional Owner members from MAC attended Woodside’s Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).
- On 12 March 2025, Woodside emailed MAC a reminder about the activity (SI Report, reference 19.3) which included:
  - A reference to the activity update emailed to MAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with MAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 24 March 2025, Woodside emailed MAC an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).
- On 26 March 2025, Traditional Owner members from MAC attended Woodside’s Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside discussed the process for writing EPs and how it communicates feedback from groups to NOPSEMA (SI Report, reference 30.9).

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Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<p>(1)</p> <p>MAC have previously raised concerns about the potential for impact on Jinna (Songlines).</p>	<p>(1)</p> <p><b>Woodside assessment:</b> Woodside acknowledges MAC's position that there is a lack of bathymetric information, which may have a potential impact on Jinna (Songlines).</p> <p><b>Woodside response:</b> Woodside is working with MAC to develop a scope of works to determine further bathymetric information on the area. This proposal is under consideration by MAC and Woodside remains supportive of undertaking this work. Woodside also remains supportive of conducting further ethnographic surveys with MAC, following the initial phase of works in 2020 which focussed on Jinna and their connection from Murujuga to inland areas.</p>	<p>(1)</p> <p>Cultural features and heritage values including Jinna (Songlines) are identified and assessed in Sections Section 4.9: Cultural values and heritage, and Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>
<p>(2)</p> <p>MAC stated that any development could potentially affect the natural movement, migration and/or other behaviour of marine species, and may have an impact on the cultural interpretation of the seasonal landscape, seascape and associated cultural behaviours.</p>	<p>(2)</p> <p><b>Woodside assessment:</b> Woodside considers the potential cultural impacts on marine species including impacts and associated controls for marine mammal paths and behaviour.</p> <p><b>Woodside response:</b> Woodside has undertaken numerous environmental studies that form part of the EPs and has an ongoing commitment to environmental studies and research some of which are set out on Woodside's website. Woodside also committed to ongoing consultation with MAC in relation to environmental impacts including to marine life.</p>	<p>(2)</p> <p>Woodside has assessed impacts and risks to marine species in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.</p>
<p>Woodside has addressed objections and claims as noted above.</p>	<p>Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.</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</p>	<p>Based on the engagement to date, no additional measures or controls are required.</p>

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	Change and Revision process (see Section 7.7.1 of this EP).	
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with MAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to MAC on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of MAC's interests and how the activity could impact those interests.</li> <li>A request for the consultation and information sheets to be distributed to members and individuals as required.</li> <li>An offer to provide more specific information, maps and images if required.</li> </ul> </li> <li>Woodside provided updated information to MAC on 24 February 2025 which included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to MAC on 30 September 2024.</li> <li>An updated Consultation Information Sheet highlighting changes made to the original version previously provided to MAC, which: <ul style="list-style-type: none"> <li>provides more accurate information relating to the summary of key risks and impacts.</li> <li>confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> </ul> </li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> </ul> </li> <li>Woodside provided contact information for Woodside and NOPSEMA.</li> </ul> <p><b>Reasonable Period</b></p> <p>A reasonable period for consultation in the preparation of this EP has been provided because:</p> <ul style="list-style-type: none"> <li>Woodside commenced consultation on this EP with MAC on 30 September 2024 and requested MAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.</li> <li>Woodside emailed an activity update to MAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to MAC, and requested MAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.</li> </ul>		

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- Woodside has addressed and responded to MAC for 7 months, demonstrating a “reasonable period” of consultation.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided and Woodside’s approach to consultation is appropriate and adapted because:

- Woodside sought direction on MAC’s preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside’s initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside’s First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with MAC members as well as the MAC Board.
  - Asked MAC to advise how it would like Woodside to engage and whether MAC required further information.
- Woodside offered to meet with MAC on a number of occasions.
- Throughout the consultation period, Woodside and MAC have had direct contact lines to each other during the period.
- Woodside invites MAC to Monthly Community Luncheons.

#### Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- MAC advised Woodside that:
  - Any activities that could potentially affect the natural movement or behaviour of marine species may impact cultural values. Woodside has assessed impacts and risks to marine species in Section 6 of the EP. Items relating to MAC appear in section 4.9.
  - There is a potential for impact on Jinna (Songlines). Woodside has assessed cultural features and heritage impacts and risks in Section 4.9 of the EP.
- During the past 7 months, MAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

#### 4.9.4 Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC)

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.

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**Historical engagement:**

- On 15 August 2023, Woodside attended a meeting with the NTGAC Board and YMAC representatives. Matters discussed relevant to this EP include:
  - (1) NTGAC expressed interest in whales and whale sharks. (1) Woodside noted NTGAC's interest in whales and whale sharks.

*Please see Scarborough Seabed Intervention and Trunkline Installation EP (Appendix F and SI Report) and Angel Facility Operations EP (Appendix F and SI Report) for further details of this correspondence.*

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed NTGAC advising of the proposed activity (Record of Consultation, reference 6.1.27), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that NTGAC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how NTGAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NTGAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for NTGAC to provide information about the proposed activity to other individuals, as required.
  - Acknowledgement that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 2 October 2024, NTGAC and Woodside exchanged emails about administrative matters relating to contact email addresses (SI Report, references 20.1 – 20.3).
- On 3 October 2024, Woodside emailed NTGAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed NTGAC a reminder about the proposed activity (SI Report, reference 20.4). The email included:
  - A reference to the original consultation email for this EP sent to NTGAC on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how NTGAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NTGAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for NTGAC to provide information about the proposed activity to other individuals, as required.

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<ul style="list-style-type: none"> <li>On 2 November 2024, Woodside's First Nations team spoke with relevant persons from NTGAC and Elders at the Dampier Beachside Markets (Record of Consultation, reference 6.8). The conversations included: <ul style="list-style-type: none"> <li>Information about Woodside's activities and related EPs including the proposed activity.</li> <li>An offer to further consult and meet face to face with NTGAC and Elders.</li> <li>Reference to printed Summary Information Sheets for a number of Woodside activities.</li> <li>Elders noted they had no feedback, objections or claims relating to the proposed activity, and were comfortable with the information being sent via NTGAC. Woodside notes and respects the feedback from Elders.</li> <li>NTGAC noted that upcoming AGMs, Sorry Business and Lore will impact its availability to consult over the next few months.</li> </ul> </li> <li>On 24 February 2025, Woodside emailed NTGAC an activity update about the proposed activity (Record of Consultation, reference 6.3.21). The email included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to NTGAC on 30 September 2024.</li> <li>That changes have been made to the original Consultation Information Sheet previously provided to NTGAC, such as that it provides more accurate information relating to the summary of key risks and impacts.</li> <li>The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NTGAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>On 24 February 2025, NTGAC emailed Woodside confirming receipt of the activity update emailed earlier the same day, advising that the update had been forwarded to the NTGAC Board and legal representative about the proposed activity (SI Report, reference 20.5).</li> <li>On 12 March 2025, Woodside emailed NTGAC a reminder about the activity (SI Report, reference 20.6) which included: <ul style="list-style-type: none"> <li>A reference to the activity update emailed to NTGAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NTGAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1)	(1)	(1)

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NTGAC have expressed a general interest in whales and whale sharks.	<p><b>Woodside assessment:</b> When developing EPs, Woodside considers potential cultural impacts on marine species including impacts and associated controls with whales and whale sharks.</p> <p><b>Woodside response:</b> Woodside recognises that whales and other species of totemic importance need to be protected, including their populations and migration patterns. As assessed in Section 6, Woodside considers that when the impacts and risks to marine species, including potential totemic species, have been reduced to ALARP and an acceptable level in offshore areas, the potential impacts and risks to cultural values associated with coastal Indigenous connection with, or traditional uses of marine species and associated ecosystems in nearshore coastal waters are also reduced to ALARP and an acceptable level.</p>	Woodside has updated and recorded NTGAC's interests and cultural values in in Section 4.9: Cultural values and heritage. Potential impact including controls are detailed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
While feedback has been received, there were no objections or claims.	<p>Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.</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 7.5.1 of this EP).</p>	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with NTGAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> </ul>		

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- Woodside provided information to NTGAC on 30 September 2024 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of NTGAC's interests and how the activity could impact those interests.
  - A request for the consultation and information sheets to be distributed to members and individuals as required.
  - An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to NTGAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to NTGAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to NTGAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### Reasonable Period

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with NTGAC on 30 September 2024 and requested NTGAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to NTGAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to NTGAC, and requested NTGAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to NTGAC for 7 months, demonstrating a "reasonable period" of consultation.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on NTGAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:

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- Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
- Offered for Woodside to speak with NTGAC members as well as the NTGAC Board.
- Asked NTGAC to advise how it would like Woodside to engage and whether NAC required further information.
- Woodside offered to meet with NTGAC on a number of occasions.
- Throughout the consultation period, Woodside and NTGAC have had direct contact lines to each other during the period.
- Woodside invites NTGAC to Monthly Community Luncheons.

**Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- NTGAC have expressed a general interest in whales and whale sharks. Woodside has updated and recorded NTGAC's interests and cultural values regarding marine species in in Section 4.9.1: Cultural values and heritage. Potential impact including controls are detailed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
- During the past 7 months, NTGAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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#### 4.9.5 Ngarluma Aboriginal Corporation (NAC)

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.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed NAC advising of the proposed activity (Record of Consultation, reference 6.1.28), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that NAC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how NAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for NAC to provide information about the proposed activity to other individuals, as required.
  - Acknowledgment that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 3 October 2024, Woodside emailed NAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 10 October 2024, NAC attended Woodside's Quarter 3 Heritage Meeting in Roebourne where Woodside presented to Traditional Owners (SI Report, reference 30.2). Matters relevant to this EP included:
  - Consultation outcomes for Woodside EPs.
  - An explanation of State and Commonwealth regulatory requirements.
  - An explanation of EMBA's.
  - The process Woodside undertakes to identify Traditional Owners groups.
  - How Traditional Owners can provide information to Woodside about cultural values, interests and activities.
  - If there are any other First Nations groups who should be consulted.
- On 14 October 2024, Woodside was notified that the cultural protocols associated with Sorry Business were in place, and that industry and government stakeholders had been asked to minimise contact with Traditional Owner groups including NAC as a sign of respect (SI Report, reference 21.1).
- On 21 October 2024, Woodside emailed NAC a reminder about the proposed activity (SI Report, reference 21.2). The email included:
  - A reference to the original consultation email for this EP sent to NAC on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how NAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.

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- Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with NAC to understand how it would like information to be managed.
- Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- A request for NAC to provide information about the proposed activity to other individuals, as required.
- On 23 October 2024, Traditional Owner members from NAC attended Woodside’s Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.3).
- On 15 November 2024, Woodside emailed NAC to invite it to Woodside’s Quarterly Heritage Meeting on 5 December 2024, as an opportunity for Woodside to provide updates on Woodside’s activities to Traditional Owner groups and to receive feedback from the community. Woodside also requested a list attendees and attendance fees (SI Report, reference 21.3).
- On 21 November 2024, NYFL advised Woodside about the passing of a Senior Yindjibarndi Elder and founding member of NYFL. The NYFL Board advised that grieving protocols were underway, and the community was commencing a period of mourning (SI Report, reference 21.4). As a sign of respect, Woodside would be limiting communication with NAC.
- On 5 December 2024, NAC attended Woodside’s Quarterly Heritage Meeting (SI Report, reference 30.4). Relevant matters discussed included:
  - An overview of upcoming EPs
  - An explanation of ongoing consultation.
  - Reminder about monthly community luncheons.
- On 11 December 2024, Woodside became aware via a social media post from RRRKAC that due to the recent passings of two significant Elders cultural grieving protocols were underway. Woodside understood this information was relevant for Woodside’s consultation with NAC (SI Report, reference 21.5).
- On 22 January 2025, Woodside emailed NAC information about Quarterly Heritage meetings scheduled for 2025 (SI Report, reference 21.6).
- On 24 February 2025, Woodside emailed NAC an activity update about the proposed activity (Record of Consultation, reference 6.3.22). The email included:
  - A reference to the original consultation email for this EP sent to NAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to NAC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside’s mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with NAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2025, Woodside emailed NAC a reminder about the Quarterly Heritage Meeting scheduled for 13 March 2025 (SI Report, reference 21.7).

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<ul style="list-style-type: none"> <li>On 4 March 2024, Woodside emailed NAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).</li> <li>On 5 March 2025, Traditional Owner members from NAC attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).</li> <li>On 12 March 2025, Woodside emailed NAC a reminder about the activity (SI Report, reference 21.8) which included: <ul style="list-style-type: none"> <li>A reference to the activity update emailed to NAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet .</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>On 13 March 2025, NAC attended Woodside's Quarterly Heritage Meeting (SI Report, reference 30.7). Matters discussed and/or raised relating to this EP included: <ul style="list-style-type: none"> <li>That consultation is open for the life of any EP and Woodside can schedule consultation meetings at times that are convenient to the community.</li> <li>A reminder that Woodside hosts a community luncheon and yarnning circle for all local Traditional Owners.</li> </ul> </li> <li>On 24 March 2025, Woodside emailed NAC an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).</li> <li>On 26 March 2025, Traditional Owner members from NAC attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside discussed the process for writing EPs and how it communicates feedback from groups to NOPSEMA (SI Report, reference 30.9).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1 of this EP).	No additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with NAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> </ul>		

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- Woodside provided information to NAC on 30 September 2024 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of NAC's interests and how the activity could impact those interests.
  - A request for the consultation and information sheets to be distributed to members and individuals as required.
  - An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to NAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to NAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to NAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### Reasonable Period

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with NAC on 30 September 2024 and requested NAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to NAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to NAC, and requested NAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to NAC for 7 months, demonstrating a "reasonable period" of consultation.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on NAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:

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- Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
- Offered for Woodside to speak with NAC members as well as the NAC Board.
- Asked NAC to advise how it would like Woodside to engage and whether NAC required further information.
- Woodside offered to meet with NAC on a number of occasions.
- Throughout the consultation period, Woodside and NAC have had direct contact lines to each other during the period.
- Woodside invites NAC to Quarterly Heritage Meetings and Monthly Community Luncheons.

**Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, NAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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#### 4.9.6 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.

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**Historical engagement:**

- (1) On 11 January 2024, Woodside and RRKAC, had a telephone discussion, during which RRKAC advised that some Country cultural heritage is located on the coast and may potentially be affected by an oil spill or another such environmental incident. (1) Woodside acknowledged the feedback.

Please see *Scarborough Seabed Intervention and Trunkline Installation EP (Appendix F and SI Report)*.

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed RRKAC advising of the proposed activity (Record of Consultation, reference 6.1.29), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that RRKAC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how RRKAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with RRKAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for RRKAC to provide information about the proposed activity to other individuals, as required.
- On 3 October 2024, Woodside emailed RRKAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed RRKAC a reminder about the proposed activity (SI Report, reference 22.1). The email included:
  - A reference to the original consultation email for this EP sent to RRKAC on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how RRKAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with RRKAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for RRKAC to provide information about the proposed activity to other individuals, as required.
- On 11 December 2024, Woodside became aware via a social media post from RRKAC that due to the recent passings of two significant Elders cultural grieving protocols were underway (SI Report, reference 22.2).
- On 19 December 2024, RRKAC emailed Woodside about a number of matters relating to other activities (SI Report, reference 22.3). In relation to the proposed activity and ongoing consultation, RRKAC:

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- (2) Considers its Heritage Advisory Committee (HAC) as the relevant person for the purpose of consultation and advised Woodside that RRKAC has increased capacity and will be in a position via its HAC to engage in consultation with Woodside in 2025. This involves subject matter experts reviewing the relevant material to be able to make a formal assessment and participating in meetings where Woodside present information to RRKAC.
- (2) Advised Woodside that RRKAC has scheduled four HAC meetings in 2025 and inviting Woodside to a meeting on 18 February 2025.
- (3) Informed Woodside that RRKAC is keen to discuss a seascape scale approach to understanding the potential risks and impacts to submerged heritage values, in relation to potential management measures contained in EPs.
- (2) On 14 January 2025, Woodside accepted RRKAC's invitation to the HAC meeting on 18 February 2025 (SI Report, reference 22.4).
- On 14 January 2025, Woodside replied to RRKAC's email of 19 December 2024 responding to a number of claims by RRKAC relating to other EPs (SI Report, reference 22.5). (2) Woodside confirmed it had complied with Commonwealth regulations by providing RRKAC with sufficient information, a reasonable opportunity and reasonable time to provide feedback for EPs. (3) In regard to seascape mapping, Woodside stated it did not have plans to conduct bathymetric surveys but was open to meeting with RRKAC to discuss publicly available datasets and Woodside's own mapping of deeper water areas.
- (2) On 15 January 2025, RRKAC emailed Woodside a response to its email on 14 January 2025 and provided details relating to the planned HAC meeting (SI Report, reference 22.6).
- (2) On 29 January 2025, Woodside emailed RRKAC following a phone call. The email confirmed agreement between Woodside and RRKAC to defer Woodside attending the HAC meeting until May 2025 (SI Report, reference 22.7).
- On 24 February 2025, Woodside emailed RRKAC an activity update about the proposed activity (Activity update, reference 6.3.23). The email included:
  - A reference to the original consultation email for this EP sent to RRKAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to NTGAC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with RRKAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2025 Woodside emailed RRKAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).
- On 5 March 2025, Traditional Owner members from RRKAC attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).
- On 12 March 2025, Woodside emailed RRKAC a reminder about the activity (SI Report, reference 22.8) which included:
  - A reference to the activity update emailed to RRKAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.

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<ul style="list-style-type: none"> <li>– Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with RRKAC to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> <li>• On 24 March 2025, Woodside emailed RRKAC an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside’s Response	Inclusion in Environment Plan
<b>(1)</b> RRKAC advised that some Country cultural heritage is located on the coast and may potentially be affected by an oil spill or another such environmental incident.	<b>(1)</b> <b>Woodside assessment:</b> Woodside acknowledges RRKAC’s connection to coastal cultural heritage and the potential impact from an oil spill or other environmental incident. <b>Woodside response:</b> Woodside has considered RRKAC’s claim to cultural heritage associated with its coastline, which will be included in Section 4.9 of the EP. 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 the EP, and Appendix H.	<b>(1)</b> Woodside has considered RRKAC’s claim to coastline cultural heritage which will be included in Section 4.9: Cultural values and heritage. Woodside has addressed oil spill preparedness and response strategy in Appendix G.
<b>(2)</b> RRKAC informed Woodside that it considers RRKAC’s Heritage Advisory Committee (HAC) as the relevant person for the purpose of consultation and advised Woodside that RRKAC has increased capacity and will be in a position via its HAC to engage in consultation with Woodside in 2025. RRKAC also advised Woodside that RRKAC has scheduled four HAC meetings in 2025 and invited Woodside to a meeting on 18 February 2025.	<b>(2)</b> <b>Woodside assessment:</b> Woodside acknowledges that RRKAC’s HAC has increased capacity to regularly meet with Woodside in 2025 for the purpose of EP consultation. Woodside has emailed RRKAC consistently throughout the period of time that this EP has been open for consultation and has provided RRKAC with sufficient information, a reasonable opportunity and reasonable time to provide feedback for EPs. <b>Woodside response:</b> Woodside has accepted RRKAC’s invitation to meet with HAC throughout 2025 and present information about current and future EPs. Woodside also confirms that it has complied with	<b>(2)</b> Not required.

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	regulation 25 of the Environment Regulations for the purposed of this activity and related EP.	
(3) RRKAC raised the potential of a bathymetric survey of the coastline, working with all relevant coastal groups.	(3) <b>Woodside Assessment:</b> Woodside does not have plans to conduct regional bathymetric surveys but there are publicly available datasets covering coastal regions.  <b>Woodside Response:</b> Woodside is seeking a meeting with RRKAC to find ways to interpret existing data sets to generate information which may be useful to RRKAC.	(3) Not required.
Woodside has addressed objections and claims as noted above.	Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.  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 7.7.1 of this EP).	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with RRKAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to RRKAC on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of RRKAC's interests and how the activity could impact those interests.</li> </ul> </li> </ul>		

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- A request for the consultation and information sheets to be distributed to members and individuals as required.
- An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to RRKAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to RRKAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to RRKAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with RRKAC on 30 September 2024 and requested RRKAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to RRKAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to RRKAC, and requested RRKAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to RRKAC for 7 months, demonstrating a "reasonable period" of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on RRKAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with RRKAC members as well as the RRKAC Board.
  - Asked RRKAC to advise how it would like Woodside to engage and whether RRKAC required further information.
- Woodside offered to meet with RRKAC on a number of occasions.
- Throughout the consultation period, Woodside and RRKAC have had direct contact lines to each other during the period.

#### **Outcomes of Consultation**

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The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- RRKAC advised Woodside that some Country cultural heritage is located on the coast and may potentially be affected by an oil spill or another such environmental incident. Woodside has assessed cultural features and heritage impacts and risks in Section 4.9: Cultural values and heritage.
- During the past 7 months RRKAC has provided feedback, but has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

#### 4.9.7 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.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed WAC advising of the proposed activity (Record of Consultation, reference 6.1.30), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that WAC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how WAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with WAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for WAC to provide information about the proposed activity to other individuals, as required.
- On 30 September 2024, Woodside met with WAC (SI Report, reference 23.1). At the meeting:
  - WAC discussed administrative matters relating to resourcing plans and has prioritised appointing a new Board at its Annual General Meeting in November.
  - WAC noted it has recently appointed a new Trustee and is negotiating its annual budget.
  - Woodside reported at the meeting that throughout September 2024, it has undertaken a number of discussions face to face and via telephone calls with WAC members and Elders about EP consultation and reasons why Woodside consults with relevant groups.
- On 1 October 2024, WAC emailed Woodside suggesting that Woodside provide an overview of activities due to a number of EPs open for consultation, at the next meeting of the WAC Board. WAC would prepare a quote for costs and advise of the next meeting date (SI report, reference 23.2).
- On 1 October 2024, Woodside emailed WAC confirming it was available to consult on EPs, reminding WAC that feedback for the preparation of this EP closes on 1 November 2024, and suggesting that the meeting with the WAC Board occur before the closing date – with Woodside discussing next steps once the quote had been submitted (SI Report, reference 23.3).
- On 3 October 2024, Woodside emailed WAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 10 October 2024, WAC attended Woodside's Quarter 3 Heritage Meeting in Roebourne where Woodside presented to Traditional Owners (SI Report, reference 30.2). Matters relevant to this EP included:
  - Consultation outcomes for Woodside EPs.
  - An explanation of State and Commonwealth regulatory requirements.
  - An explanation of EMBA's
  - The process Woodside undertakes to identify Traditional Owners groups.
  - How Traditional Owners can provide information to Woodside about cultural values, interests and activities.

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- If there are any other First Nations groups who should be consulted.
  - On 14 October 2024, Woodside was notified that the cultural protocols associated with Sorry Business were in place, and that industry and government stakeholders had been asked to minimise contact with Traditional Owner groups including WAC as a sign of respect (SI Report, reference 23.4).
  - On 18 October 2024, Woodside emailed WAC confirming the Woodside representative at the WAC Board meeting on 28 October 2024, and requesting a quote for costs (SI Report, reference 23.5).
  - On 21 October 2024, Woodside emailed WAC a reminder about the proposed activity (SI Report, reference 23.6). The email included:
    - A reference to the original consultation email for this EP sent to WAC on 27 September 2024, which included Summary and Consultation Information Sheets.
    - A reminder that consultation for the preparation of this EP closes on 30 October 2024.
    - An update on the activity's well location co-ordinates and water depths.
    - A request for information on how WAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
    - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with WAC to understand how it would like information to be managed.
    - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
    - A request for WAC to provide information about the proposed activity to other individuals, as required.
  - On 24 October 2024, WAC emailed Woodside about administrative matters relating to Woodside's attendance at the WAC Board meeting on 28 October 2024 (SI Report, reference 23.7).
  - On 28 October 2024, Woodside met with the WAC Board and Elders in Karratha to provide an overview of Woodside's consultation process and the proposed activity (SI Report, reference 23.8). The presentation included the following information:
    - An overview of Woodside assets and activities in Western Australia.
    - Woodside's commitment to working with First Nations communities, the process for consultation, and the importance of its relationships with, Traditional Owners.
    - Reinforced that Woodside wants to hear from Elders and members about activities, their concerns, what we should do about them, what we need to consider regarding EPs.
    - Information about the Commonwealth regulator, NOPSEMA.
    - EPs and decommissioning activities including:
      - Information about the proposed activity and EP including an overview, planned activities, the EMBA and Operational Area, and potential impacts and controls.
      - Questions to consider when consulting on EPs.
      - Opportunities for questions and further discussions, action items and feedback on consultation.
      - Reminded attendees that consultation remains open after Woodside submits the EP – and for the life of the EP.
      - Requested if there are any other people/groups Woodside should talk to about the decommissioning activities.
    - Explanation about the removal of the subsea equipment and plugging of wells associated with inactive wells.
- In regards to this activity and in response to questions from WAC, Woodside:

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- Confirmed the use of concrete is best practice and Woodside is responsible for wells and is required to fix them.
- Confirmed that wells are checked regularly. Woodside complies with international best practice and guided by NOPSEMA's regulations regarding monitoring.
- Explained the use of vessels, cranes and equipment to remove flowlines from the seabed and transport back to mainland for recycling.
- Discussed with the most credible scenario of a vessel collision.
- Explained an independent, external party conducts approximately 200 spill modelling scenarios which explains the size of the EMBA.
- Outlined the potential impacts and control such as interactions with other vessels, marine protection, sound omissions, cutting subsea flowlines, sewage discharge from activity, and emissions to air/lighting. Woodside also outlined unplanned events raised included vessel collision, diesel from refuelling, and unplanned discharge.
- Requested if there were any questions, feedback or objections. (1) WAC stated it had no issues or concerns relating to the proposed activity. (1) Woodside acknowledge the feedback.
- (1) On 29 October 2024, WAC emailed Woodside thanking it for the presentation in-person to the WAC Board and acknowledging Woodside's professionalism. WAC confirmed that it did not have any further feedback or objections at the time to the proposed activity, however reserved the right to provide comment at a later date if any perceived environmental or cultural issues became evident. WAC stated it was satisfied that consultation had occurred (SI Report, reference 23.9). (1) Woodside noted that WAC had no further feedback or objections to the proposed activity, which would be reflected in the EP.
- On 2 November 2024, a Woodside First Nations team member spoke with relevant persons from WAC and Elders at the Dampier Beachside Markets (Record of Consultation, reference 6.8). The conversations included:
  - Information about Woodside's activities and related EPs including the proposed activity.
  - An offer to further consult and meet face to face with WAC and Elders.
  - Reference to printed Summary Information Sheets for a number of Woodside activities.
  - Elders noted they had no feedback, objections or claims relating to the proposed activity, and were comfortable with the information being sent via WAC. Woodside notes and respects the feedback from Elders.
  - WAC noted that upcoming AGMs, Sorry Business and Lore will impact its availability to consult over the next few months.
- On 15 November 2024, Woodside emailed NAC to invite it to Woodside's Quarterly Heritage Meeting on 5 December 2024, as an opportunity for Woodside to provide updates on Woodside's activities to Traditional Owner groups and to receive feedback from the community. Woodside also requested a list attendees and attendance fees (SI Report, reference 23.10).
- On 21 November 2024, NYFL advised Woodside about the passing of a Senior Yindjibarndi Elder and founding member of NYFL. The NYFL Board advised that grieving protocols were underway, and the community was commencing a period of mourning (SI Report, reference 23.11). As a sign of respect, Woodside would be limiting communication with WAC.
- On 5 December 2024, WAC attended Woodside's Quarterly Heritage Meeting (SI Report, reference 30.4). Relevant matters discussed included:
  - An overview of upcoming EPs
  - An explanation of ongoing consultation.
  - Reminder about monthly community luncheons.
- On 22 January 2025, Woodside emailed WAC details about Quarterly Heritage meetings in 2025 (SI Report, reference 23.12).

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- On 24 February 2025, Woodside emailed WAC an activity update about the proposed activity (Record of Consultation, reference 6.3.24). The email included:
  - A reference to the original consultation email for this EP sent to WAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to WAC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with WAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2025, Woodside emailed WAC a reminder about the Quarterly Heritage Meeting scheduled for 13 March 2025 (SI Report, reference 23.13).
- On 4 March 2025 Woodside emailed WAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).
- On 5 March 2025, Traditional Owner members from WAC attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).
- On 12 March 2025, Woodside emailed WAC a reminder about the activity (SI Report, reference 23.14) which included:
  - A reference to the activity update emailed to WAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet .
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with WAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 13 March 2025, WAC attended Woodside's Quarterly Heritage Meeting (SI Report, reference 30.7). Matters discussed and/or raised relating to this EP included:
  - That consultation is open for the life of any EP and Woodside can schedule consultation meetings at timers that are convenient to the community..
  - A reminder that Woodside hosts a community luncheon and yarning circle for all local Traditional Owners.
- On 24 March 2025, Woodside emailed WAC an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).
- On 26 March 2025, Traditional Owner members from WAC attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside discussed the process for writing EPs and how it communicates feedback from groups to NOPSEMA (SI Report, reference 30.9).

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Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) WAC confirmed it had no issues or concerns relating to this EP.	(1) Woodside assessment: Woodside acknowledges that WAC had no issues or concerns, including no objections or claims, regarding this EP.  Woodside response: 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 7.7.1 of this EP).	(1) No action required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.  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 7.7.1 of this EP).	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with WAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to WAC on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> </ul> </li> </ul>		

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- Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of WAC’s interests and how the activity could impact those interests.
- A request for the consultation and information sheets to be distributed to members and individuals as required.
- An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to WAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to WAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to WAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside’s mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with WAC on 30 September 2024 and requested WAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside’s methodology of a 30-day period for consultation.
- Woodside emailed an activity update to WAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to WAC, and requested WAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to WAC for 7 months, demonstrating a “reasonable period” of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside’s approach to consultation is appropriate and adapted because:

- Woodside sought direction on WAC’s preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside’s initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside’s First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with WAC members as well as the WAC Board.
  - Asked WAC to advise how it would like Woodside to engage and whether WAC required further information.
- Woodside offered to meet with WAC on a number of occasions.

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- Throughout the consultation period, Woodside and WAC have exchanged multiple emails, met on two occasions and have otherwise had direct contact lines to each other during the period.
- Woodside invites WAC to Quarterly Heritage Meetings and Monthly Community Luncheons.

**Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, WAC has provided feedback that it has no objections or claims about the proposed activity.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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#### 4.9.8 Yindjibarndi Aboriginal Corporation (Yindjibarndi)

Yindjibarndi 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. In August 2023, Yindjibarndi formally notified Woodside that NYFL has been delegated to represent Yindjibarndi regarding oil and gas matters, including consultation for EPs.

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**Historical engagement:**

- (1) On 1 August 2023, Yindjibarndi formally notified Woodside that Oil and Gas matters relating to Yindjibarndi be directed to NYFL. (1) Woodside acknowledged this and adjusted its consultation accordingly.

Please see *Scarborough Seabed Intervention and Trunkline Installation EP (Appendix F and SI Report)* for further details of this correspondence.

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed Yindjibarndi (via NYFL) advising of the proposed activity (Record of Consultation, reference 6.1.31), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that Yindjibarndi and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how Yindjibarndi would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with Yindjibarndi to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for Yindjibarndi to provide information about the proposed activity to other individuals, as required.
- On 3 October 2024, Woodside emailed Yindjibarndi (via NYFL) an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 14 October 2024, Woodside was notified that the cultural protocols associated with Sorry Business were in place, and that industry and government stakeholders had been asked to minimise contact with Traditional Owner groups including Yindjibarndi as a sign of respect (SI Report, reference 24.1).
- On 21 October 2024, Woodside emailed Yindjibarndi (via NYFL) a reminder about the proposed activity (SI Report, reference 24.2). The email included:
  - A reference to the original consultation email for this EP sent to Yindjibarndi on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how Yindjibarndi would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with Yindjibarndi to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for Yindjibarndi to provide information about the proposed activity to other individuals, as required.
- (2) On 21 October 2024, Yindjibarndi (via NYFL) emailed Woodside asserting (SI Report, reference 24.3):
  - No formal consultation had taken place between NYFL, in its capacity as the delegated representative for Yindjibarndi, and Woodside on this EP and others.

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- Woodside’s emails did not meet the standard of meaningful consultation.
- Woodside has provided NYFL with a draft consultation agreement but had declined to agree with NYFL’s estimated costs to proceed with the agreement.
- NYFL would progress consultation on this EP and others once the consultation agreement had been formalised.
- Woodside note in any record provided to NOPSEMA that NYFL had not been consulted on this EP and others.
- On 23 October 2024, Traditional Owner members from Yindjibarndi attended Woodside’s Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.3).
- On 2 November 2024, Woodside’s First Nations team spoke with relevant persons from Yindjibarndi and Elders at the Dampier Beachside Markets (Record of Consultation, reference 6.8). The conversations included:
  - Information about Woodside’s activities and related EPs including the proposed activity.
  - An offer to further consult and meet face to face with Yindjibarndi and Elders.
  - Reference to printed Summary Information Sheets for a number of Woodside activities.
  - Elders noted they had no feedback, objections or claims relating to the proposed activity, and were comfortable with the information being sent via Yindjibarndi. Woodside notes and respects the feedback from Elders.
  - Yindjibarndi noted that upcoming AGMs, Sorry Business and Lore will impact its availability to consult over the next few months.
- (2, 2) Between 2 – 20 November 2024, emails were exchanged between NYFL (as the delegated representative for Yindjibarndi) and Woodside regarding the 4 November 2024 email and requests to meet regarding the draft consultation agreement. Please refer to NYFL’s SI Report, references 28.3 – 28.7).
- On 21 November 2024, NYFL advised Woodside about the passing of a Senior Yindjibarndi Elder and founding member of NYFL. The NYFL Board advised that grieving protocols were underway, and the community was commencing a period of mourning (SI Report, reference 24.4). As a sign of respect, Woodside would be limiting communication with Yindjibarndi.
- On 24 February 2025, Woodside emailed Yindjibarndi (via NYFL) an activity update about the proposed activity (Record of Consultation, reference 6.3.25). The email included:
  - A reference to the original consultation email for this EP sent to Yindjibarndi on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to Yindjibarndi, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside’s mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with Yindjibarndi to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2025 Woodside emailed Yindjibarndi (via NYFL) an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).

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<ul style="list-style-type: none"> <li>On 5 March 2025, Traditional Owner members from Yindjibarndi attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).</li> <li>On 12 March 2025, Woodside emailed Yindjibarndi (via NYFL) a reminder about the activity (SI Report, reference 24.5) which included: <ul style="list-style-type: none"> <li>A reference to the activity update emailed to Yindjibarndi on 24 February 2025, which referenced changes to the original Consultation Information Sheet.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with Yindjibarndi to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>On 24 March 2025, Woodside emailed Yindjibarndi (via NYFL) an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).</li> <li>On 26 March 2025, Traditional Owner members from Yindjibarndi attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside discussed the process for writing EPs and how it communicates feedback from groups to NOPSEMA (SI Report, reference 30.9).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) Yindjibarndi has instructed Woodside that it will be represented by NYFL in ongoing discussion about EPs.	(1) <b>Woodside assessment:</b> Woodside accepts Yindjibarndi's right to be represented by NYFL. <b>Woodside response:</b> Woodside will engage with NYFL on behalf of Yindjibarndi for ongoing consultation related to this activity.	(1) Ongoing consultation will be undertaken as set out in Management of Change and Revision process, Section 7.7.1 of the EP.
(2) NYFL has stated that no formal consultation had taken place with NYFL, in its capacity as the delegated representative for Yindjibarndi, and Woodside on this EP. NYFL would progress consultation on this EP once the draft consultation agreement was finalised.	(2) <b>Woodside assessment:</b> Woodside rejects NYFL's assertion that has not been consulted on this EP. Woodside began consulting Yindjibarndi (via NYFL) on 30 September 2024 and has provided sufficient information, a reasonable period of time, and reasonable opportunity for Yindjibarndi (via NYFL) to provide feedback. Woodside has clearly communicated to Yindjibarndi (via NYFL) that consultation for this EP and others has occurred in parallel to negotiations about the draft consultation agreement. Woodside notes that the consultation agreement is not required to	(2) Not required.

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	<p>undertake and/or consult with Yindjibarndi (via NYFL) on EPs.</p> <p><b>Woodside response:</b> The information provided by Woodside meets the requirements of Regulation 25 of the Environment Regulations for the reasons set out above.</p>	
While feedback has been received, there were no objections or claims.	<p>Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.</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 7.7.1 of this EP).</p>	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with Yindjibarndi (via NYFL) for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to Yindjibarndi (via NYFL) on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of Yindjibarndi's interests and how the activity could impact those interests.</li> <li>A request for the consultation and information sheets to be distributed to members and individuals as required.</li> <li>An offer to provide more specific information, maps and images if required.</li> </ul> </li> <li>Woodside provided updated information to Yindjibarndi (via NYFL) on 24 February 2025 which included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to Yindjibarndi on 30 September 2024.</li> </ul> </li> </ul>		

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- An updated Consultation Information Sheet highlighting changes made to the original version previously provided to Yindjibarndi, which:
  - provides more accurate information relating to the summary of key risks and impacts.
  - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
- An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with Yindjibarndi (via NYFL) on 30 September 2024 and requested Yindjibarndi (via NYFL) provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to Yindjibarndi (via NYFL) on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to Yindjibarndi (via NYFL), and requested Yindjibarndi (via NYFL) provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to Yindjibarndi (via NYFL) for 7 months, demonstrating a "reasonable period" of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on Yindjibarndi's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with Yindjibarndi's members as well as the Yindjibarndi Board.
  - Asked Yindjibarndi (via NYFL) to advise how it would like Woodside to engage and whether Yindjibarndi required further information.
- Woodside offered to meet with Yindjibarndi (via NYFL) on a number of occasions.
- Throughout the consultation period, Woodside and Yindjibarndi (via NYFL) have exchanged emails and have had direct contact lines to each other during the period.

#### **Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, Yindjibarndi (via NYFL) has not raised objections or claims about the adverse impact of the activity to which this EP relates.

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| <ul style="list-style-type: none"><li>• Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).</li></ul> |
|---|

#### **4.9.9 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.

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**Summary of information provided and record of consultation for this EP:**

- On 1 October 2024, Woodside emailed YAC advising of the proposed activity (Record of Consultation, reference 6.1.32), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that YAC and its members may have within the EMBA.
  - Details of YAC's cultural values previously provided by YAC to Woodside during consultation for other activities that may be relevant to the proposed activity. These include:
    - (1) That plants, animals and the environment are inexorably linked to its culture.
    - (2) Concerns about potential impacts to patterns of whales and potential collisions.
    - (3) Advised that seagrass, mullet and dugong in Shark Bay are important resources.
  - (1, 2, 3) A request from Woodside that YAC confirm if there were any changes or additional information regarding cultural values that Woodside should consider in the preparation for this EP.
  - A request for feedback by 1 November 2024.
  - A request for information on how YAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for YAC to provide information about the proposed activity to other individuals, as required.
  - Acknowledgement that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 21 October 2024, Woodside emailed YAC a reminder about the proposed activity (SI Report, reference 25.1). The email included:
  - A reference to the original consultation email for this EP sent to YAC on 30 September 2024, which included Summary and Consultation Information Sheets and listed cultural values previously provided by YAC to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how YAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for YAC to provide information about the proposed activity to other individuals, as required.

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<ul style="list-style-type: none"> <li>On 2 November 2024, Woodside's First Nations team spoke with relevant persons from YAC and Elders at the Dampier Beachside Markets (Record of Consultation, reference 6.8). The conversations included: <ul style="list-style-type: none"> <li>Information about Woodside's activities and related EPs including the proposed activity.</li> <li>An offer to further consult and meet face to face with YAC and Elders.</li> <li>Reference to printed Summary Information Sheets for a number of Woodside activities.</li> <li>Elders noted they had no feedback, objections or claims relating to the proposed activity, and were comfortable with the information being sent via Yindjibarndi. Woodside notes and respects the feedback from Elders that they had no objections or claims relating to the proposed activity.</li> <li>YAC noted that upcoming AGMs, Sorry Business and Lore will impact its availability to consult over the next few months.</li> </ul> </li> <li>On 24 February 2025, Woodside emailed YAC an activity update about the proposed activity (Record of Consult, reference 6.3.26). The email included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to YAC on 30 September 2024.</li> <li>That changes have been made to the original Consultation Information Sheet previously provided to YAC, such as that it provides more accurate information relating to the summary of key risks and impacts.</li> <li>The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>On 12 March 2025, Woodside emailed YAC a reminder about the activity (SI Report, reference 25.2) which included: <ul style="list-style-type: none"> <li>A reference to the activity update emailed to YAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet .</li> <li>An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YAC to understand how it would like information to be managed.</li> <li>Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) YAC stated that plants, animals and the environment are inexorably linked to its culture and asked whether Woodside had undertaken environmental studies,	(1) <b>Woodside assessment:</b> Woodside acknowledges YAC's feedback that plants, animals and the environment are inexorably linked to its culture.	(1) Woodside has updated record YAC's interests and potential cultural values in in Section 4.9: Cultural values and heritage. Potential impact including controls

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whether these studies were ongoing and what environmental monitoring occurred after EPs were approved.	<p>Woodside has undertaken numerous environmental studies, has an ongoing commitment to research and conducts environmental monitoring after EPs are accepted.</p> <p><b>Woodside response:</b> Woodside has advised YAC that it has undertaken numerous environmental studies, has an ongoing commitment to research and conducts environmental monitoring after EPs are accepted.</p> <p>Woodside has also advised YAC that it continues to take feedback for the life on an EP and will inform YAC of any new information in relation to risks.</p>	are detailed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
(2) YAC expressed concern about potential impacts to patterns of whales and potential collisions.	<p>(2)</p> <p><b>Woodside assessment:</b> Woodside has noted YAC's interest in whales and has controls in place to minimise impacts and risks to whales.</p> <p><b>Woodside response:</b> Woodside has advised YAC that controls are put in place to minimise impacts and risks to whales.</p>	(2) Woodside has updated Section 4.9: Cultural values and heritage, to record YAC's interests and potential cultural values. Potential impact on these, including controls are detailed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
(3) YAC advised that seagrass, mullet and dugong in Shark Bay are important resources.	<p>(3)</p> <p><b>Woodside assessment:</b> Woodside has noted YAC's interest in seagrass, mullet and dugong in Shark Bay.</p> <p><b>Woodside response:</b> Woodside has advised YAC that controls are in place to mitigate risk to seagrass, mullet and dugong in the unlikely case of an environmental incident.</p>	(3) Woodside has updated Section 4.9 to record YAC's interests and potential cultural values. Potential impact on these, including controls are detailed in Section 6.
Woodside has addressed objections and claims as noted above.	<p>Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.</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 7.7.1 of this EP).</p>	Based on the engagement to date, no additional measures or controls are required.

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### Summary Report: Consultation Complete

Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with YAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:

#### Sufficient Information

Sufficient information has been provided because:

- On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.
- Woodside provided information to YAC on 30 September 2024 when consultation commenced. Woodside provided:
  - A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of YAC's interests and how the activity could impact those interests.
  - A request for the consultation and information sheets to be distributed to members and individuals as required.
  - An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to YAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to YAC on 1 October 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to YAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### Reasonable Period

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with YAC on 30 September 2024 and requested YAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to YAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to YAC, and requested YAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to YAC for 7 months, demonstrating a "reasonable period" of consultation.

#### Reasonable Opportunity

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A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on YAC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with YAC members as well as the YAC Board.
  - Asked YAC to advise how it would like Woodside to engage and whether YAC required further information.
- Woodside offered to meet with YAC on a number of occasions.
- Throughout the consultation period, Woodside and YAC have had direct contact lines to each other during the period.

#### Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- YAC has previously advised Woodside that there are potential impacts to the environment, and plants, animals and the environment are inexorably linked to its culture (including whales), and the environment generally, are inexorably linked to their culture and advised that seagrass, mullet and dugong in Shark Bay are important resources.
- Woodside has recorded YAC's cultural and environmental values in the EP in the following sections:
  - Section 4.9.1: Cultural values and heritage.
  - Potential impact including controls are detailed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
- During the past 7 months, YAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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## **4.10 Native Title representative bodies**

### **4.10.1 Kimberley Land Council (KLC)**

Kimberley Land Council is the Native Title Representative Body for the Kimberley region of Western Australia. As such, it is not a Prescribed Body Corporate or Registered Native Title Body Corporate but exists to assist Native Title claimants and holders.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed KLC advising of the proposed activity (Record of Consultation, reference 6.1.33), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email content included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that KLC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how KLC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KLC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for KLC to provide information about the proposed activity to other individuals, as required.
- On 21 October 2024, Woodside emailed KLC a reminder about the proposed activity (SI Report, reference 26.1). The email included:
  - A reference to the original consultation email for this EP sent to KLC on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how KLC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KLC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for KLC to provide information about the proposed activity to other individuals, as required.
- On 24 February 2025, Woodside emailed KLC an activity update about the proposed activity (Record of Consultation, reference 6.3.27). The email included:
  - A reference to the original consultation email for this EP sent to KLC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to KLC, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with KLC to understand how it would like information to be managed.

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<ul style="list-style-type: none"> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> <li>• On 12 March 2025, Woodside emailed KLC a reminder about the activity (SI Report, reference 26.2) which included: <ul style="list-style-type: none"> <li>– A reference to the activity update emailed to KLC on 24 February 2025, which referenced changes to the original Consultation Information Sheet .</li> <li>– An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>– Woodside’s commitment to managing gender-restricted or other culturally sensitive information, and working with KLC to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside’s Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1 of this EP).	No additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with KLC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>• On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>• Woodside provided information to KLC on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>– A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>– Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>– Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of KLC’s interests and how the activity could impact those interests.</li> <li>– A request for the consultation and information sheets to be distributed to members and individuals as required.</li> <li>– An offer to provide more specific information, maps and images if required.</li> </ul> </li> </ul>		

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- Woodside provided updated information to KLC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to KLC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to KLC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### Reasonable Period

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with KLC on 30 September 2024 and requested KLC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to KLC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to KLC, and requested KLC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to KLC for 7 months, demonstrating a "reasonable period" of consultation.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on KLC's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with KLC's members as well as the KLC Board.
  - Asked KLC to advise how it would like Woodside to engage and whether KLC required further information.
- Woodside offered to meet with KLC on a number of occasions.
- Throughout the consultation period, Woodside and KLC have had direct contact lines to each other during the period.

#### Outcomes of Consultation

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, KLC has not raised objections or claims about the adverse impact of the activity to which this EP relates.

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| <ul style="list-style-type: none"><li>• Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).</li></ul> |
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#### **4.10.2 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 representing the cultural rights of a Traditional Custodian Community but exist to assist native title claimants and holders.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed YMAC advising of the proposed activity (Record of Consultation, reference 6.1.34), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that YMAC and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how YMAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YMAC to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for YMAC to provide information about the proposed activity to other individuals, as required.
- On 2 October 2024, YMAC and Woodside exchanged emails clarifying and confirming the correct contact details when emailing EP consultation information and materials (SI Report, reference 27.1 – 27.3).
- On 3 October 2024, Woodside emailed YMAC an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed YMAC a reminder about the proposed activity (SI Report, reference 27.4). The email included:
  - A reference to the original consultation email for this EP sent to YMAC on 30 September 2024, which included Summary and Consultation Information Sheets and listed cultural values previously provided by YMAC to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how YMAC would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YMAC to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for YMAC to provide information about the proposed activity to other individuals, as required.
- On 24 February 2025, Woodside emailed YMAC an activity update about the proposed activity (Record of Consultation, reference 6.3.28). The email included:
  - A reference to the original consultation email for this EP sent to YMAC on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to YMAC, such as that it provides more accurate information relating to the summary of key risks and impacts.

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<ul style="list-style-type: none"> <li>– The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> <li>– An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>– Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YMAC to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> <ul style="list-style-type: none"> <li>• On 6 March 2025, YMAC emailed Woodside notifying of a change of contact person details for correspondence to YMAC (SI Report, reference 27.5).</li> <li>• On 12 March 2025, Woodside emailed YMAC a reminder about the activity (SI Report, reference 27.6) which included: <ul style="list-style-type: none"> <li>– A reference to the activity update emailed to YMAC on 24 February 2025, which referenced changes to the original Consultation Information Sheet.</li> <li>– An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>– Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with YMAC to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>• On 12 March 2025, YMAC emailed Woodside acknowledging receipt of the previous email (SI Report, reference 27.7).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1 of this EP).	No additional measures or controls are required.
Summary Report: Consultation Complete		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with YMAC for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>• On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>• Woodside provided information to YMAC on 30 September 2024 when consultation commenced. Woodside provided:</li> </ul>		

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- A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.
- Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
- Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of YMAC’s interests and how the activity could impact those interests.
- A request for the consultation and information sheets to be distributed to members and individuals as required.
- An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to YMAC on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to YMAC on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to YMAC, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside’s mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with YMAC on 30 September 2024 and requested YMAC provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside’s methodology of a 30-day period for consultation.
- Woodside emailed an activity update to YMAC on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to YMAC, and requested YMAC provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to YMAC for 7 months, demonstrating a “reasonable period” of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside’s approach to consultation is appropriate and adapted because:

- Woodside sought direction on YMAC’s preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside’s initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside’s First Nations Engagement team. Woodside also provided contact details for NOPSEMA.

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- Offered for Woodside to speak with YMAC's members as well as the YMAC Board.
- Asked YMAC to advise how it would like Woodside to engage and whether YMAC required further information.
- Woodside offered to meet with YMAC on a number of occasions.
- Throughout the consultation period, Woodside and YMAC have had direct contact lines to each other during the period.
- Woodside invites YMAC to Monthly Community Luncheons.

**Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, YMAC has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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## 4.11 Self-identified First Nations groups

### 4.11.1 Ngarluma Yindjibarndi Foundation Ltd (NYFL)

NYFL was created to act as Trustee for the Trust under the *Northwest Shelf Agreement 1998* struck between the Ngarluma and Yindjibarndi registered native title claimants, the NWS JVs and Woodside, prior to the resolution of the Ngarluma and Yindjibarndi native title claim. Its purpose is to carry on the business of enterprise development, investment and social welfare. 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 as PBC to represent the communal interests of the Yindjibarndi people. Woodside consulted both NAC and Yindjibarndi as relevant persons in the course of preparing this EP.

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**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed NYFL advising of the proposed activity (Record of Consultation, reference 6.1.35), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that NYFL and its members may have within the EMBA.
  - A request for feedback by 1 November 2024.
  - A request for information on how NYFL would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NYFL to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for NYFL to provide information about the proposed activity to other individuals, as required.
  - Acknowledgement that discussions relating to Woodside's framework agreement has been ongoing and that these discussions will progress in parallel with consultation for the proposed activity's EP.
- On 3 October 2024, Woodside emailed NYFL an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 23 October 2024 (SI Report, reference 30.1).
- On 21 October 2024, Woodside emailed NYFL a reminder about the proposed activity (SI Report, reference 28.1). The email included:
  - A reference to the original consultation email for this EP sent to NYFL on 30 September 2024, which included Summary and Consultation Information Sheets.
  - A reminder that consultation for the preparation of this EP closes on 1 November 2024.
  - A request for information on how NYFL would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NYFL to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for NYFL to provide information about the proposed activity to other individuals, as required.
- On 21 October 2024, NYFL emailed Woodside (SI Report, reference 28.2). In the email NYFL stated:
  - (1) No formal consultation had taken place between NYFL and Woodside on this EP and others.
  - (1) Woodside's emails did not meet the standard of meaningful consultation.
  - (2) Woodside has provided NYFL with a draft consultation agreement but had declined to agree with NYFL's estimated costs to proceed with the agreement.
  - (2) NYFL would progress consultation on this EP and others once the consultation agreement had been formalised.
  - (1) A request for Woodside to note in any record provided to NOPSEMA that NYFL had not been consulted on this EP and others.

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- On 23 October 2024, Traditional Owner members from NYFL attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.3).
- On 4 November 2024, Woodside emailed NYFL in response to statements and claims made in NYFL's email on 21 October 2024 (SI Report, reference 28.3). The email included the following:
  - (2) Woodside's continued view that NYFL's cost estimates and rates are excessive, and the rates quoted by NYFL related to the North West Shelf agreements and were not consistent with reasonable rates for enabling and supporting consultation on this EP. Woodside also noted that the rates quoted by NYFL were for an initial review of a 7-page agreement.
  - (1) Woodside offered to meet to discuss the issue further and would be available to meet in-person in Ieramugadu (Roebourne), the week of 18 November 2024.
  - (1) Woodside confirmed that its use of email as one of the methods to engage in consultation correspondence mirrored what appears to be NYFL's primary approach of emailing consultation correspondence, and that Woodside is happy to discuss this EP and the various other EPs NYFL has listed in its recent correspondence.
  - (1) Woodside reiterated that the ongoing negotiation of a consultation framework agreement occurs in parallel to consultation for EPs.
  - (1) Woodside included a table identifying the status of each of the EPs referenced by NYFL, including this EP.
- Between 8 – 15 November 2024, NYFL and Woodside exchanged emails (SI Report, reference 28.4 – 28.6) about:
  - Woodside and NYFL arranging and confirming a meeting on 20 November 2024.
  - NYFL suggesting Woodside approve an interim solution for external (legal) and internal cost estimates.
  - Woodside requesting NYFL confirm with its legal provider that the cost estimates remain current for the consultation agreement, which NYFL advised the previous cost estimate remains current.
  - Woodside stating it would separately email NYFL about remaining EPs outline in the 21 October 2024 correspondence.
- On 20 November 2024, Woodside emailed NYFL thanking it for the meeting earlier that day. (2) Woodside confirmed during the meeting that it had agreed to the amount for legal fees, as set out in its original estimate provided to Woodside by email on 19 March 2024, with the qualification that that amount is for the finalisation of the draft consultation agreement to be agreed between Woodside and NYFL executive staff for presentation to the NYFL Board for its consideration (SI Report, reference 28.7).
- On 21 November 2024, NYFL advised Woodside about the passing of a Senior Yindjibarndi Elder and founding member of NYFL. The NYFL Board advised that grieving protocols were underway, and the community was commencing a period of mourning (SI Report, reference 28.8). As a sign of respect, Woodside would be limiting communication with NYFL.
- (1) On 5 December 2024, Woodside emailed NYFL in response to its correspondence of 21 October 2024 (SI report, reference 28.9). Matters relevant to this EP included:
  - Woodside had met with NYFL on 20 November 2024 to discuss progressing the Consultation Framework Agreement and had agreed a way forward.
  - Woodside did not agree with NYFL's assertion that consultation for this EP and others had not commenced.
  - Woodside confirmed that consultation for this EP was complete and was now closed.
  - Woodside had continued to consult and engage with NYFL via email as this appeared to be NYFL's preferred and primary method of consulting with Woodside on EPs.
  - Woodside was open to meet as part of its ongoing consultation with NYFL.

- Woodside reiterated that ongoing negotiation of a consultation framework agreement could and continued to occur in parallel to consultation for EPs, including this EP, and that a consultation framework agreement was not a prerequisite to consultation.
- Woodside attached a summary of the consultation that had occurred for the EP.
- Between 6 – 16 December 2024, Woodside and NYFL exchanged emails regarding matters relating to EP consultation, with NYFL stating it would progress consultation matters in due course (SI Report, reference 28.10 – 28.12).
- On 24 February 2025, Woodside emailed NYFL an activity update about the proposed activity (Record of Consultation, reference 6.3.29). The email included:
  - A reference to the original consultation email for this EP sent to NYFL on 30 September 2024.
  - That changes have been made to the original Consultation Information Sheet previously provided to NYFL, such as that it provides more accurate information relating to the summary of key risks and impacts.
  - The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NYFL to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 4 March 2025 Woodside emailed NYFL an invitation to share stories and receives updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 5 March 2025 (SI Report, reference 30.5).
- On 5 March 2025, Traditional Owner members from NYFL attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside requested feedback from all attendees about EPs and provided information about the consultation process (SI Report, reference 30.6).
- On 13 March 2025, Woodside emailed NYFL a reminder about the activity (SI Report, reference 28.13) which included:
  - A reference to the activity update emailed to NYFL on 24 February 2025, which referenced changes to the original Consultation Information Sheet.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with NYFL to understand how it would like information to be managed.
  - Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- On 24 March 2025, Woodside emailed NYFL an invitation to share stories and receive updates from Woodside at its Monthly Community Luncheon for Traditional Owners to be held in Roebourne on 26 March 2025 (SI Report, reference 30.8).
- On 26 March 2025, Traditional Owner members from NYFL attended Woodside's Monthly Community Luncheon for Traditional Owners held in Roebourne. During the lunch Woodside discussed the process for writing EPs and how it communicates feedback from groups to NOPSEMA (SI Report, reference 30.9).
- **(2)** On 7 April 2025, NYFL emailed Woodside, in response to another EP, advising that NYFL will be meeting with its legal advisers regarding the consultation agreement and will send the agreement to Woodside in due course (SI Report, reference, 28.14).

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<ul style="list-style-type: none"> <li>• (2) On 10 April 2025, NYFL emailed Woodside a draft consultation agreement, previously provided by Woodside which incorporated NYFL changes (SI Report, reference 28.15).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<p>(1)</p> <p>NYFL has stated no formal consultation had taken place between NYFL and Woodside on this EP. NYFL would progress consultation on this EP once the draft consultation agreement was finalised.</p>	<p>(1)</p> <p><b>Woodside assessment:</b> Woodside rejects NYFL's assertion that has not been consulted on this EP. Woodside began consulting NYFL in September 2024 and has provided sufficient information, a reasonable period of time, and reasonable opportunity or NYFL to provide feedback. Woodside has clearly communicated to NYFL that consultation for this EP and others has occurred in parallel to negotiations about the draft consultation agreement. Woodside notes that the consultation agreement is not required to undertake and/or consult with NYFL on EPs.</p> <p><b>Woodside response:</b> The information provided by Woodside meets the requirements of regulation 25 of the Environment Regulations for the reasons set out above.</p>	<p>(1)</p> <p>Not required.</p>
<p>(2)</p> <p>NYFL has acknowledged it supports an agreement to enable a process of consultation.</p>	<p>(2)</p> <p><b>Woodside assessment:</b> Separate from 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 in the course of preparing this EP. Sufficient information to allow informed assessment has already been provided by other means. Woodside has an existing engagement framework in place with NYFL which enables regular (quarterly) communication about Woodside activities.</p> <p><b>Woodside response:</b> Woodside sent a 7-page draft consultation framework to NYFL in March 2024 for its consideration. In November 2024, Woodside met with NYFL to discuss a number of matters relating to the</p>	<p>(2)</p> <p>Not required.</p>

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	draft consultation agreement, with NYFL agreeing to provide Woodside with feedback on 7 April 2025, NYFL notified Woodside that it would be sending the draft agreement in due course.	
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 7.7.1 of this EP).	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with NYFL for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to NYFL on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of NYFL's interests and how the activity could impact those interests.</li> <li>A request for the consultation and information sheets to be distributed to members and individuals as required.</li> <li>An offer to provide more specific information, maps and images if required.</li> </ul> </li> <li>Woodside provided updated information to NYFL on 24 February 2025 which included: <ul style="list-style-type: none"> <li>A reference to the original consultation email for this EP sent to NYFL on 30 September 2024.</li> <li>An updated Consultation Information Sheet highlighting changes made to the original version previously provided to NYFL, which: <ul style="list-style-type: none"> <li>provides more accurate information relating to the summary of key risks and impacts.</li> </ul> </li> </ul> </li> </ul>		

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- confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

- An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.

- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with NYFL on 30 September 2024 and requested NYFL provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to NYFL on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to NYFL, and requested NYFL provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to NYFL for 7 months, demonstrating a "reasonable period" of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on NYFL's preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with NYFL's members as well as the NYFL Board.
  - Asked NYFL to advise how it would like Woodside to engage and whether NYFL required further information.
- Woodside offered to meet with NYFL on a number of occasions.
- Throughout the consultation period, Woodside and NYFL have exchanged emails and have otherwise had direct contact lines to each other during the period.
- Woodside invites NYFL to Monthly Community Luncheons.

#### **Outcomes of Consultation**

The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- During the past 7 months, NYFL has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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## 4.12 Other First Nations groups

### 4.12.1 Save Our Songlines

#### Summary of information provided and record of consultation for this EP:

- On 30 September 2024, Woodside emailed SOS and/or [Individual 1] (via legal representative [Individual 16]) advising of the proposed activity (Record of Consultation, reference 6.1.36), which included the activity's Summary Information Sheet and Consultation Information Sheet. The email included:
  - An overview of the proposed activity.
  - Links to the NOPSEMA *Consultation Guidelines*, *Consultation Brochure*, and *Draft Policy for Managing Gender-Restricted Information*, and contact details.
  - Information on the interests that SOS and its members may have within the EMBA.
  - Details of cultural values previously provided by SOS and/or [Individual 1] to Woodside during consultation for other activities that may be relevant to the proposed activity. These cultural and environmental values include cultural features associated with:
    - (1) Whales, as well as marine mammals, seagrass distribution, and the meeting of freshwater and saltwater was demonstrated.
    - (2) Songlines, dreaming and energy lines.
  - (1, 2) A request that SOS and/or [Individual 1] confirm if there were any changes or additional information regarding cultural values that Woodside should consider in the preparation for this EP.
  - A request for feedback by 1 November 2024.
  - Information on how SOS and/or [Individual 1] would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.
  - Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with SOS and/or [Individual 1] to understand how it would like information to be managed.
  - That feedback can continue to be provided to Woodside during the life of an EP, including after EP consultation has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
  - A request for SOS to provide information about the proposed activity to other individuals, as required.
- On 7 October 2024, [Individual 16] emailed Woodside clarifying that correspondence regarding Scarborough EPs are to be emailed directly to the legal representative and/or matters relating directly to [Individual 16], with all other matters and EP correspondence emailed directly to [Individual 1] (SI Report, reference 29.1).
- On 21 October 2024, Woodside emailed SOS and/or [Individual 1] a reminder about the proposed activity (SI Report, reference 29.2). The email included:
  - A reference to the original consultation email for this EP sent to SOS and/or [Individual 1] on 27 September 2024, which included Summary and Consultation Information Sheets and Attachment A which listed cultural values previously provided by SOS and/or [Individual 1] to Woodside.
  - A reminder that consultation for the preparation of this EP closes on 30 October 2024.
  - An update on the activity's well location co-ordinates and water depths.
  - A request for information on how SOS and/or [Individual 1] would like to engage with Woodside about the proposed activity, including the opportunity to meet face to face.

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- Woodside’s commitment to managing gender-restricted or other culturally sensitive information and working with SOS and/or [Individual 1] to understand how it would like information to be managed.
- Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.
- A request for SOS and/or [Individual 1] to provide information about the proposed activity to other individuals, as required.
- On 30 October 2024, SOS and/or [individual 1] via their legal representative, emailed Woodside about another activity informing that SOS and/or [Individual 1] had requested consultation feedback be provided to Woodside (SI Report, reference 29.3). In the letter, SOS and/or [Individual 1], stated that the comments were based on the information Woodside had provided about another activity, regarding cultural values Woodside deems relevant to this activity which included:
  - (3) SOS and/or [individual 1] was a Mardathoonera Lore woman, Elder and Traditional Custodian of Murujuga, and their connection to Murujuga had been stated in previous comments and in evidence before Federal Court and that their cultural responsibilities had been provided previously, however some were culturally sensitive and could not be shared publicly.
  - (4) That potential impacts on cultural values were not identified or mentioned by Woodside, and specifically, questioned if the cultural values outlined had been properly considered and mitigated including potential impacts on:
    - (1) whales, as well as marine mammals, seagrass, and the meeting of freshwater and saltwater; and
    - (2) Songlines, Dreaming and Energy Lines.
  - (2) That cultural and environmental values are one, and that the Dreaming stories and Songlines can be, and are being, disrupted.
- On 20 December 2024, Woodside emailed SOS and/or [Individual 1] responding to its 30 October 2024 correspondence (SI Report, reference 29.4). Woodside advised SOS and/or [Individual 1] that:
  - Woodside continues to receive, assess and respond to feedback and comments from relevant persons throughout the life of the EP. Should feedback be received following the acceptance of an EP, that Woodside will apply its Management of Change and Review process as appropriate.
  - (3) Woodside acknowledged that [Individual 1] had traditional connections to Murujuga and that Woodside maintained, as confirmed in previous correspondence with [Individual 1], that Woodside had observed consultation protocols relating to confidentiality of culturally sensitive information shared by [Individual 1], and that:
    - [Individual 1] was deciding not to share culturally sensitive information and was withholding it from consultation, and as previously advised the result may be that Woodside may not have complete information about how their functions, interests and activities may be affected.
    - That Woodside had previously raised this during consultation with [Individual 1] and confirmed it was an issue with implications addressed in a previous court case.
    - If [Individual 1] did not feel comfortable sharing information with Woodside, alternatives were available including the provision of information direct to NOPSEMA and providing a link to NOPSEMA’s policy, ‘Managing gender-restricted information’.
  - (4) Woodside acknowledged it had previously consulted extensively with [Individual 1] and used feedback to inform EPs, confirming [Individual 1] had raised:
    - (1, 2) Cultural features associated with whales, as well as marine mammals, seagrass, Songlines, dreaming and Energy Lines.
    - (1) The meeting of freshwater and saltwater was demonstrated.
  - (2) Woodside acknowledged and confirmed that culture and environment are one, and there was no separating the concepts, and confirmed that it had previously consulted with SOS and/or [Individual 1] on environmental matters relating to other EPs.

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<ul style="list-style-type: none"> <li>– (2) Woodside confirmed it had assessed and considered the information raised by SOS and/or [Individual 1] regarding Songlines and disruption to Songlines, which had been assessed in EPs and included where relevant. Woodside confirmed that risks or impacts to Songlines from this activity were anticipated to be negligible.</li> <li>• On 24 February 2025, Woodside emailed SOS and/or [Individual 1] an activity update about the proposed activity (Record of Consultation, reference 6.3.30). The email included: <ul style="list-style-type: none"> <li>– A reference to the original consultation email for this EP sent to SOS and/or [Individual 1] on 30 September 2024.</li> <li>– That changes have been made to the original Consultation Information Sheet previously provided to SOS and/or [Individual 1], such as that it provides more accurate information relating to the summary of key risks and impacts.</li> <li>– The updated information confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.</li> <li>– An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>– Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with SOS and/or [Individual 1] to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> <li>• On 13 March 2025, Woodside emailed SOS and/or [Individual 1] a reminder about the activity (SI Report, reference 29.5) which included: <ul style="list-style-type: none"> <li>– A reference to the activity update emailed to SOS and/or [Individual 1] on 24 February 2025, which referenced changes to the original Consultation Information Sheet.</li> <li>– An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.</li> <li>– Woodside's commitment to managing gender-restricted or other culturally sensitive information, and working with SOS and/or [Individual 1] to understand how it would like information to be managed.</li> <li>– Advice that feedback can continue to be provided to Woodside during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<p>(1)</p> <p>SOS and/or [Individual 1] has an interest in marine mammals, including the migratory patterns of whales, dugongs and turtles, seagrass distribution, and the meeting of freshwater and saltwater was demonstrated.</p>	<p>(1)</p> <p><b>Woodside assessment:</b> Woodside notes that some marine species hold spiritual and cultural importance to SOS and/or [Individual 1]. Woodside has considered SOS's and/or [Individual 1] topics of interest and shared relevant information in relation to a previous EP, with SoS and/or [Individual 1] relating to these interests, including controls put in place to manage risks and impacts to them.</p>	<p>(1)</p> <p>Woodside has updated Section 4.9: Cultural values and heritage, to record these cultural interests. These are assessed in Section 6 with appropriate controls implemented.</p> <p>Assessment of potential impacts to cultural values are described in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria of the EP.</p>

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	<b>Woodside response:</b> During consultation on a previous EP, Woodside discussed controls put in place to manage impacts and risks relating to their spiritual and cultural connection to the environment. Woodside has implemented controls to reduce potential risks and impacts to ecological and cultural values to ALARP and to an acceptable level.	
<b>(2)</b> SOS and/or [Individual 1] noted there were cultural features associated with Songlines, dreaming and Energy Lines.	<b>(2)</b> <b>Woodside assessment:</b> Woodside understands that Songlines and Energy Lines to hold personal spiritual and cultural value individually (rather than communally) to SoS and/or [Individual 1]. Woodside has consistently sought to understand the nature of these values to ensure impacts to these values can be minimised. SOS and/or [Individual 1] has declined to provide further information on these values. <b>Woodside response:</b> In any event, Woodside has sought to include controls that seek to reduce risks and impacts to ALARP and acceptable levels.	<b>(2)</b> Woodside has considered SOS's and/or [Individual 1] feedback and updated Section 4.9 to record topics of interest and cultural values, including Songlines and Energy Lines. These are assessed in Sections 6.7.3, 6.7.4, 6.8.2, 6.8.6 under cultural heritage with appropriate controls implemented. At this stage, Woodside has not been provided with specific information on these potential values to enable a more fulsome assessment.
<b>(3)</b> SOS and/or [Individual 1] stated that as a Mardathoonera Lore woman, Elder and Traditional Custodian of Murujuga, their connection and cultural responsibilities to Murujuga has previously been provided, however some were culturally sensitive and could not be shared publicly.	<b>(3)</b> <b>Woodside assessment:</b> Woodside notes SOS and/or [Individual 1]'s connection to Murujuga and concern about the sharing of culturally sensitive information. <b>Woodside response:</b> As has been confirmed in previous consultation correspondence and engagements, Woodside maintains that it has observed the consultation protocols between SOS and/or [Individual 1] and Woodside, relating to confidentiality of culturally sensitive information shared by SOS and/or [Individual 1]. Woodside reiterates that if SOS and/or [Individual 1] are not comfortable with sharing information with Woodside, alternatives are available via NOPSEMA.	<b>(3)</b> Not required.
<b>(4)</b> SOS and/or [Individual 1] stated that the potential impacts on cultural values were not identified or	<b>(4)</b> <b>Woodside assessment:</b> Woodside disputes SOS and/or [Individual 1] assertion that it has not assessed	<b>(4)</b> Woodside has assessed and recorded cultural and environmental values in this EP in Section 4.9: Cultural

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mentioned in the Consultation Information Sheet, and specifically, questioned if the cultural values outlined by Woodside had been properly considered and mitigated in the draft EP including potential impacts on: <ul style="list-style-type: none"> <li>(1) whales, as well as marine mammals, seagrass, and the meeting of freshwater and saltwater; and</li> <li>(2) Songlines, Dreaming and Energy Lines.</li> </ul>	potential impacts on marine species including whales, and Songlines. Woodside notes SOS and/or [Individual 1] have previously been consulted extensively with [Individual 1] and used feedback to inform EPs, including this one.  <b>Woodside response:</b> Woodside has used previous feedback on other EPs, as well as feedback on this EP, to inform Woodside on the cultural features and heritage values of the environment, and to consider and assess risks and mitigations to cultural features and heritage values.	values and heritage and Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
Woodside has addressed objections and claims, as noted above.	Woodside has assessed the merits of any objection or claim (if any) about the adverse impact of the activity to which the EP relates as required under Regulation 24.  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 7.2.6).	Based on the engagement to date, no additional measures or controls are required.
<b>Summary Report: Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under Regulation 25 of the Environmental Regulations and consultation with SOS and/or [Individual 1] for the purpose of Regulation 25 is complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.5 of the EP. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Sufficient information has been provided because:</p> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside made the Consultation Information Sheet available on the Woodside website.</li> <li>Woodside provided information to SOS and/or [Individual 1] on 30 September 2024 when consultation commenced. Woodside provided: <ul style="list-style-type: none"> <li>A Summary Information Sheet developed specifically for First Nations groups and reviewed by a member of the First Nations Engagement team. This sheet included an overview of the proposed activity, the location of the activity, the timing of the activity, the potential risks and impacts of the activity, diagrams and details about how to provide feedback.</li> <li>Links to the NOPSEMA <i>Consultation Guidelines</i>, <i>Consultation Brochure</i>, and <i>Draft Policy for Managing Gender-Restricted Information</i>, and contact details.</li> <li>Confirmation of the purpose of consultation, what was being sought by Woodside through consultation including understanding the nature of SOS's and/or [Individual 1] interests and how the activity could impact those interests.</li> <li>A request for the consultation and information sheets to be distributed to members and individuals as required.</li> </ul> </li> </ul>		

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- An offer to provide more specific information, maps and images if required.
- Woodside provided updated information to SOS on 24 February 2025 which included:
  - A reference to the original consultation email for this EP sent to SOS and/or [Individual 1] on 30 September 2024.
  - An updated Consultation Information Sheet highlighting changes made to the original version previously provided to SOS, which:
    - provides more accurate information relating to the summary of key risks and impacts.
    - confirms the nature of the activity remains the same and does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.
  - An invitation to provide further feedback by 26 March 2025, for the purpose of preparation for this EP.
- Woodside provided contact information for Woodside and NOPSEMA.

#### **Reasonable Period**

A reasonable period for consultation in the preparation of this EP has been provided because:

- Woodside commenced consultation on this EP with SOS and/or [Individual 1] on 30 September 2024 and requested SOS and/or [Individual 1] provide feedback by 1 November 2024 for the purposes of preparation of this EP in line with Woodside's methodology of a 30-day period for consultation.
- Woodside emailed an activity update to SOS on the 24 February 2025 to inform of changes to the original Consultation Information Sheet previously provided to SOS, and requested SOS provide any further feedback by 26 March 2025 for the purposes of preparation of this EP.
- Woodside has addressed and responded to SOS and/or [Individual 1] for 7 months, demonstrating a "reasonable period" of consultation.

#### **Reasonable Opportunity**

A reasonable opportunity to provide feedback has been provided and Woodside's approach to consultation is appropriate and adapted because:

- Woodside sought direction on SOS's and/or [Individual 1] preferred method of consultation and has consulted in a way that Woodside understands is appropriate for First Nations groups.
- Woodside has made information on this EP publicly available for 7 months. This has included publishing advertisements in national, state and local newspapers including Indigenous newspapers, the Koori Mail (9 October 2024) and National Indigenous Times (29 October 2024) advising of the proposed activities and requesting comments or feedback.
- Woodside's initial email about this EP on 30 September 2024:
  - Included a general email address and telephone number for Woodside, as well as a direct email and telephone number for a dedicated focal person from Woodside's First Nations Engagement team. Woodside also provided contact details for NOPSEMA.
  - Offered for Woodside to speak with and/or [Individual 1] or SOS's members.
  - Asked SOS and/or [Individual 1] to advise how it would like Woodside to engage and whether SOS and/or [Individual 1] required further information.
  - Woodside offered to meet with SOS and/or [Individual 1].
  - Throughout the consultation period, Woodside and SOS and/or [Individual 1] have exchanged emails and had direct contact lines to each other during the period.

#### **Outcomes of Consultation**

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The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- SOS and/or [Individual 1] has advised Woodside that:
  - They have an interest in marine mammals, including the migratory patterns of whales, dugongs and turtles, seagrass distribution, and the meeting of freshwater and saltwater was demonstrated. Woodside has updated Section 4.9.1: Cultural values and heritage, to record these cultural interests. These are assessed in Section 6 with appropriate controls implemented.
  - Assessment of potential impacts to cultural values are described in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria of the EP.
  - There were cultural features associated with Songlines, dreaming and energy lines. Woodside has updated Section 4.9.1: Cultural values and heritage, to record topics of interest and cultural values, including Songlines and energy lines. These are assessed in Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria, under Songlines with appropriate controls implemented.
  - They are a Mardathoonera Lore woman, Elder and Traditional Custodian of Murujuga, their connection and cultural responsibilities to Murujuga has previously been provided, however some were culturally sensitive and could not be shared publicly. Woodside maintains that it has observed the consultation protocols between SOS and/or [Individual 1] and Woodside, relating to confidentiality of culturally sensitive information shared by SOS and/or [Individual 1].
  - The potential impacts on cultural values were not identified or mentioned in the Consultation Information Sheet. Woodside has assessed and recorded cultural and environmental values in this EP in Section 4.9.1: Cultural values and heritage and Section 6: Environmental impact and risk assessment, performance outcomes, standards and measurements criteria.
- During the past 7 months, SOS and/or [Individual 1] has not raised objections or claims about the adverse impact of the activity to which this EP relates.
- Woodside engages in ongoing consultation once an EP has been submitted for assessment as well as throughout the life of an EP. Should feedback be received after the EP has been accepted (including relevant new information relating to cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 7.7.1 of this EP).

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## 4.13 Historical heritage groups or organisations

### 4.13.1 Western Australian Museum (WAM)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed WAM advising of the proposed activity (Record of Consultation, reference 6.1.37), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.11).</li> <li>On 24 February 2025, Woodside emailed WAM an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.31).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with WAM for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given WAM sufficient information to allow WAM to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to WAM on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure <i>'Consultation on offshore petroleum environment plans'</i>.</li> </ul> </li> </ul>		

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- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed WAM a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to WAM advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed WAM 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed WAM a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with WAM is appropriate and adapted to the nature of interests of WAM:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Recfishwest an activity update, offering Recfishwest another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding WAM of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as WAM did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on WAM's functions, interests or activities.

## 4.14 Local government and elected parliamentary representatives, community groups or organisations

### 4.14.1 Shire of Ashburton

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed the Shire of Ashburton advising of the proposed activity (Record of Consultation, reference 6.1.38), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.12).</li> <li>On 24 February 2025, Woodside emailed the Shire of Ashburton an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.32).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with the Shire of Ashburton for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given the Shire of Ashburton sufficient information to allow the Shire of Ashburton to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to the Shire of Ashburton on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure <i>'Consultation on offshore petroleum environment plans'</i>.</li> </ul> </li> </ul>		

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- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed the Shire of Ashburton a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to the Shire of Ashburton advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Shire of Ashburton 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed the Shire of Ashburton a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with the Shire of Ashburton is appropriate and adapted to the nature of interests of the Shire of Ashburton:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Shire of Ashburton an activity update, offering Shire of Ashburton another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding Shire of Ashburton of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as the Shire of Ashburton did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on the Shire of Ashburton's functions, interests or activities.

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#### 4.14.2 Onslow Chamber of Commerce and Industry (Onslow CCI)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Onslow CCI advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed Onslow CCI an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Onslow CCI for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given Onslow CCI sufficient information to allow Onslow CCI to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Onslow CCI on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul>		

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#### Reasonable Period

Woodside allowed Onslow CCI a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to Onslow CCI advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed Onslow CCI 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed Onslow CCI a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with Onslow CCI is appropriate and adapted to the nature of interests of Onslow CCI:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent Onslow CCI an activity update, offering Onslow CCI another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding Onslow CCI of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as Onslow CCI did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Onslow CCI's functions, interests or activities.

### 4.14.3 Exmouth Community Liaison Group (Exmouth CLG)

#### Summary of information provided and record of consultation for this EP:

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<ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Exmouth CLG advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 12 November 2024, Woodside presented to the Exmouth CLG (SI report, reference 33.1) on Woodside activities, including this EP. Woodside presented a slide listing EPs on which the CLG members had recently been consulted and EPs currently under consultation. <ul style="list-style-type: none"> <li>(1) A question was raised on the Angel subsea removal. An individual sought clarity on the reference to "where practicable" and queried how much infrastructure would be recycled.</li> <li>(1) Woodside responded that material would be recycled where practicable to recycle and that Woodside had a recycling /reuse target of 95%.</li> <li>13 individuals attended the meeting representing: <ul style="list-style-type: none"> <li>Shire of Exmouth</li> <li>Gascoyne Development Commission</li> <li>Exmouth Chamber of Commerce and Industry</li> <li>Ningaloo Coast World Heritage Advisory Council / NOPSEMA Community and Environment Reference Group</li> <li>West Australian Country Health Service</li> <li>Bhagwan Marine</li> <li>PHI Helicopters</li> <li>Exmouth Volunteer Marine Rescue</li> <li>CSIRO</li> <li>Santos.</li> </ul> </li> </ul> </li> <li>On 2 December 2024, Woodside's presentation was emailed to the CLG members, regardless of their attendance at the meeting.</li> <li>On 24 February 2025, Woodside emailed Exmouth CLG an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
<p>(1)</p> <p>An individual sought clarity on the reference to "where practicable" and queried how much infrastructure would be recycled.</p>	<p>(1)</p> <p><b>Woodside assessment:</b> Woodside noted the individual's interest in the amount of infrastructure that would be recycled.</p> <p><b>Woodside response:</b> Woodside advised that it had a target for recycling/reuse of 95% for this activity.</p>	<p>(1)</p> <p>Woodside's target for recycling is outlined in Section 6.8.5 and Section 7.2.5 of the EP.</p>

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While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report - Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with Exmouth CLG for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given Exmouth CLG sufficient information to allow Exmouth CLG to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to Exmouth CLG on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the GHG Activities, and proposed mitigation and measurement measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the Community.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with regulation 25(4) of the Environment Regulations).</li> </ul> </li> </ul> <p><b>Reasonable Period</b></p> <p>Woodside allowed Exmouth CLG a reasonable period for consultation in the preparation of this EP because:</p> <ul style="list-style-type: none"> <li>A consultation period was stated in the initial correspondence to Exmouth CLG advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.</li> <li>Woodside's methodology allows a 30-day consultation period. Woodside allowed Exmouth CLG 60 days for consultation, which included an additional period following the activity update.</li> </ul>		

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- It has been 7 months since consultation commenced.
- In this context, Woodside allowed Exmouth CLG a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

Woodside allowed Exmouth CLG a reasonable opportunity for consultation in the preparation of this EP because:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at, 3 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- On 12 October 2024, Woodside presented to the Exmouth CLG on Woodside activities, including this EP.
- In February 2025 Woodside sent Exmouth CLG an activity update, offering Exmouth CLG another opportunity to provide feedback.
- Woodside considers a reasonable opportunity was provided to Exmouth CLG as evidenced by its response on 12 November 2025.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- Exmouth CLG provided feedback but no objections or claims. In line with the intended outcome of consultation as set out in Section 5.2 and regulations 24 and 34(g), Woodside has:
  - Responded to feedback from Exmouth CLG and assessed the merits of any objection or claim about the adverse impact of activities to which this EP relates.
  - Made no changes or inclusions to the EP as a result of consultation with Exmouth CLG because appropriate measures are already included in the EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on Exmouth CLG's functions, interests or activities.

## 4.15 Other non-government groups or organisations (NGOs) or individuals

### 4.15.1 Friends of the Earth Australia (FOEA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed FOEA advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed FOEA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with FOEA for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given FOEA sufficient information to allow FOEA to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to FOEA on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included:</li> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> </ul>		

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- A link to NOPSEMA's brochure 'Consultation on offshore petroleum environment plans'.
- Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).

#### Reasonable Period

Woodside allowed FOEA a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to FOEA advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed FOEA 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed FOEA a reasonable period for consultation in preparation of the EP.

#### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with FOEA is appropriate and adapted to the nature of interests of FOEA:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent FOEA an activity update, offering FOEA another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding FOEA of the opportunity to provide feedback.

#### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as FOEA did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on FOEA's functions, interests or activities.

#### 4.15.2 The Wilderness Society (TWS)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed TWS advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed TWS an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and considers consultation with TWS for the purpose of regulation 25 complete. Sufficient information, a reasonable period and a reasonable opportunity have been provided, as described in Section 5.4 of the EP and further summarised in the Consultation Approach above. Specifically:</p> <p><b>Sufficient Information</b></p> <p>Woodside has given TWS sufficient information to allow TWS to make an informed assessment of the possible consequences of the activity on its functions, interests or activities because:</p> <ul style="list-style-type: none"> <li>The Consultation Information Sheet for this EP has been publicly available on the Woodside website since September 2024. Woodside gave this information to TWS on 30 September 2024, marking the commencement of consultation on this EP. The Consultation Information Sheet included: <ul style="list-style-type: none"> <li>The purpose of consultation and set out what was being sought through consultation.</li> <li>A summary of the activity description, location of the activity, timing of the activity, receiving environment, impacts and risks associated with the PAP, and proposed mitigation and management measures.</li> <li>A timeframe for consultation and the provision of feedback.</li> <li>A link to NOPSEMA's brochure '<i>Consultation on offshore petroleum environment plans</i>'.</li> <li>Advice that relevant persons can request that particular information provided during consultation not be published (to align with 25(4) of the Environment Regulations).</li> </ul> </li> </ul>		

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### Reasonable Period

Woodside allowed TWS a reasonable period for consultation in the preparation of this EP because:

- A consultation period was stated in the initial correspondence to TWS advising of consultation as well as when consultation closed for the purposes of the preparation of the EP. This enabled Woodside to assess feedback before EP submission.
- Woodside's methodology allows a 30-day consultation period. Woodside allowed TWS 60 days for consultation, which included an additional period following the activity update.
- Consultation for this EP commenced 7 months ago.
- In this context, Woodside allowed TWS a reasonable period for consultation in preparation of the EP.

### Reasonable Opportunity

A reasonable opportunity to provide feedback has been provided because Woodside's approach to consultation with TWS is appropriate and adapted to the nature of interests of TWS:

- Woodside published advertisements in 7 national, state, and relevant local newspapers (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- Woodside ran 1 targeted social media campaign (see Consultation Activities). This allowed for broad awareness of the activity under the EP and also of consultation.
- From 12 October 2024, Woodside held, or hosted information stalls at 5 community events in Dampier and Exmouth to raise awareness of the EP and provide another opportunity for feedback. These events were promoted in local newspapers and on social media.
- In February 2025 Woodside sent TWS an activity update, offering TWS another opportunity to provide feedback.
- In the absence of feedback, Woodside sent a follow-up consultation email on 17 October 2024 and 14 March 2025, reminding TWS of the opportunity to provide feedback.

### Outcomes of Consultation

Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. The measures (if any) that Woodside has adopted or proposes to adopt because of the consultation are appropriate because:

- No additional measures were considered as a result of consultation as TWS did not provide feedback for this EP.
- Woodside will continue to accept and assess feedback throughout the life of the EP and apply its Management of Change and Revision process when applicable.
- The measures and controls described in this EP address the potential impact from the proposed activity on TWS' functions, interests or activities.

## 5. TABLE 3: ENGAGEMENT REPORT WITH PERSONS OR ORGANISATIONS ASSESSED AS NOT RELEVANT

The black numbering (N) in the 'Summary of information provided and record of consultation for this EP' in Table 3 denotes an item raised by a stakeholder. The green numbering (N) in this section denotes Woodside's response to that item.

### 5.1 Commonwealth and WA State Government Departments or Agencies – Marine

#### 5.1.1 Australian Communications and Media Authority (ACMA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed ACMA advising of the proposed activity (Record of Consultation, reference 6.1.8), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>(1) On 1 October 2024, ACMA responded to Woodside (SI Report, reference 2.1) to confirm that they had no comments on the planned activities.</li> <li>(1) On 31 December 2024, Woodside responded to ACMA (SI Report, reference 2.2) noting that it had no comments on the planned activities.</li> <li>On 24 February 2025, Woodside emailed ACMA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.3).</li> <li>On 25 February 2025, ACMA responded to Woodside (SI Report, reference 2.3) to: <ul style="list-style-type: none"> <li>(1) confirm that they had no comments on the planned activities.</li> <li>(2) Additionally, ACMA reiterated to Woodside that it should contact any owners of submarine cables in the vicinity of the proposed activities.</li> </ul> </li> <li>On 14 March 2025, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> <li>(1) On 18 March 2025, ACMA responded to Woodside (SI Report, reference 2.4), confirming that they have no additional comments beyond those provided on 25 February 2025 and that ongoing consultation with ACMA is not required for this EP.</li> <li>(1)(2) On 7 April 2025, Woodside thanked ACMA for their feedback and acknowledged they have no further comments on the EP (SI Report, reference 2.5).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) No comments on the planned activities	(1) <b>Woodside assessment:</b> Woodside noted that ACMA had no issues with EP activities. <b>Woodside response:</b> Woodside acknowledged that ACMA had no issues with EP activities.	(1) Not required.

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<p><b>(2)</b> Contact owners of submarine cables in the vicinity</p>	<p><b>(2)</b> <b>Woodside assessment:</b> Submarine cables are not located in the vicinity of the planned activity; Woodside has assessed Telstra and Vocus as non-relevant persons who do not require consultation. <b>Woodside response:</b> Woodside noted ACMA's feedback.</p>	<p><b>(2)</b> Section 4</p>
<p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).</p>	<p>No additional controls or measures are required.</p>
<p><b>Summary Report – Consultation Complete</b></p>		
<p>While ACMA is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for ACMA to provide feedback during the consultation process.</p>		

### 5.1.2 Pilbara Ports Authority (PPA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed PPA advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed PPA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While PPA is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for PPA to provide feedback during the consultation process.		

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## 5.2 Commonwealth and WA State Government Departments or Agencies – Environment

### 5.2.1 Ningaloo Coast World Heritage Advisory Committee (NCWHAC)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed NCWHAC advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed NCWHAC an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While NCWHAC is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for NCWHAC to provide feedback during the consultation process.		

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### 5.3 Commonwealth commercial fisheries and peak representative bodies

#### 5.3.1 Australian Southern Bluefin Tuna Industry Association (ASBTIA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed ASBTIA advising of the proposed activity (Record of Consultation, reference 6.1.9), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 24 February 2025, Woodside emailed ASBTIA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.4).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.1).</li> <li>On 27 March 2025, ASBTIA emailed Woodside (SI Report, reference 8.1) and noted: <ul style="list-style-type: none"> <li>(1) ASBTIA remained a relevant person regarding Woodside activities</li> <li>(2) The potential for impacts to the species migratory patterns due to seismic or other activity was not determined</li> </ul> </li> <li>On 2 April 2025, Woodside replied (SI Report, reference 8.2) and advised <ul style="list-style-type: none"> <li>(1) Acknowledged ASBTIA feedback.</li> <li>(2) Short- or long-term behavioural impacts on southern bluefin tuna prey species was expected to be temporary avoidance of the area which was unlikely to impact migratory patterns.</li> <li>(2) There will be no seismic activity associated with this EP.</li> </ul> </li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) ASBTIA remains a relevant person regarding Woodside activities	(1) <b>Woodside assessment:</b> Woodside notes ASBTIA commitment as a relevant person <b>Woodside response:</b> Woodside acknowledged ASBTIA feedback	(1) Not required
(2) ASBTIA raised concerned that the potential for impacts to the species migratory patterns due to the seismic or other activity is not determined	(2) <b>Woodside assessment:</b> Woodside has assessed the impact to behavioural patterns of larger pelagic fish due to the decommissioning discharges as temporary and of no lasting effect and confirmed there is no seismic activity planned.	(2) The impact to marine species from the planned decommissioning activities is outlined in Section 6.7.3 and Section 6.7.7 of the EP

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	<b>Woodside response:</b> Woodside advised ASBTIA of the expected behavioural impacts on the Southern Bluefin Tuna migratory patterns as negligible and confirmed there is no seismic activity planned.	
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		
While ASBTIA is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for ASBTIA to provide feedback during the consultation process.		

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## 5.4 Local government and elected parliamentary representatives, community groups or organisations

### 5.4.1 Shire of Exmouth

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed the Shire advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed the Shire an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While the Shire is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for the Shire to provide feedback during the consultation process.		

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### 5.4.2 Exmouth Chamber of Commerce and Industry (Exmouth CCI)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Exmouth CCI advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed Exmouth CCI an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While Exmouth CCI is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Exmouth CCI to provide feedback during the consultation process.		

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### 5.4.3 City of Karratha

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed the City of Karratha advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed the City of Karratha an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> <li>(1) On 20 March 2025, the City of Karratha responded to Woodside (SI Report, reference 31.1) to confirm they were satisfied that risks were appropriately managed and therefore had no concerns regarding the proposed activities.</li> <li>(1) On 27 March 2025, Woodside responded to the City of Karratha (SI Report, reference 31.2) to thank them for confirming they were satisfied that risks were appropriately managed and had no concerns regarding the proposed activities.</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) No concerns regarding the proposed activities.	(1) <b>Woodside assessment:</b> Woodside accepts that City of Karratha identified no issues with proposed EP activities. <b>Woodside response:</b> Woodside noted that City of Karratha had no issues with EP activities.	(1) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24. 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 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 7.7.1).	No additional controls or measures are required.

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### Summary Report – Consultation Complete

While the City of Karratha is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for the City of Karratha to provide feedback during the consultation process.

#### 5.4.4 Karratha Community Liaison Group (Karratha CLG)

##### Summary of information provided and record of consultation for this EP:

- On 20 September 2024, Woodside presented to the Karratha CLG on EP consultation requirements and provided an update on upcoming Woodside activities, including this EP (SI report, reference 34.1).
  - No feedback was provided on this EP.
  - Woodside also presented on how it consults relevant persons in the course of preparing EPs and provided information on relevant persons and EMBA's. The slides included a QR code and a URL to the Consultation Activities page of the Woodside website. Copies of the latest edition of *Let's Talk* were provided in hard copy and sent electronically with the minutes and pack.
  - 8 CLG members attended the meeting representing:
    - City of Karratha – staff representatives
    - Dampier Community Association
    - Pilbara Development Commission
    - Department of Education – staff representatives
    - Karratha and Districts Chamber of Commerce and Industry
    - Pilbara Ports Authority
- On 30 September 2024, Woodside emailed Karratha CLG advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 13 October 2024 Woodside's September presentation to the CLG was emailed to the CLG regardless of their attendance at the meeting.
- On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 29 November 2024, Woodside presented to the Karratha CLG on EP consultation requirements (SI report, reference 34.2).
  - No feedback was provided on our consultation process.
  - Woodside also presented on how it consults relevant persons in the course of preparing EPs and provided information on relevant persons and EMBA's. The slides included a QR code and a URL to the Consultation Activities page of the Woodside website. Copies of the latest edition of *Let's Talk* were provided in hard copy and sent electronically with the minutes and pack.
  - 8 CLG members attended the meeting representing:
    - City of Karratha – staff representatives
    - Pilbara Development Commission

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<ul style="list-style-type: none"> <li>▪ Murujuga Aboriginal Corporation</li> <li>▪ Regional Development Australia Pilbara</li> <li>▪ Horizon Power</li> </ul> <ul style="list-style-type: none"> <li>• On 18 December 2024 Woodside's November presentation to the CLG was emailed to the CLG regardless of their attendance at the meeting.</li> <li>• On 24 February 2025, Woodside emailed Karratha CLG an activity update regarding well location coordinates and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.3).</li> <li>• On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> <li>• On 20 March 2025, Woodside presented to the Exmouth CLG (SI report, reference 34.3) on Woodside activities, including this EP. Woodside presented a slide listing EPs on which the CLG members had recently been consulted and EPs currently under consultation.</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
No feedback, objection or claim about the adverse impact of the activity 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 7.7.1).	No additional measures or controls are required.
Summary Report - Consultation Complete		
While Karratha CLG is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Karratha CLG to provide feedback during the consultation process.		

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### 5.4.5 Karratha and Districts Chamber of Commerce and Industry (Karratha CCI)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Karratha CCI advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed Karratha CCI an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While Karratha CCI is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Karratha CCI to provide feedback during the consultation process.		

## 5.5 Recreational marine users and peak representative bodies

### 5.5.1 Gascoyne Recreational Marine Users

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside sent an email to individual Gascoyne Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 6.1.20), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 4 October 2024, Woodside sent a letter to individual Gascoyne Recreational Marine Users advising of the proposed activity (Record of Consultation, reference 6.1.21), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 23 October 2024, as no response had been received, Woodside proactively sent a follow-up letter (Record of Consultation, reference 6.2.9).</li> </ul>
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<ul style="list-style-type: none"> <li>On 28 February 2025, Woodside emailed Gascoyne Recreational Marine Users an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.14).</li> <li>On 4 April 2025, Woodside sent a letter to individual Gascoyne Recreational Marine Users advising of the activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.15).</li> <li>On 16 April 2025, as no response had been received, Woodside proactively sent a follow-up letter (Record of Consultation, reference 6.4.4).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While Gascoyne Recreational Marine users under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Gascoyne Recreational Marine users to provide feedback during the consultation process.		

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## 5.6 Other non-government groups or organisations (NGOs) or individuals

### 5.6.1 Australian Conservation Foundation (ACF)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed ACF advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed ACF an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While ACF is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for ACF to provide feedback during the consultation process.		

### 5.6.2 Australian Marine Conservation Society (AMCS)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed AMCS advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed AMCS an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While AMCS is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for AMCS to provide feedback during the consultation process.		

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### 5.6.3 Conservation Council of Western Australia (CCWA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed CCWA advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed CCWA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While CCWA is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for CCWA to provide feedback during the consultation process.		

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#### 5.6.4 Greenpeace Australia Pacific (GAP)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed GAP advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed GAP an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While GAP is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for GAP to provide feedback during the consultation process.		

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### 5.6.5 Australian Centre for Corporate Responsibility (ACCR)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed ACCR advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed ACCR an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While ACCR is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for ACCR to provide feedback during the consultation process.		

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### 5.6.6 Maritime Union of Australia (MUA)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed MUA advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed MUA an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While MUA is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for MUA to provide feedback during the consultation process.		

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### 5.6.7 Market Forces

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"> <li>On 30 September 2024, Woodside emailed Market Forces advising of the proposed activity (Record of Consultation, reference 6.1.7), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li> <li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li> <li>On 24 February 2025, Woodside emailed Market Forces an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).</li> <li>On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).</li> </ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While Market Forces is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Market Forces to provide feedback during the consultation process.		

### 5.6.8 Australian Institute of Marine Science (AIMS)

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed AIMS advising of the proposed activity (Record of Consultation, reference 6.1.39), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- (1) On 21 October 2024, AIMS responded to Woodside (SI Report, reference 32.1) to confirm that they had no objections to the planned activities.
- (1) On 31 December 2024, Woodside responded to AIMS (SI Report, reference 32.2) confirming that AIMS had no objections on the planned activities.
- On 24 February 2025, Woodside emailed AIMS an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.33).
- On 13 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.5).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's Response	Inclusion in Environment Plan
(1) No objections to the activities.	(1) <b>Woodside assessment:</b> Woodside accepts that AIMS has no objections with proposed EP activities. <b>Woodside response:</b> Woodside confirmed that AIMS had no objections with EP activities.	(1) Not required.
While feedback has been received, there were no objections or claims.	Woodside has assessed the merits of each objection or claim (if any) about the adverse impact of the activity to which the EP relates, as required under Regulation 24.  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 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 7.7.1).	No additional controls or measures are required.
<b>Summary Report – Consultation Complete</b>		
While AIMS is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for AIMS to provide feedback during the consultation process.		

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### 5.6.9 Commonwealth Scientific and Industrial Research Organisation (CSIRO)

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed CSIRO advising of the proposed activity (Record of Consultation, reference 6.1.39), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed CSIRO an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.33).
- On 13 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.5).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While CSIRO is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for CSIRO to provide feedback during the consultation process.		

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5.6.10 Western Australian Marine Science Institution (WAMSI)

<b>Summary of information provided and record of consultation for this EP:</b> <ul style="list-style-type: none"><li>On 30 September 2024, Woodside emailed WAMSI advising of the proposed activity (Record of Consultation, reference 6.1.39), provided a Consultation Information Sheet, and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>.</li><li>On 17 October 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).</li><li>On 24 February 2025, Woodside emailed WAMSI an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.33).</li><li>On 13 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.5).</li></ul>		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While WAMSI is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for WAMSI to provide feedback during the consultation process.		

### 5.6.11 Cape Conservation Group (CCG)

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed CCG advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed CCG an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While CCG is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for CCG to provide feedback during the consultation process.		

### 5.6.12 Protect Ningaloo

**Summary of information provided and record of consultation for this EP:**

- On 30 September 2024, Woodside emailed Protect Ningaloo advising of the proposed activity (Record of Consultation, reference 6.1.7), 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 2024, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.2.1).
- On 24 February 2025, Woodside emailed Protect Ningaloo an activity update regarding planned discharges and included an updated Consultation Information Sheet (Record of Consultation, reference 6.3.2).
- On 14 March 2025, as no response had been received, Woodside proactively sent a follow-up email (Record of Consultation, reference 6.4.2).

Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and Woodside's 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 7.1.14).	No additional measures or controls are required.
<b>Summary Report – Consultation Complete</b>		
While Protect Ningaloo is not a relevant person under regulation 25 of the Environment Regulations, Woodside considers it has still provided sufficient information and a reasonable period outside of regulatory requirements for Protect Ningaloo to provide feedback during the consultation process.		

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6. RECORD OF CONSULTATION

6.1 Initial consultation

6.1.1 Consultation information sheet



ANGEL SUBSEA INFRASTRUCTURE  
REMOVAL ENVIRONMENT PLAN

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 could 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 the proposed activity is 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 to an acceptable level. 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 activity, in accordance with the intended outcome of consultation.

Overview

Woodside is submitting the Angel Subsea Infrastructure Removal Environment Plan (EP) in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)*.

The EP covers removal of subsea flowlines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure), from the Angel field.

This EP will remove redundant Angel subsea infrastructure which connects three production wells to the Angel platform. The production wells have ceased production and will be permanently plugged and abandoned under the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA-03 Well Intervention Environment Plan.

Woodside is decommissioning redundant equipment in its operating fields. Infrastructure that remains in the Angel field will continue to be managed under the Angel Operations EP.

Location

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier as shown in **Figure 1**. The Angel subsea infrastructure is in water depths between approximately 77 m and 85 m. The locations of the Angel subsea infrastructure are in **Table 2**.

Proposed activity

Activities under this EP include:

- The removal of three 14-inch rigid flowlines between the Angel platform and the AP 2, AP 3, and AP 4 wells. The flowlines are carbon steel (with internal stainless-steel liner) and coated with concrete to provide stabilisation on the seabed.
- The removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells. The umbilicals are plastic coated and contain electrical and hydraulic cores.

- The removal of ancillary equipment, such as umbilical termination assemblies (UTAs) and their associated steel foundations, rigid tie-in spool pieces, hydraulic flying leads (HFLs), electrical flying leads (EFLs) and stabilisation materials, such as grout bags, sandbags and concrete mattresses.

- Installation of permanent plugs / caps to preserve fluids within flowlines / umbilicals as close as practicable to the Angel platform. Removal of Angel well infrastructure has been included as an optional activity under this EP and includes removal of three wellheads and subsea Christmas trees (AP 2, AP 3 and AP 4) using the construction support vessel. Removal of this well infrastructure is also an optional activity using the mobile offshore drilling unit in the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA03 Well Intervention Environment Plan.

The subsea infrastructure tying the three Angel wells back to the Angel facility will be flushed and filled with treated seawater under the Angel Operations EP in Q2 2025. Decommissioning of the Angel subsea infrastructure in this EP is contingent on successful flushing of the three Angel rigid flowlines having been completed.

All removed Angel subsea infrastructure will be returned to shore and recycled where practicable.

Timing and duration

- Removal of Angel subsea infrastructure: approximately 3 months between around Q3 2026 and Q1 2027.
- Optional removal of Angel well infrastructure by construction support vessel: approximately 1-5 days per well between around Q3 2026 and Q1 2027.

The timing and duration of the Angel subsea infrastructure removal activity are subject to vessel availability, weather and other unforeseen circumstances.

Vessels

The removal activities will be done by a construction support vessel. The construction support vessel will hold equipment and tools, such as remotely operated vehicles, needed to remove the Angel subsea infrastructure. The construction support vessel may be supported by other vessels.

Helicopters may be used to transfer crew and equipment between the construction support vessel and the shore.

1 Angel Subsea Infrastructure Removal Environment Plan | October 2024

Communications with mariners

The location of the Angel platform and the AP 2, AP 3, and AP 4 wells are marked on nautical charts. A 500 m radius gazetted Petroleum Safety Zone surrounds the Angel platform. A 1500 m radius Operational Area will apply around the Angel subsea infrastructure during the removal activities. This includes a temporary 500 m exclusion zone around the construction support vessel to manage vessel movements.

Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.

Joint Venture

Woodside operates the facilities in WA-1-L, WA-3-L, and WA-5-L on behalf of the Northwest Shelf Joint Venture. The participants in the Northwest Shelf Joint Venture are:

- Woodside Energy Ltd
- Woodside Energy (Northwest Shelf) Pty Ltd
- BP Developments Australia Pty Ltd
- Chevron Australia Pty Ltd
- Japan Australia LNG (MIMI) Pty Ltd
- CNOOC NWS Private Ltd
- Shell Australia Pty Ltd.

Feedback

Woodside welcomes your feedback by 1 November 2024

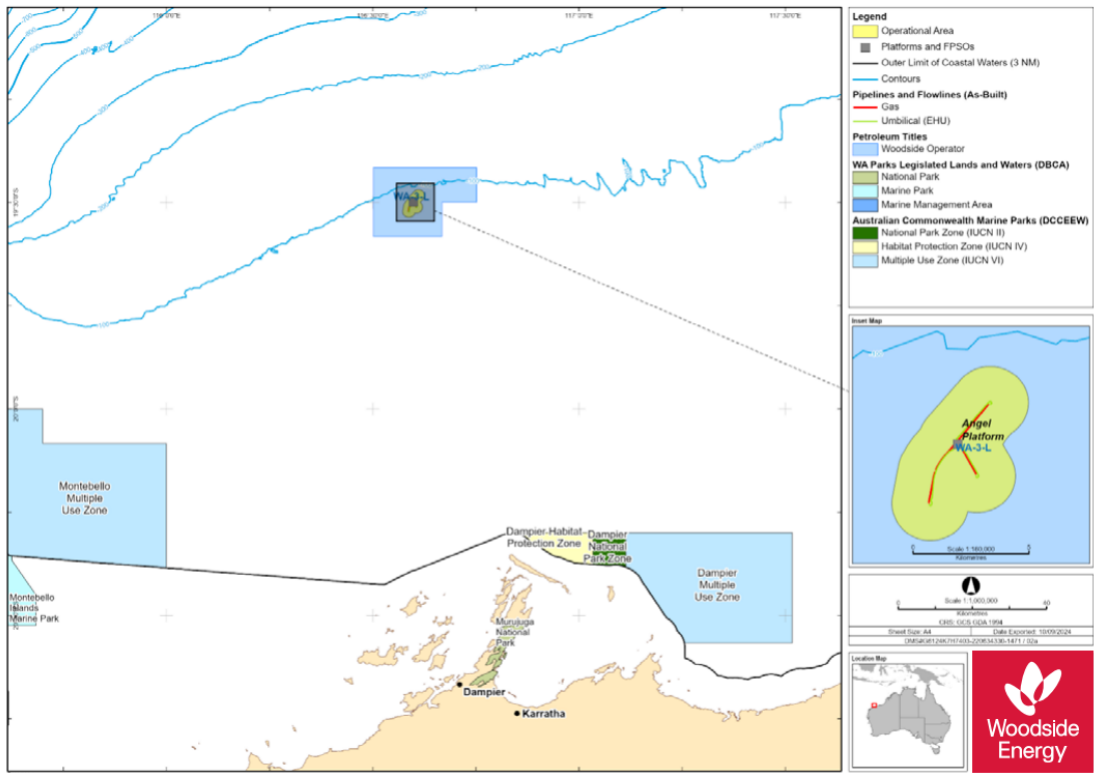


Figure 1: Operational Area for the Angel Subsea Infrastructure Removal EP

Table 1. Activity Summary

Angel Subsea Infrastructure Removal Environment Plan	
<b>Petroleum title</b>	<ul style="list-style-type: none"> <li>Production licence WA-3-L</li> </ul>
<b>Approximate water depth</b>	<ul style="list-style-type: none"> <li>77 m – 85 m</li> </ul>
<b>Activity summary</b>	<ul style="list-style-type: none"> <li>Removal of three 14-inch rigid flowlines</li> <li>Removal of three 5-inch flexible umbilicals</li> <li>Removal of ancillary structures</li> <li>Installation of plugs and caps for rigid flowlines / flexible umbilicals (close to platform)</li> <li>Optional removal of three wellheads and subsea trees (AP 2, AP 3 and AP 4), which may be recovered following plug and abandonment activities</li> </ul>
<b>Infrastructure</b>	<p>Angel platform to AP 2 well:</p> <ul style="list-style-type: none"> <li>-2.1 km 14-inch carbon steel rigid flowline removal (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>-2.5 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-56 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment removal (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul> <p>Angel platform to AP 3 well:</p> <ul style="list-style-type: none"> <li>-1.6 km 14-inch carbon steel rigid flowline removal</li> <li>-1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-60 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials) removal</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul> <p>Angel platform to AP 4 well:</p> <ul style="list-style-type: none"> <li>-2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece) removal</li> <li>-2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment removal (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul>
<b>Commencement date</b>	Expected to commence around Q3 2026
<b>Finish date</b>	Expected to be completed by around the end of Q1 2027
<b>Estimated duration</b>	<ul style="list-style-type: none"> <li>Rigid flowline removal: up to approximately two months</li> <li>Flexible umbilical removal: up to approximately one month</li> <li>Optional removal of well infrastructure: approximately 1-5 days per well</li> </ul>
<b>Operational Area and exclusion zone</b>	<ul style="list-style-type: none"> <li>Operational Area: 1500 m around the Angel subsea infrastructure</li> <li>Temporary exclusion zone: 500 m around the construction support vessel</li> <li>Petroleum Safety Zone: 500 m radius around the Angel platform</li> </ul>
<b>Vessels</b>	<ul style="list-style-type: none"> <li>Construction support vessel</li> <li>Support vessels</li> <li>Helicopters</li> </ul>
<b>Distance to nearest town</b>	Operational Area is approximately 125 km north of Dampier
<b>Distance to nearest marine park / nature reserve</b>	Dampier Marine Park, approximately 90 km south of the Operational Area

Table 2. Approximate locations of equipment in the Angel field

Wellhead	Approximate Water Depth (m)	Latitude	Longitude	Titles
Angel Platform	-80	19° 29' 55" S	116° 35' 53" E	WA-3-L
AP 2 rigid flowline (runs from AP 2 well to the platform)	-85	19° 29' 0" S	116° 36' 37" E	WA-3-L
AP 3 rigid flowline (runs from AP 3 well to the platform)	-78	19° 30' 38" S	116° 36' 19" E	WA-3-L
AP 4 rigid flowline (runs from AP 4 well to the platform)	-77	19° 31' 18" S	116° 35' 13" E	WA-3-L

### Environment That May Be Affected (EMBA)

The EMBA is a mathematically modelled area of the largest possible spatial extent where the Angel subsea infrastructure removal activities could potentially have an environmental consequence. The broadest extent of the model takes into consideration planned and unplanned activities. For the EP, the EMBA has been developed combining numerous modelling outputs based on scenarios involving a release of hydrocarbons to the environment. These scenarios are highly unlikely to occur. The most credible modelling scenarios that inform the EMBA are based on hydrocarbon release because of a vessel collision. The EMBA is depicted in **Figure 2**.

The EMBA does not represent the extent of the predicted impact of a release of hydrocarbons. Rather, the EMBA represents the merged area of many possible paths that a hydrocarbon release could travel, depending on factors including the weather and ocean conditions at the time of the release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA will not be affected. Only a minimal, specific part of the EMBA will be affected and that portion will only be known at the time of the release.

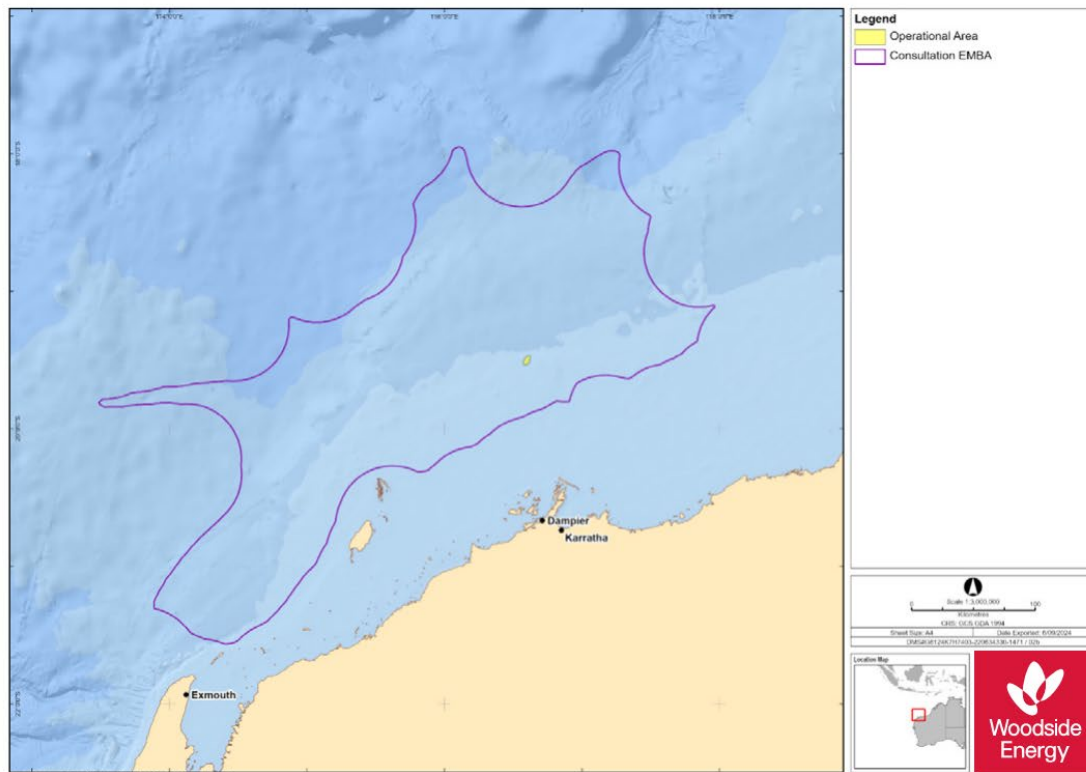


Figure 2. Environment that May Be Affected for the Angel subsea infrastructure removal activities

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Discharges: decommissioning activities</b>	<ul style="list-style-type: none"> <li>During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment. Fluid includes treated seawater with residual hydrocarbon (less than 5ppm) and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</li> <li>Chemical use may be required to remove marine growth and calcium/scale buildup.</li> <li>Small amounts of cement spill will be discharged during rigid flowline cutting.</li> </ul>	<ul style="list-style-type: none"> <li>Localised, negligible, changes to sediment quality at the cut locations.</li> <li>Short-term, localised decrease in water quality from the release of seawater with residual chemicals and hydrocarbons.</li> </ul>	<ul style="list-style-type: none"> <li>All chemicals that are planned to be discharged into the marine environment reduced to ALARP and approved through the Woodside chemical assessment process.</li> </ul>
<b>Atmospheric emissions and greenhouse gas (GHG) emissions</b>	<ul style="list-style-type: none"> <li>Atmospheric emissions and GHG emissions will be associated with the project vessels from internal combustion engines and incineration activities.</li> </ul>	<ul style="list-style-type: none"> <li>Localised, short-term decrease in air quality.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for marine air pollution and GHG emissions reporting.</li> </ul>
<b>Light emissions from project vessels</b>	<ul style="list-style-type: none"> <li>Project vessels will use external lighting to navigate and conduct safe operations at night, including to maintain good night visibility for crew members and to communicate the vessel's presence to other marine users.</li> </ul>	<ul style="list-style-type: none"> <li>Light emissions may affect fauna (such as marine turtles and birds) in the following ways:  Behaviour: artificial lighting has the potential to create a constant level of light at night that can override natural levels and cycles.  Orientation: if an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the Woodside Offshore Seabird Management Plan.</li> <li>Lighting will be limited to the minimum required for navigation and safe operational requirements.</li> </ul>



Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Unplanned (Accidents / Incidents)</b>			
<b>Unplanned hydrocarbon release: vessel collision</b>	<p>Project vessels will use marine diesel fuel, meaning a vessel collision involving a project vessel or third-party during the activity may potentially result in the release of marine diesel.</p> <p>For a collision to result in the worst-case scenario diesel release, several factors must occur as follows:</p> <ul style="list-style-type: none"> <li>Identified causes of vessel interaction must result in a collision.</li> <li>The collision has enough force to penetrate the vessel hull and in the exact location of the fuel tank.</li> <li>The fuel tank must be full or at least of volume which is higher than the point of penetration.</li> </ul>	<ul style="list-style-type: none"> <li>In the highly unlikely event of a vessel collision causing a release of hydrocarbons, impacts to water quality and marine ecosystems could occur.</li> <li>Marine diesel is a relatively volatile, non-persistent nature hydrocarbon with around 25% evaporating within the first 24 hours.</li> <li>Potential impacts across the whole EMBA were assessed including receptors such as plankton, fish, marine mammals, seabirds and migratory shorebirds, tourism, recreation, and commercial fisheries (for example).</li> <li>The potential biological and ecological impacts of an accidental hydrocarbon release as a result of a vessel collision during the activities are expected to have minor, short term impacts to species and habitats, but not affecting ecosystem function.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.</li> <li>Consult with relevant persons so that other marine users are informed and aware, reducing the likelihood of a collision.</li> <li>Establish temporary exclusion zones around vessels which are communicated to marine users to reduce the likelihood of collision.</li> <li>Spill response arrangements supporting the Oil Pollution Emergency Plan (OPEP) will be tested to ensure the OPEP can be implemented as planned.</li> <li>Emergency response activities would be implemented in line with the OPEP.</li> </ul>
<b>Unplanned hydrocarbon release: bunkering</b>	<ul style="list-style-type: none"> <li>Accidental loss of hydrocarbons to the marine environment during planned bunkering/refuelling may occur caused by partial or total failure of a bulk transfer hose or fittings due to operational stress or other integrity issues.</li> </ul>	<ul style="list-style-type: none"> <li>The biological consequences of such a small volume spill on identified open water sensitive receptors relate to the potential for slight impacts to megafauna, plankton and fish populations that are within the spill-affected area.</li> </ul>	<ul style="list-style-type: none"> <li>Preventing unplanned hydrocarbon release due to bunkering.</li> <li>Comply with regulatory requirements for the prevention of marine pollution.</li> <li>Appropriate bunkering equipment kept and maintained.</li> <li>Compliance with Contractor procedures for the management of bunkering/helicopter operations to reduce the likelihood and potential severity of a spill.</li> </ul>
<b>Unplanned discharge: deck spills</b>	<ul style="list-style-type: none"> <li>Accidental discharge of hydrocarbons/ chemicals from project vessel deck activities and equipment (such as cranes and winches).</li> </ul>	<ul style="list-style-type: none"> <li>Unplanned discharges of non-process chemicals and hydrocarbons may decrease the water quality in the immediate vicinity of the release. Only small volumes (approximately &lt;100 L) would be expected to potentially occur, resulting in very short-term impacts to water quality, and limited to the immediate release location.</li> <li>No significant impacts from the accidental discharges described would be anticipated due to the offshore/open water locations, low sensitivity of surrounding water quality and high level of dilution into the open water marine environment of the Operational Area.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of marine pollution.</li> <li>Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.</li> <li>Maintain and locate spill kits in close proximity to hydrocarbon storage areas and deck areas for use to contain and recover deck spills.</li> </ul>

### Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the environment arising from the Angel subsea infrastructure removal activity. Several mitigation and management measures for the activity are outlined in **Table 3**. Further details will be provided in the EP.

**Table 3. Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity**

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Planned Activities (Routine and Non-routine)</b>			
<b>Physical presence: interaction with other marine users</b>	<ul style="list-style-type: none"> <li>A construction support vessel will be used to remove the Angel subsea infrastructure, supported by other vessels and helicopter as required.</li> <li>The physical presence and movement of project vessels within the Operational Area has the potential to interact other marine users.</li> </ul>	<ul style="list-style-type: none"> <li>There is the potential for localised interaction with commercial fishing activities and commercial shipping.</li> <li>Due to the offshore location and the localised nature of the activity, if there is an interaction it is expected to be negligible with no lasting effect.</li> </ul>	<ul style="list-style-type: none"> <li>Vessels adhere to regulatory requirements for navigational safety</li> <li>Establish a temporary 500 m exclusion zone around the construction support vessel which is communicated to marine users.</li> <li>Notify relevant government departments, and fishing industry representative bodies prior to commencement and on completion of activities.</li> <li>Notify the Australian Hydrographic Office prior to commencement of the activity so that marine users are aware of the activity.</li> <li>Consult with relevant persons so they are informed of the proposed activities.</li> </ul>
<b>Physical presence: disturbance to benthic habitat</b>	<ul style="list-style-type: none"> <li>Subsea cleaning and preparation activities may be done using high-pressure water and brushes on Remotely Operated Vehicles.</li> <li>Subsea infrastructure cutting and removal may result in a localised increase in turbidity and some sediment relocation.</li> <li>Use of remotely operated and placement of equipment on the seabed will disturb small areas of benthic habitat.</li> </ul>	<ul style="list-style-type: none"> <li>The Operational Area consists of sandy substrate, with marine growth on the subsea infrastructure.</li> <li>Activities will be localised and of short duration, hence physical impacts to the seabed are expected to be negligible.</li> </ul>	<ul style="list-style-type: none"> <li>No planned anchoring.</li> <li>Check that all equipment has been removed.</li> <li>Subsea infrastructure to be marked on navigational charts until removal.</li> <li>Comply with requirements of Underwater Cultural Heritage Act 2018 (Cth).</li> </ul>
<b>Routine acoustic emissions: vessels, helicopters, and mechanical equipment operation</b>	<ul style="list-style-type: none"> <li>The operation of the project vessels and positioning equipment will generate noise both in the air and underwater due to the operation of thruster engines, propellers, and the use of cutting tools subsea.</li> <li>Helicopter noise within the operational area will occur during helicopter take-off and landing.</li> </ul>	<ul style="list-style-type: none"> <li>Elevated underwater noise may affect marine fauna, including marine mammals, turtles, and fish in the following ways: <ul style="list-style-type: none"> <li>Through short-term behavioural disturbance.</li> <li>By masking or interfering with other biologically important sounds.</li> </ul> </li> <li>The Operational Area does not overlap biologically important areas for fauna sensitive to underwater noise (e.g. cetaceans). The noise emissions during the activity will not credibly cause injury to fauna, but may result in localised, short-term behavioural disturbance and masking.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for interactions with marine fauna to prevent adverse interactions.</li> </ul>
<b>Routine discharges: marine wastewater</b>	<ul style="list-style-type: none"> <li>Routine discharge of sewage, grey water and putrescible wastes to marine environment from project vessels within the Operational Area.</li> <li>Routine discharge of deck and bilge water to marine environment from project vessels within the Operational Area.</li> </ul>	<ul style="list-style-type: none"> <li>Short-term, localised decrease in water quality around the vessel.</li> </ul>	<ul style="list-style-type: none"> <li>Marine discharges will be managed according to regulatory requirements.</li> <li>Chemicals selected with the lowest reasonably practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process.</li> </ul>

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Unplanned discharge of solid hazardous / non-hazardous solid waste / equipment</b>	<ul style="list-style-type: none"> <li>Accidental loss of hazardous or non-hazardous wastes (including dropped objects) to the marine environment.</li> <li>Generation and disposal of waste from infrastructure removal.</li> <li>Dropped objects resulting in disturbance of benthic habitat.</li> </ul>	<ul style="list-style-type: none"> <li>The potential impacts of hazardous or non-hazardous solid wastes and equipment accidentally discharged to the marine environment include contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes.</li> <li>Incorrect classification of waste can also result in inappropriate disposal of hazardous decommissioning wastes that could contaminate non-hazardous waste streams. This has the potential to result in contamination to air, soil and water during disposal.</li> <li>In the unlikely event of loss of an object being dropped into the marine environment, potential environmental effects would be limited to localised physical impacts on benthic communities.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of marine pollution and handling of hazardous wastes.</li> <li>Disposal of waste associated with the subsea infrastructure will comply with relevant State and Commonwealth legislation.</li> <li>Project vessel waste arrangements which require waste segregation, recording and safe handling of waste according to their hazard and recyclability class.</li> <li>Solid waste/equipment dropped to the marine environment will be recovered where safe and practicable to do so.</li> <li>The project vessels' work procedures for lifts, bulk transfers and cargo loading which require safe lifting and management of loads.</li> <li>Implement an infrastructure disposal and resource recovery strategy that tracks waste, considers the waste hierarchy and considers contingency procedures for dealing with contaminants.</li> </ul>
<b>Physical presence: vessel collision with marine fauna</b>	<ul style="list-style-type: none"> <li>Vessel movements have the potential to result in collisions between project vessel (hull and propellers) and marine fauna.</li> <li>Project vessels would typically be stationary or moving at low speeds when supporting subsea infrastructure removal.</li> </ul>	<ul style="list-style-type: none"> <li>Given the absence of aggregations, duration of activities within the Operational Area and the slow speeds at which project vessels operate, collisions with cetaceans, marine turtles and whale sharks are considered highly unlikely.</li> <li>Collisions between vessels and marine fauna may result in injury to, or death of, marine fauna.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for interactions with marine fauna to reduce the likelihood of a collision occurring.</li> </ul>
<b>Accidental introduction of invasive marine species (IMS)</b>	<ul style="list-style-type: none"> <li>Project vessels have the potential to introduce IMS to the Operational Area through marine biofouling (containing IMS) on vessels, as well as within high-risk ballast water exchange.</li> </ul>	<ul style="list-style-type: none"> <li>The likelihood of IMS being introduced and establishing viable populations within these Operational Area or immediate surrounds is considered remote.</li> <li>Introduction of IMS may result in changes to the ecology of the operational area and competition with existing biota.</li> </ul>	<ul style="list-style-type: none"> <li>Project vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements.</li> <li>Woodside's IMS risk assessment process will be applied to project vessels and immovable equipment undertaking the activities.</li> </ul>

## 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 please contact Woodside before **1 November 2024** via:

**E: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)**

**Phone: 1800 442 977**

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:

[www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/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 relevant persons as relevant and appropriate.

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 2023 (Cth)* and support other regulatory submissions associated with the planned activities (which may or may not be confidential).

Please let us know if you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit: [www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities)



6.1.2 Summary information sheet



ANGEL SUBSEA INFRASTRUCTURE  
REMOVAL ENVIRONMENT PLAN

CARNARVON BASIN, NORTH-WEST AUSTRALIA

Woodside consults relevant persons in the course of preparing an Environment Plan (EP) to notify them and obtain their input. This assists 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. These are the intended outcomes of consultation.

This summary information sheet provides a high-level overview of the Angel Subsea Infrastructure Removal EP.

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 Angel Subsea Infrastructure Removal EP Consultation Information Sheet (J024) which can be found at: <http://www.woodside.com/what-we-do/consultation-activities>

Overview

Woodside is submitting the Angel Subsea Infrastructure Removal EP for the removal of subsea equipment from the Angel field.

The equipment consists of flowlines, umbilicals, and associated equipment connecting three production wells to the Angel platform.

The equipment is near the Angel platform approximately 125 km north of Dampier in water depths between 75 m and 85 m. **Figure 1** is a map showing the location of the equipment and Woodside's Operational Area for the work.

Summary of activities includes:

- remove three 14-inch flowlines between the Angel platform and the wells
- remove three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells
- removal other, smaller equipment associated with the flowlines and umbilicals
- cap the ends where the flowlines and umbilicals connect to the Angel platform.

All removed Angel subsea infrastructure will be returned to shore and recycled where practicable.

Woodside plans to do the work between October 2026 and March 2027. The work will take about three months. The work will be done using a construction support vessel. Similar vessels are often used in the oil and gas industry.

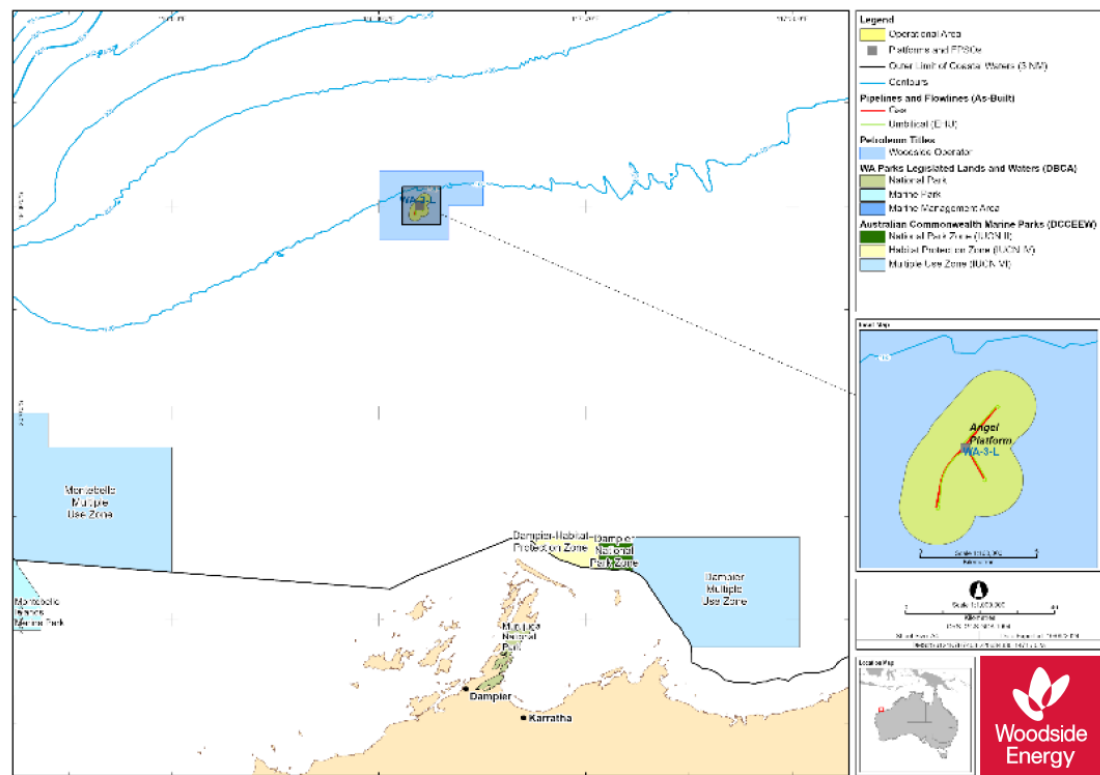


Figure 1: Angel subsea infrastructure location and operational area of the Angel Subsea Infrastructure Removal EP

### Environmental Impacts and Management

The work includes planned activities that may impact the environment. Unplanned events, such as accidents, may also result in environmental risks. Woodside manages the work to reduce impacts and risks to as low as practical.

Planned activities are activities that Woodside knows will happen as part of this work program. For example, planned activities include other users of the sea being temporarily stopped from accessing the work area, and the vessels used for the work will generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage). These planned activities will comply with legislative and regulatory requirements.

Unplanned events are not planned as part of the work program, but may be the result of an accident, incident, or emergency. It is very unlikely that there will be an unplanned event. Unplanned events might include a spill of fuel or oil from a vessel collision, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with whales, waste entering the environment and accidental introduction of invasive species from outside the region.

A table showing all planned and unplanned activities, potential impacts and management measures for each is included in the Angel Subsea Infrastructure Removal Consultation Information Sheet (September 2024). This Information Sheet is available here: <https://www.woodside.com/sustainability/consultation-activities>.

The area over which unplanned events could have environmental impacts is shown in the map below (Figure 2). This is referred to as the environment that may be affected (EMBA). The location where the work will be done is known as the Operational Area. The Operational Area is also shown on the maps. If an unplanned event happened, such as a fuel spill from a vessel collision, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

### Environment that may be affected (EMBA)

The EMBA is a mathematically modelled area of the largest possible spatial extent where the Angela Subsea Infrastructure Removal EP activities could potentially have an environmental consequence. The broadest extent of the model takes into consideration planned and unplanned activities. For the EP, the EMBA has been developed combining numerous modelling outputs based on scenarios involving a release of hydrocarbons to the environment.

These scenarios are highly unlikely to occur. The most credible modelling scenarios that inform the EMBA are based on hydrocarbon release as a result of well loss of containment, subsea loss of containment and vessel collision. The EMBA is depicted in Figure 2.

The EMBA does not represent the extent of the predicted impact of a release of hydrocarbons. Rather, the EMBA represents the merged area of many possible paths that a hydrocarbon release could travel, depending on factors including the weather and ocean conditions at the time of the release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA will not be affected. Only a minimal, specific part of the EMBA will be affected and that portion will only be known at the time of the release.

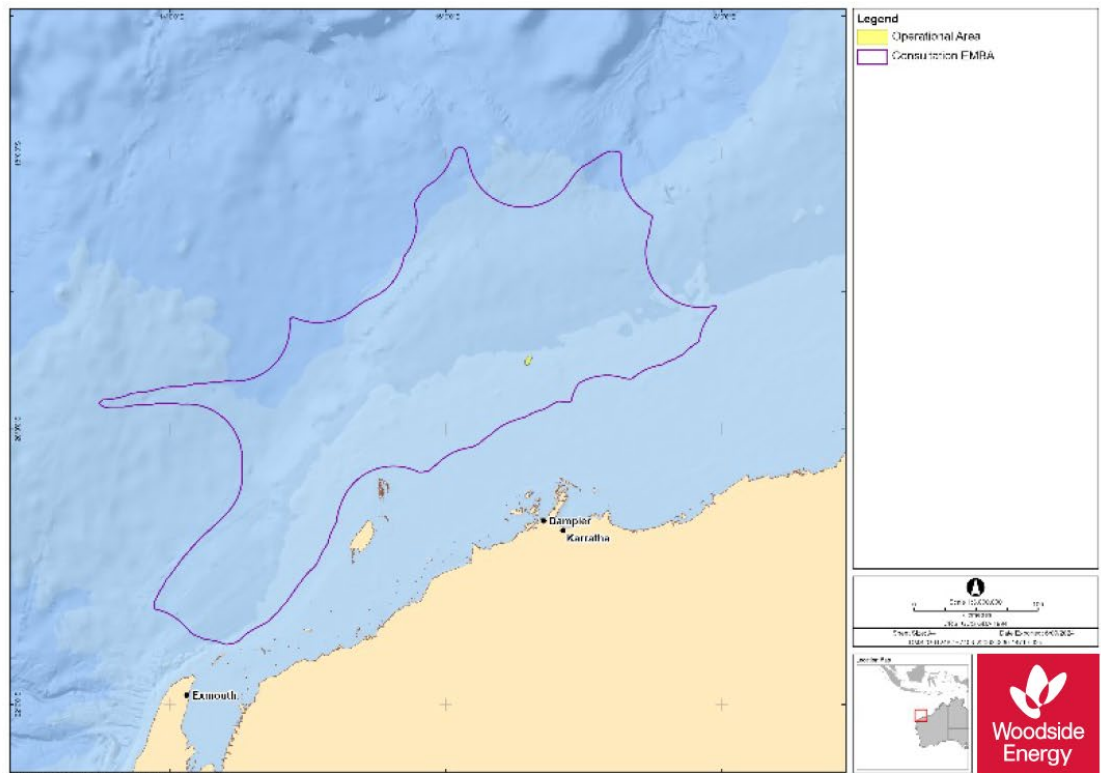


Figure 2: Environment That May Be Affected (EMBA) by the Angel Subsea Infrastructure Removal EP

Feedback

Woodside consults relevant persons in the course of preparing EPs 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 please contact Woodside before **1 November 2024** via:

**E: [Feedback@woodside.com](mailto:Feedback@woodside.com)**

**Phone: 1800 442 977**

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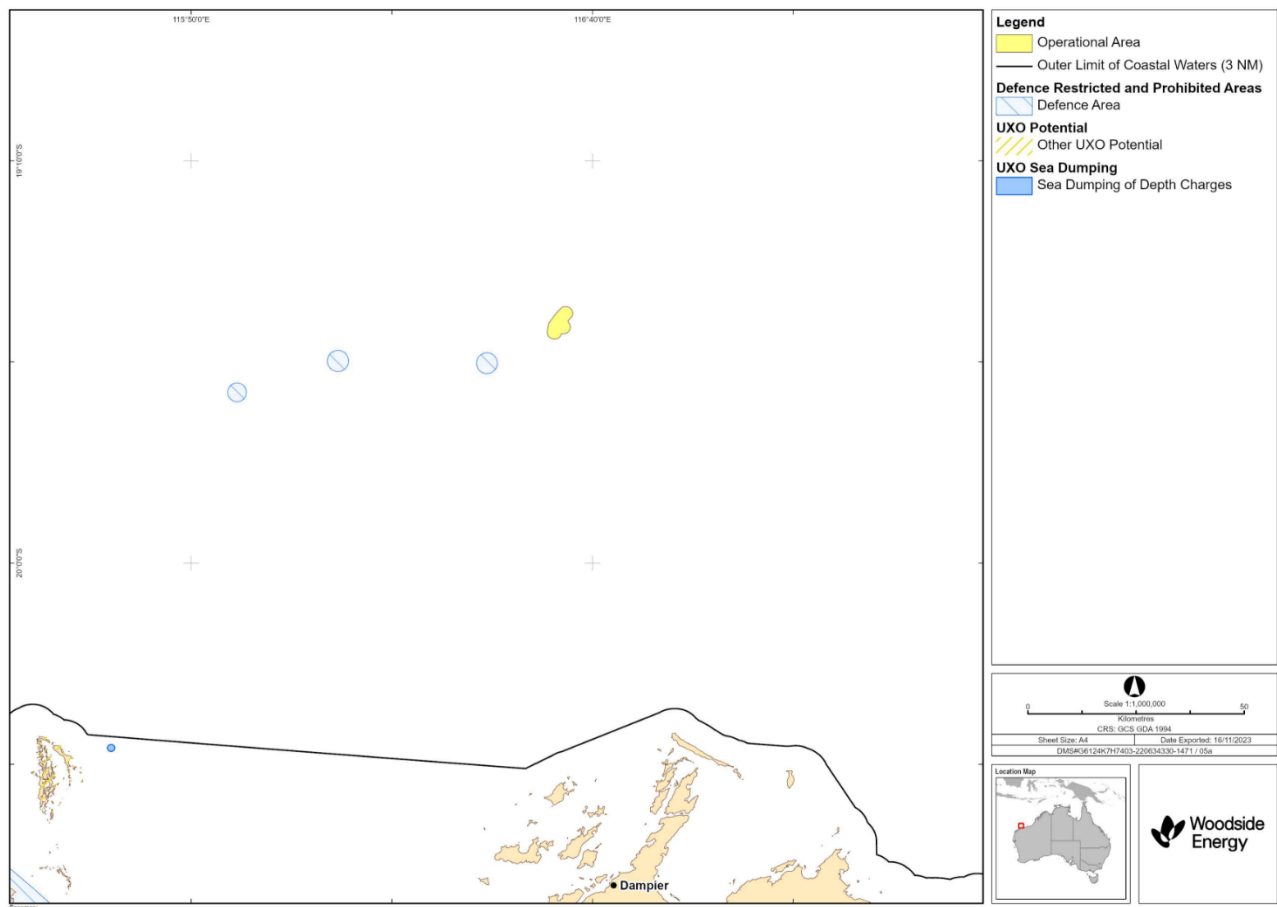
Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected relevant persons as relevant and appropriate.

Your feedback and our response will be included in our EP for the proposed activity, which will be submitted to NOPSEMA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) and may support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

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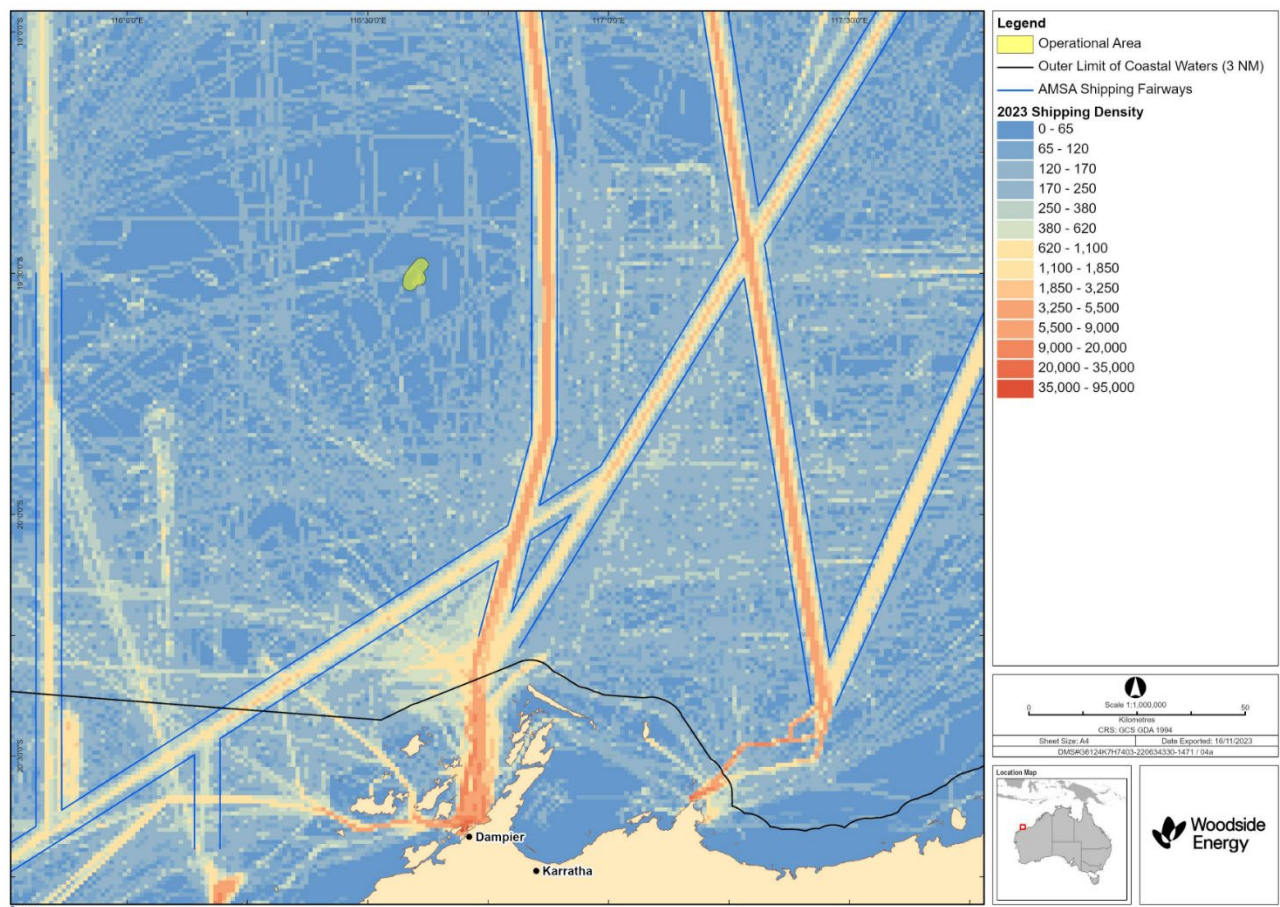
6.1.3 Defence zones map



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6.1.4 Vessel density map



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## 6.1.5 Shipwrecks

EMBA and Accumulated Shoreline + State Historical Shipwrecks OVERLAP					
Vessel Name	Comments	When Lost	Where Lost	Latitude	Longitude
Trial	Ship	1622/05/24	Trial Rocks N.E. tip of Eaglehawk Island West of Dampier, Dampier Archipelago	20°17.159	115°22.514
McCormack	Barge	1989/10/00		20°08.200	115°57.200
Haw Kiet		2003		18°27.49	117°15.5
Lady Ann	Ship (non-sail)	9/18/1982	24 miles north of NW Cape N.E. tip of Eaglehawk Island, Dampier Archipelago	21°24	114°12
McDermott Derrick Barge No 20	Barge	10/20/1989		20°08.200	115°57.200

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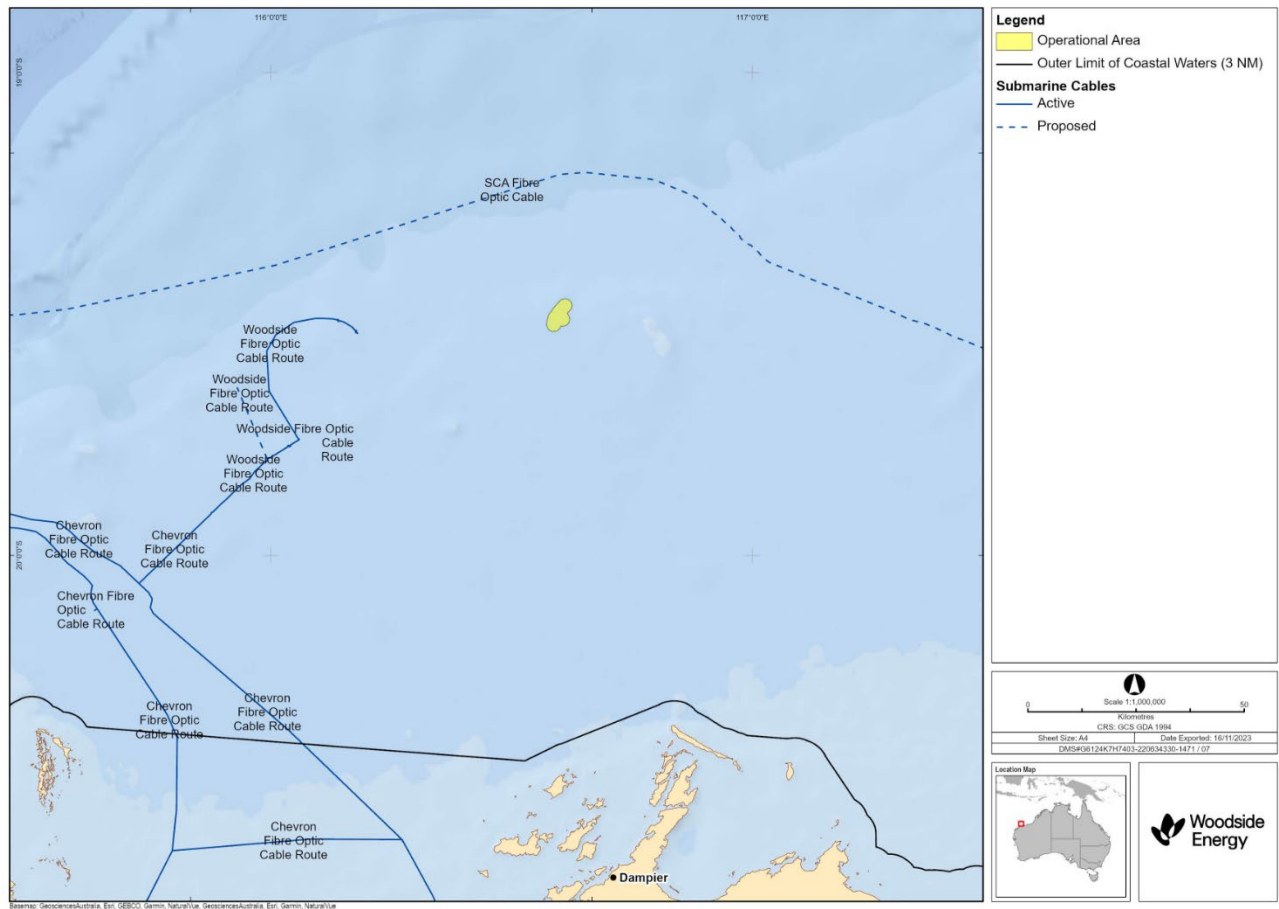
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6.1.6 Submarine communication cables map



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**6.1.7 Email to Australasian Centre for Corporate Responsibility (ACCR), Pilbara Ports Association (PPA), Australian Border Force (ABF), Australian Conservation Foundation (ACF), Australian Energy Producers (AEP), Australian Marine Conservation Society (AMCS), Australian Maritime Safety Authority (AMSA) – Marine Pollution, Cape Conservation Group (CCG), BP, City of Karratha, Conservation Council of WA (CCWA), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Defence (DoD), Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), Department of Industry, Science and Resources (DISR), Department of Transport (DoT), Exmouth Chamber of Commerce and Industry (CCI), Exmouth Community Liaison Group (CLG), Finder Energy, Friends of the Earth Australia (FOEA), Greenpeace Australia Pacific (GAP), INPEX (EP), JX Nippon, KATO Energy (WA), KUFPEC, Karratha & Districts Chamber of Commerce and Industry (KDDCI), Karratha Community Liaison Group (CLG), Kyushu Electric Wheatstone, Longreach Capital Investments, Marine Tourism WA, Maritime Union of Australia (MUA), Mobil Australia Resources Company, Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Onslow Chamber of Commerce and Industry (CCI), PE Wheatstone, Protect Ningaloo, Recfishwest, Santos, Shell, Shire of Exmouth, Skye Napoleon Pty Ltd, The Wilderness Society (TWS), WA Game Fishing Association, Western Gas, – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

**The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.**

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

**Activity: Angel Subsea Infrastructure Removal**

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

Woodside Energy Consultation

Email to Australian Hydrographic Office (AHO), - 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
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- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached a vessel density map and a GIS Shape File.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
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<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>• ~1.6 km 14-inch carbon steel rigid flowline</li> <li>• ~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1<sup>st</sup> November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation

## 6.1.8 Email to Australian Communications and Media Authority (ACMA), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

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The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

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The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached a map of the submarine communication cables in the vicinity of the operational area.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m
Timing	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>

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Angel Subsea Infrastructure Removal	
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1<sup>st</sup> November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.



The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

Woodside Energy Consultation

### **6.1.9 Email to Australian Fisheries Management Authority (AFMA), Australian Southern Bluefin Industry Association (ASBTIA), Commonwealth Fisheries Association (CFA), – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP), which involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

#### **Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

#### **Operational Area / exclusion zones**

Infrastructure removal activities will occur within a 1500 m buffer zone around the Angel subsea infrastructure (the Operational Area). This area is where activity vessels can be expected to operate when undertaking infrastructure removal.

Exclusion zones, which are established for navigational safety and fishing vessels are not allowed to enter, will include:

- The existing 500 m radius Petroleum Safety Zone (PSZ) around the Angel platform, and
- A temporary 500 m radius safety exclusion zone around the construction support vessel.

There are no restrictions to other vessels within the Operational Area apart from being advised to take care during the survey vessel activities and of the 500 m exclusion zone.

#### **Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please note that Woodside has provided consultation information directly to licence holders it has assessed as 'relevant persons' for this EP, as well as relevant fishery representative bodies.

Please let us know if you require notification prior to and on completion of the proposed activities.

### Activity: Angel Subsea Infrastructure Removal Environment Plan

Angel Subsea Infrastructure Removal Environment Plan	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area / exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> </ul>



Angel Subsea Infrastructure Removal Environment Plan	
	<ul style="list-style-type: none"> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.
<b>Commonwealth Fisheries</b>	<p><b>Active in Operational Area:</b></p> <ul style="list-style-type: none"> <li>Mackerel Managed Fishery</li> <li>Pilbara Fish Trawl Interim Managed Fishery</li> <li>Part of the Pilbara Demersal Scalefish Fishery (includes trawl, trap and line fisheries)</li> <li>Pilbara Trap Managed Fishery Part of the Pilbara Demersal Scalefish Fishery (includes trawl, trap and line fisheries)</li> <li>Pilbara Line Fishery (Part of the Pilbara Demersal Scalefish Fishery, includes trawl, trap and line fisheries)</li> </ul> <p><b>Active in EMBA:</b></p> <ul style="list-style-type: none"> <li>Marine Aquarium Managed Fishery</li> </ul>

## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (Cth). Your feedback

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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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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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Regards

Woodside Energy Consultation

#### **6.1.10 Email to Australian Hydrographic Authority (AHO) – Marine Safety, – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

##### **Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

##### **Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

##### **Consultation Information**

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

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Please also find attached a vessel density map and a GIS Shape File.

**Activity: Angel Subsea Infrastructure Removal**

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> </ul>

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Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1 November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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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Regards

Woodside Energy Consultation

### 6.1.11 Email to Australian Maritime Safety Authority (AMSA) – Marine Safety, – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

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These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached a vessel density map and a GIS Shape File.

Please note that Woodside will:

- Notify the AHO no less than 4 weeks before operations commence
- Notify AMSA's Response Centre (ARC) at least 24-48 hours before operations commence
- Notify AMSA's Response Centre (ARC) when operations end
- Provide updates to both the AHO and AMSA on any material changes to planned activities
- Ensure vessels 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 (COLREGS)

Evaluate and implement adequate anti-collision measures including but not limited to additional warnings and/or lights to attract attention, offshore guard vessel/s that can monitor traffic and installation of Automatic Identification System (AIS) units.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>• Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>• Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
Infrastructure	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
Vessels	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1<sup>st</sup> November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

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[Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

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Regards

Woodside Energy Consultation

#### **6.1.12 Email to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity, marine pests, vessels, aircraft and personnel, Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries, – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

##### **Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

##### **Operational Area / exclusion zones**

Infrastructure removal activities will occur within a 1500 m buffer zone around the Angel subsea infrastructure (the Operational Area). This area is where activity vessels can be expected to operate when undertaking infrastructure removal.

Exclusion zones, which are established for navigational safety and fishing vessels are not allowed to enter, will include:

- The existing 500 m radius Petroleum Safety Zone (PSZ) around the Angel platform, and
- A temporary 500 m radius safety exclusion zone around the construction support vessel.

There are no restrictions to other vessels within the Operational Area apart from being advised to take care during the survey vessel activities and of the 500 m exclusion zone.

##### **Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please note that Woodside has provided consultation information directly to licence holders it has assessed as 'relevant persons' for this EP, as well as relevant fishery representative bodies.

Please let us know if you require notification prior to and on completion of the proposed activities.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> </ul>

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<b>Angel Subsea Infrastructure Removal</b>	
	<ul style="list-style-type: none"> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Biosecurity

With respect to the biosecurity matters, please note the following information below:

<b>Environment description</b>	
<p>The Operational Area is located in Commonwealth waters within the North-west Marine Region (NWMR) in water depths of 75-85 m deep the continental shelf. The bathymetry within the Operational Area is generally flat, which is consistent with the broader NWS Province shelf region. The seabed has a gentle (0.05°) seaward gradient, extending to a relatively steep outer slope approximately 200 to 300 km offshore in water depths of around 200 m. The continental slope then descends more rapidly from the shelf edge to depths greater than 1,000 m to the north-west.</p>	
<b>Potential IMS risk</b>	<b>IMS mitigation management</b>
Accidental introduction and establishment of invasive marine species	<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. Woodside's Invasive Marine Species Management Plan includes a risk assessment process that is applied to vessels undertaking Activities. 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>Woodside recognises the requirement to manage biosecurity risk to domestic conveyances, the requirements under the Biosecurity Control Act 2015, and the mechanism for exemption under the</p>

	<p>Biosecurity (Exposed Conveyances - Exceptions from Biosecurity Control) Determination 2016.</p> <p>Woodside notes the specified timeframes for pre-arrival reporting using the Maritime and Aircraft Reporting System (MARS), and for submission of the supplied "Questionnaire for Biosecurity Exemptions for Biosecurity Control Determination".</p> <p>Woodside works closely with our suppliers and contractors to address the risks and assure awareness of the obligations outlined above.</p>
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## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1<sup>st</sup> November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

Woodside Energy Consultation

### 6.1.13 Email to Department of Defence (DoD), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

## Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.

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- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached a defence area map in the areas surrounding the operational area.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>• Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>• Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>• Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>• ~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>• ~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>• ~56 m 10-inch stainless steel rigid tie-in spool piece</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1<sup>st</sup> November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation

### 6.1.14 Email to Department of Planning, Lands and Heritage (DPLH), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

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The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached the details of WA shipwrecks that are relevant for this EP.

Given the proximity of the proposed activities to Marine Parks, Woodside is consulting with the Department of Biodiversity, Conservation and Attractions (DBCA) for this EP. Woodside is also consulting with the Western Australian Museum and provided it with relevant shipwreck information for this EP.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m
Timing	Expected commencement date: Q3 2026 Expected finish date: Q1 2027

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Angel Subsea Infrastructure Removal	
	<p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation

### **6.1.15 Email to Department of Primary Industries and Regional Development (DPIRD), – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

#### **Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

#### **Operational Area / exclusion zones**

Infrastructure removal activities will occur within a 1500 m buffer zone around the Angel subsea infrastructure (the Operational Area). This area is where activity vessels can be expected to operate when undertaking infrastructure removal.

Exclusion zones, which are established for navigational safety and fishing vessels are not allowed to enter, will include:

- The existing 500 m radius Petroleum Safety Zone (PSZ) around the Angel platform, and
- A temporary 500 m radius safety exclusion zone around the construction support vessel.

There are no restrictions to other vessels within the Operational Area apart from being advised to take care during the survey vessel activities and of the 500 m exclusion zone.

#### **Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

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The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>

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Angel Subsea Infrastructure Removal	
	<p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.
<b>State fisheries</b>	<p><b>Active in the Operational Area</b></p> <ul style="list-style-type: none"> <li>• Mackerel Managed Fishery</li> <li>• Pilbara Fish Trawl Managed Fishery</li> <li>• Pilbara Trap Managed Fishery</li> <li>• Pilbara Line Fishery</li> </ul> <p><b>Active in the EMBA</b></p> <ul style="list-style-type: none"> <li>• Exmouth Gulf Prawn Managed Fishery</li> <li>• Mackerel Managed Fishery</li> <li>• Marine Aquarium Fish Managed Fishery</li> <li>• Nickol Bay Prawn Managed Fishery</li> <li>• Onslow Prawn Managed Fishery</li> <li>• Pilbara Crab Managed Fishery</li> <li>• Pilbara Fish Trawl Managed Fishery</li> <li>• Pilbara Trap Managed Fishery</li> <li>• Pilbara Line Fishery</li> <li>• Specimen Shell Managed Fishery</li> <li>• West Coast Deep Sea Crustacean Managed Fishery</li> </ul>

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation

### 6.1.16 Email to Department of Transport (DoT), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

#### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

#### Environment that May Be Affected (EMBA)

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The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

#### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

If there is a risk of a spill impacting State waters, Woodside will further consult the Department of Transport as outlined in the Department of Transport Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements (July 2020).

#### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia

Angel Subsea Infrastructure Removal	
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

## Feedback

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If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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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Regards

Woodside Energy Consultation

#### **6.1.17 Email to Department of Climate Change, Energy, the Environment and Water (DCCEE), – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

##### **Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

##### **Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached the details of commonwealth shipwrecks that are relevant for this EP.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>

Angel Subsea Infrastructure Removal	
	<p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation

### 6.1.18 Email to Department of Climate Change, Energy, the Environment and Water (DCCEE) – Underwater Cultural Heritage, – 26 November 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.

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- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached the details of commonwealth shipwrecks that are relevant for this EP.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>• Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>• Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>• Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>• ~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>• ~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>• ~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>• ~1.6 km 14-inch carbon steel rigid flowline</li> <li>• ~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
Vessels	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 Energy Consultation



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### 6.1.19 Email to Director of National Parks (DNP), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP), which involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

#### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

#### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

#### Consultation information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

#### Activity: Angel Subsea Infrastructure Removal EP

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m
Schedule	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> </ul>

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Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area / exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes, but is not limited to:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Australian Marine Parks (AMPs)

We note Australian Government Guidance on consultation activities and confirm that:

- The proposed activities are outside the boundaries of a proclaimed Australian Marine Park (AMP), with the closest point to the Operational Area located approximately 86 km south-west of the Commonwealth boundary of the Montebello AMP.
- We have assessed potential risks to AMPs in the development of the proposed EP and consider that there are no credible risks as part of planned activities that have potential to impact the values of the AMPs.
- The worst-case credible spill scenario assessed in this EP is the highly unlikely event of a vessel collision resulting in a release of marine diesel. Through review of hydrocarbon spill modelling, and

with consideration of a 50-ppb dissolved and 100 ppb entrained hydrocarbon threshold, the Montebello AMP may be contacted in the event of a spill.

- 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 the AMP.

Woodside is aware of and will consider the 'Petroleum Activities and Australian Marine Parks' guidance note developed and published jointly by DNP and NOPSEMA, while preparing this EP to ensure that the EP:

- Identifies and manages all impacts and risks on AMP values (including ecosystem values) to an acceptable level and has considered all options to avoid or reduce them to as low as reasonably practicable (ALARP),
- Clearly demonstrates that the activities will not be inconsistent with the North-west Marine Parks Network Management Plan 2018.

If there is a change in activities which results in an overlap or new impact to a marine park Woodside will notify DNP.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

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Regards

Woodside Energy Consultation

### **6.1.20 Email to Gascoyne Recreational Marine Users, North West Slope Trawl Fishery, Pilbara/Kimberley Recreational Marine Users, Western Deepwater Trawl Fishery, – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

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The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>• Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>• Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1 November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

## 6.1.21 Letter to Gascoyne Recreational Marine Users, Pilbara/Kimberley Recreational Marine Users – 4 October 2024

Please direct all responses/queries to:  
**Woodside Energy Feedback**  
T: 1800 442 977  
E: [feedback@woodside.com](mailto:feedback@woodside.com)



**Woodside Energy (Australia)  
Pty Ltd**  
ACN 006 923 879  
Mia Yellagonga  
11 Mount Street  
Perth WA 6000  
Australia  
T +61 8 9348 4000  
[www.woodside.com](http://www.woodside.com)

4 October 2024

[Redacted]  
[Redacted]  
[Redacted]  
[Redacted]

Dear Recreational Marine User,

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP), which involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal Environment Plan will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Operational Area / exclusion zones

Infrastructure removal activities will occur within a 1500 m buffer zone around the Angel subsea infrastructure (the Operational Area). This area is where activity vessels can be expected to be operating to undertake infrastructure removal.

Exclusion zones, which are established for navigational safety and fishing vessels are not allowed to enter, will include:

- The existing 500 m radius Petroleum Safety Zone (PSZ) around the Angel platform, and
- A temporary 500 m radius safety exclusion zone around the construction support vessel.

There are no restrictions to other vessels within the Operational Area apart from being advised to take care during the survey vessel activities and of the 500 m exclusion zone.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation information

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A **Consultation Information Sheet** is enclosed, which provides additional background on the proposed activities including summaries of potential key impacts and risks and associated management measures. This is also available on our website at [www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

**Activity: Angel Subsea Infrastructure Removal EP**

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m
Schedule	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
Operational Area / exclusion zones	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
Infrastructure	<p>Key infrastructure removal includes, but is not limited to:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> </ul>

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Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
Vessels	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

#### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our website, [www.woodside.com/contact](http://www.woodside.com/contact), by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

NOPSEMA has published a brochure titled *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. You can access it online through the QR code below.



Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit [www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities)

Regards

#### Woodside Energy Consultation



**Woodside Energy**  
Mia Yellagonga  
Karlak, 11 Mount Street  
Perth WA 6000  
Australia

T: 1800 442 977  
E: [feedback@woodside.com](mailto:feedback@woodside.com)  
[www.woodside.com](http://www.woodside.com)  
f t in y @

A Consultation Information Sheet is also attached.

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Under the fee-for-service agreement, can WAFIC please provide the consultation information to (based on active fishing (Fishcube) over the operational area):

- Mackerel Managed Fishery
- Pilbara Fish Trawl Managed Fishery
- Pilbara Trap Managed Fishery
- Pilbara Line Fishery

Kind regards,

Woodside Energy Feedback

#### Drafted email for WAFIC to send to Individual Licence Holders

Dear Licence Holders

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan. These activities include the removal of subsea infrastructure approximately 125 km north of Dampier, WA which connects three production wells to the Angel platform. These wells have ceased production, and the associated infrastructure is no longer required.

#### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

The table below provides a summary of the proposed activities under this EP. The attached Consultation 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. This is 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 where relevant.**

#### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m

Angel Subsea Infrastructure Removal	
Timing	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
Operational Area/exclusion zones	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
Infrastructure	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> </ul>

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Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

**Feedback:**

Please provide feedback specific to the proposed activities described to [\[Individual 19\]@wafic.org.au](mailto:[Individual 19]@wafic.org.au) by 1 November 2024.

Your feedback and Woodside's response will be included in the EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, Woodside will make your request known to NOPSEMA.

To receive updates on Woodside's consultation activities and its newsletter *Let's Talk – Our Plans, Your Say*, please subscribe [here](#).

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please Woodside's [website](#).

Woodside Energy Consultation

**6.1.23 Email to Chevron Australia, – 30 September 2024**

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP), which involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

**Overview**

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

**Environment that May Be Affected (EMBA)**

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities,

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and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached a GIS Shape File.

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: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> </ul>

Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **Wednesday 28 October 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

Woodside Energy Consultation

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#### 6.1.24 Email to Buurabalyji Thalanyi Aboriginal Corporation – 30 September 2024

Hi [Individual 2]

We are contacting you as the delegated representative for Buurabalyji Thalanyi Aboriginal Corporation (BTAC).

Woodside would like to consult with Buurabalyji Thalanyi Aboriginal Corporation (BTAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online from 1 October 2024 here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

We have considered the information you have already provided Woodside in relation to BTAC's cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

#### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

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- **Brochure:** [Consultation on offshore petroleum environment plans brochure.pdf \(nopsema.gov.au\)](#)
- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of BTAC, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards,

[Attachments: Summary Consultation Sheet and Attachment A]

### ATTACHMENT A

Previously Provided Information
<p>Buurabalayji Thalanyji Aboriginal Corporation (BTAC) has advised that it has a cultural obligation to care for the environmental values of Sea Country. BTAC's interests include archaeological sites identified on nearshore islands including the Montebello Islands, Barrow Island and the Mackerel Islands.</p> <p>Woodside will record BTAC's interests and cultural values in the proposed EP in the following sections:</p> <ul style="list-style-type: none"><li>- Description of Existing Environment (this includes assessing potential impact and controls)</li><li>- Cultural Features and Heritage Values</li><li>- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.</li></ul>

#### 6.1.25 Email to Kariyarra Aboriginal Corporation – 30 September 2024

Hi [Individual 3] and [Individual 4],

Happy Monday, I hope you are both well!

We are contacting Kariyarra Aboriginal Corporation (Kariyarra) in relations to an Environmental Plan.

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Woodside would like to consult with Kariyarra Aboriginal Corporation (Kariyarra) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online from 1 October 2024 here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

We have considered the information you have already provided Woodside in relation to Kariyarra's cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

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- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)

- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of Kariyarra, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachments: Summary Consultation Sheet and Attachment A]

### ATTACHMENT A

Previously Provided Information
<p>Kariyarra Aboriginal Corporation (Kariyarra) has outlined its Sea Country rights and duties, including:</p> <ul style="list-style-type: none"><li>- looking after and protecting Sea Country</li><li>- fishing, trapping and crabbing</li><li>- catching turtle</li><li>- hunting dugong</li><li>- using stingray barbs for spears</li><li>- collecting shellfish</li><li>- the protection of Sea Country and totems such as mythic snakes.</li></ul> <p>Woodside will record Kariyarra's interests and cultural values in the proposed EP in the following sections:</p> <ul style="list-style-type: none"><li>- Description of Existing Environment (this includes assessing potential impact and controls)</li><li>- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)</li><li>- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.</li></ul>
<p>Kariyarra has noted that there are potential impacts on coastal landforms and coastal native vegetation.</p> <p>Woodside will record Kariyarra's interests and cultural values in the proposed EP in the following sections:</p> <ul style="list-style-type: none"><li>- Description of Existing Environment (this includes assessing potential impact and controls)</li><li>- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)</li></ul>

- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

Kariyarra has noted there is tangible and intangible heritage associated with the coast and the ocean.

Woodside will record Kariyarra's cultural and environmental values in the proposed EP in the following sections:

- Description of Existing Environment (this includes assessing potential impact and controls)
- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)
- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

#### 6.1.26 Email to Murujuga Aboriginal Corporation – 30 September 2024

Hi [Individual 5]

We are contacting you as the delegated representative for Murujuga Aboriginal Corporation (MAC).

Woodside would like to consult with Murujuga Aboriginal Corporation (MAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online from 1 October 2024 here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity

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- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

We have considered the information you have already provided Woodside in relation to MAC's cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

#### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

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- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#)

#### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of MAC, Traditional Owners and other people and organisations who may be interested.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards,

[Attachment: Summary Consultation Sheet and Attachment A]

#### ATTACHMENT A

Previously Provided Information
Murujuga Aboriginal Corporation (Murujuga) has noted there is a potential impact on Jinna (Songlines).

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Woodside will record Murujuga's cultural and environmental values in the proposed EP in the following sections:

- Description of Existing Environment (this includes assessing potential impact and controls)
- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)
- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

Murujuga has stated that any development could potentially affect the natural movement, migration and/or other behaviour of marine species, and may have an impact on the cultural interpretation of the seasonal landscape, seascape and associated cultural behaviours.

Woodside will record Murujuga's cultural and environmental values in the proposed EP in the following sections:

- Description of Existing Environment (this includes assessing potential impact and controls)
- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)
- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

#### 6.1.27 Email to Nganhurra Thanardi Garrbu Aboriginal Corporation – 30 September 2024

Hi [Individual 6],

I hope you are well!

We are contacting Nganhurra Thanardi Garrbu Aboriginal Corporation (NTGAC) in relation to an Environmental Plan.

Woodside would like to consult with (NTGAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online from 1 October 2024 here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

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### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

We have considered the information you have already provided Woodside in relation to NTGAC's cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

### Further information about NOPSEMA

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- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of the NTGAC, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.28 Email to Ngarluma Aboriginal Corporation – 30 September 2024

Dear [individual 7] and [Individual 8]

Woodside would like to advise and consult with Ngarluma Aboriginal Corporation (NAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. NAC's feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform NAC about our plans for the activity
- invite NAC to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather NAC's feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- NAC's concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with NAC to understand how you would like your information to be managed. If NAC would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our website, by calling us on 1800 442 977, or directly to me.

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- **Guideline:** Guideline: Consultation in the course of preparing an environment plan (nopsema.gov.au)
- **Policy:** Draft policy for managing gender-restricted information PL2098.pdf (nopsema.gov.au).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of the NAC, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.29 Email to Robe River Kuruma Aboriginal Corporation – 30 September 2024

Hi [Individual 9] and [Individual 10],

I hope you are both well.

We are contacting Robe River Kuruma Aboriginal Corporation (RRKAC) in relation to an Environmental Plan.

Woodside would like to consult with (RRKAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

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### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

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### Ongoing Feedback

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Please feel free to forward this email and the attached document to members of RRRAC, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.30 Email to Wirrawandi Aboriginal Corporation – 30 September 2024

Hi [Individual 11],

Happy Monday! As discussed, please see below information relating to another EP Woodside have open for feedback.

We are contacting Wirrawandi Aboriginal Corporation (WAC) in relation to an Environmental Plan.

Woodside would like to consult with (WAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977 or directly to me.

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### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of WAC, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.31 Email to Yindjibarndi Aboriginal Corporation – 30 September 2024

Hi [Individual 12],

I hope you had an enjoyable weekend with the family.

We are contacting you as the delegated representative for Yindjibarndi Aboriginal Corporation.

Woodside would like to consult with Yindjibarndi Aboriginal Corporation as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#),

with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

### Further information about NOPSEMA

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- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#)

### Ongoing Feedback

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Please feel free to forward this email and the attached document to members of the Yindjibarndi Aboriginal Corporation, Traditional Owners and other people and organisations who may be interested.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.32 Email to Yinggarda Aboriginal Corporation – 1 October 2024

Dear [Individual 13],

Woodside would like to consult with Yinggarda Aboriginal Corporation as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about the activity

We have considered the information you have already provided Woodside in relation to Yinggarda Aboriginal Corporation's cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about the activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

#### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

- **Brochure: Consultation on offshore petroleum environment plans**  
[brochure.pdf \(nopsema.gov.au\)](#)

- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of the Yinggarda Aboriginal Corporation, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachments: Summary Consultation Sheet and Attachment A]

### ATTACHMENT A

Previously Provided Information
<p>Yinggarda Aboriginal Corporation (Yinggarda) has noted that there are potential impacts to the environment, and that marine plants and animals (including whales and turtles), and the environment generally, are inexorably linked to their culture.</p>
<p>Woodside will record Yinggarda's cultural and environmental values in the proposed EP in the following sections:</p> <ul style="list-style-type: none"><li>- Description of Existing Environment (this includes assessing potential impact and controls)</li><li>- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)</li><li>- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.</li></ul>

#### 6.1.33 Email to Kimberley Land Council – 30 September 2024

Hi [Individual 14]

Two in one week but I can assure you there will be no more this week.

We are contacting you as the delegated representative for the Kimberley Land Council (KLC).

Woodside would like to consult with Kimberley Land Council (KLC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

- **Brochure:** [Consultation on offshore petroleum environment plans brochure.pdf \(nopsema.gov.au\)](#)
- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

### Ongoing Feedback

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Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of KLC, Traditional Owners and other people and organisations who may be interested.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards,

[Attachment: Summary Consultation Sheet]

### 6.1.34 Email to Yamatji Marlpa Aboriginal Corporation – 30 September 2024

Hi All,

We are contacting you as the delegated representative for Yamatji Marlpa Aboriginal Corporation (YMAC).

Woodside would like to consult with Yamatji Marlpa Aboriginal Corporation (YMAC) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this

activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), by calling us on 1800 442 977, or directly to me.

#### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

- **Brochure:** [Consultation on offshore petroleum environment plans brochure.pdf \(nopsema.gov.au\)](#)
- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#).

#### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of YMAC, Traditional Owners and other people and organisations who may be interested.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.35 Email to Ngarluma Yindjibarndi Foundation Ltd – 30 September 2024

Dear [individual 12] and [Individual 15]

Woodside would like to consult with Ngarluma Yindjibarndi Foundation Ltd (NYFL) as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. NYFL's feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

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- inform NYFL about our plans for the activity
- invite NYFL to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact NYFL's cultural values, interests, and activities
- Protection of the environment and its relationship to NYFL's cultural values
- NYFL's concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

Please let us know your preferred method of consultation including whether you would like to meet face to face. We welcome the opportunity to speak with Elders, office holders and other interested parties about this activity. Woodside provides various forms of assistance to organisations, Traditional Custodian groups and individuals to support participation in consultation.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with NYFL to understand how you would like your information to be managed. If NYFL would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our website, by calling us on 1800 442 977, or directly to me.

### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

- **Brochure:** Consultation on offshore petroleum environment plans brochure.pdf ([nopsema.gov.au](http://nopsema.gov.au))
- **Guideline:** Guideline: Consultation in the course of preparing an environment plan ([nopsema.gov.au](http://nopsema.gov.au))
- **Policy:** Draft policy for managing gender-restricted information PL2098.pdf ([nopsema.gov.au](http://nopsema.gov.au)).

### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of NYFL, Traditional Owners and other people and organisations who may be interested.

We also acknowledge our discussions relating to the framework agreement have been ongoing and appreciate that these discussions will progress in parallel with consultation for this EP.

I look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachment: Summary Consultation Sheet]

### 6.1.36 Email to Save Our Songlines – 30 September 2024

Dear [Individual 16],

Woodside understands all communication to [Individual 1] and Save Our Songlines should be directed to you. Please see below for [Individual 1] attention.

Dear [Individual 1],

Woodside would like to consult with Save Our Songlines as a relevant stakeholder that may be affected by the **Angel Subsea Infrastructure Removal** (the activity).

Consultation for this activity closes on **Friday 1 November 2024**. Your feedback, opinions and comments provided by this date will be reflected in the Environment Plan and considered by NOPSEMA.

The purpose of this email is to:

- inform you about our plans for the activity
- invite you to submit feedback for the activity
- provide an opportunity to discuss the activity
- discuss further ways to consult and engage for the activity.

#### Overview of the activity

The attached Summary Information Sheet has been developed for a First Nations audience and provides a high-level overview of the activity, including the Environment that May Be Affected (EMBA) map. We also have a Consultation Information Sheet, accessible online here [Consultation Activities - Woodside Energy](#), with further details including an assessment of the potential impacts and risks relevant to the activity, as well as mitigation and management measures.

#### Consultation with Woodside

We'd like to gather your feedback about:

- How the activity could impact your cultural values, interests, and activities
- Protection of the environment and its relationship to your cultural values
- Your concerns about the proposed activity
- Other elements we should consider in the Environment Plan
- Any other individuals, groups, or organisations we should talk to about this activity

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We have considered the information you have already provided Woodside in relation to Save Our Songlines' cultural values that we consider relevant to this activity, which is outlined in **Attachment A**. If there are any changes or additional information you would like Woodside to consider as part of this EP submission, please let us know by **Friday 1 November 2024**.

We note your previously stated preference for consultation to occur in written format (as set out in an email dated 10 April 2024). Woodside also welcomes the opportunity to meet face to face.

Woodside manages gender-restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide the information directly to NOPSEMA, please do so.

Information can be sent to [feedback@woodside.com](mailto:feedback@woodside.com), or provided via the feedback form on our [website](#), or by calling us on 1800 442 977.

#### Further information about NOPSEMA

Feedback can also be submitted directly to NOPSEMA by phoning (08) 6188 8700 or via email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au).

The following NOPSEMA publications may be of assistance to support understanding of the requirements to participate in consultation for Commonwealth EPs:

- **Brochure:** [Consultation on offshore petroleum environment plans brochure.pdf \(nopsema.gov.au\)](#)
- **Guideline:** [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)
- **Policy:** [Draft policy for managing gender-restricted information PL2098.pdf \(nopsema.gov.au\)](#)

#### Ongoing Feedback

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP. Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please feel free to forward this email and the attached document to members of Save Our Songlines, Traditional Owners and other people and organisations who may be interested.

We look forward to your response and please feel free to call and send through guidance on next steps.

Kind regards

[Attachments: Summary Consultation Sheet and Attachment A]

#### ATTACHMENT A

##### Previously Provided Information

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Save Our Songlines has noted cultural features associated with whales, as well as marine mammals, seagrass, and the meeting of freshwater and saltwater was demonstrated.

Woodside will record Save Our Songlines' cultural and environmental values in the proposed EP in the following sections:

- Description of Existing Environment (this includes assessing potential impact and controls)
- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)
- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

Save Our Songlines has noted there are cultural features associated with Songlines, dreaming and energy lines.

Woodside will record Save Our Songlines' cultural and environmental values in the proposed EP in the following sections:

- Description of Existing Environment (this includes assessing potential impact and controls)
- Cultural Features and Heritage Values (this includes cultural features and heritage values, marine species and habitats)
- Environmental Impact and Risk Assessment, Performance Outcomes, Standards, and Measurement Criteria.

### 6.1.37 Email to Western Australian Museum (WAM), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

#### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

#### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Please also find attached the details of WA shipwrecks that are relevant for this EP.

As per the *Underwater Cultural Heritage Act 2018 (Cwth)*, Woodside will contact the Commonwealth regulator, the Department of Climate Change, Energy, the Environment and Water (DCCEEW), regarding this EP.

Woodside also refers to the Commonwealth Government's Underwater Cultural Heritage (UCH) Guidance document regarding assessments and the draft Guidelines for Working in Near and Offshore Environment to Protect Underwater Cultural Heritage.

### Activity: Angel Subsea Infrastructure Removal

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>

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Angel Subsea Infrastructure Removal	
	<p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>• ~1.6 km 14-inch carbon steel rigid flowline</li> <li>• ~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
<b>Vessels</b>	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1st November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

### 6.1.38 Email to Shire of Ashburton, – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

### Overview

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The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.
- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

Woodside is required to manage environmental impacts and risks to the 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 2023 (Environment Regulations), through the implementation of the EP. Woodside will submit the proposed EP to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

### Preparedness and Response

In the course of developing the EP, Woodside will develop the oil spill preparedness and response position tailored to this activity including the drafting of the Oil Pollution First Strike Plan which details the potential impacts, notifications and response mitigations that may be executed to manage an emergency event. Woodside consults with the relevant jurisdictional authorities and controlling agencies, including the Western Australian Department of Transport (DoT), the Australian Maritime Safety Agency (AMSA) and, in some circumstances, relevant port authorities, during the plan drafting process to inform mitigation management measures in place for the proposed activities. Woodside may also consult with other relevant external emergency management agencies, including LEMC, to ensure emergency management plans are aligned with effective outcomes.

In addition to the jurisdictional authorities and controlling agencies, the plan includes standard emergency notifications to agencies including NOPSEMA, the Department of Climate Change, Energy, the Environment and Water (DCCEEW), the Director of National Parks (DNP), and the WA Department of Biodiversity, Conservation and Attractions (DBCA). Where applicable, notification information for relevant Shires is also included in the Oil Pollution First Strike Plan.

### Cultural heritage

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.

### Consultation information

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.

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This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

**Activity: Angel Subsea Infrastructure Removal**

Angel Subsea Infrastructure Removal	
<b>Summary</b>	Removal of subsea equipment from Angel field
<b>Permit Area</b>	Activities will occur within Production License WA-3-L
<b>Location</b>	125 km north of Dampier, Western Australia
<b>Approx. Water Depth (m)</b>	75-85 m
<b>Timing</b>	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>Flowline removal – up to two months</li> <li>Umbilical removal – up to one month</li> </ul>
<b>Operational Area/exclusion zones</b>	<ul style="list-style-type: none"> <li>Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>
<b>Infrastructure</b>	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>~1.6 km 14-inch carbon steel rigid flowline</li> <li>~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> </ul>

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Angel Subsea Infrastructure Removal	
	<ul style="list-style-type: none"> <li>Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
Vessels	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

## Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [Feedback@woodside.com](mailto:Feedback@woodside.com), via phone call at 1800 442 977 or via the feedback form on our website by 1st November 2024.

Your feedback and our response will be included in our EP, 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

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, including during its assessment and once accepted, in accordance with the intended outcome of consultation.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published the brochure [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 let us know if the Shire would like to receive start- and end-of-activity notifications.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Regards

Woodside Energy Consultation

### 6.1.39 Email to Australian Institute of Marine Science (AIMS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Western Australian Marine Science Institution (WAMSI), – 30 September 2024

Woodside is planning to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The Angel Subsea platform is in Production License WA-3-L, located in Commonwealth waters, approximately 125 kilometres (km) north of Dampier, Western Australia.

#### Overview

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier, in water depths between approximately 75 metres (m) and 85 m. This infrastructure connects three production wells to the Angel platform, however these production wells have ceased production and will be permanently plugged and abandoned under a separate EP.

The Angel Subsea Infrastructure Removal EP will cover the following activities:

- Removal of three 14-inch flowlines between the Angel platform and the wells.

- Removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells.
- Removal of other, smaller equipment associated with the flowlines and umbilicals.
- Capping the ends where the flowlines and umbilicals connect to the Angel platform.

These activities are planned to commence in Q3 2026 and are expected to be completed before the end of Q1, 2027. All removed infrastructure will be returned to shore and recycled where practicable.

### Environment that May Be Affected (EMBA)

The EMBA is the largest area where activities could potentially have a direct or indirect impact on the environment. The broadest extent of the EMBA takes into consideration planned and unplanned activities, and for these environment plans, is determined by modelling a release of hydrocarbons from a vessel collision. A release of this kind is highly unlikely to occur.

The EMBA models the merged area of many possible paths that a hydrocarbon release could travel depending on factors including the weather and ocean conditions at the time of the release. This means in the highly unlikely event a vessel collision does occur, the whole EMBA will not be affected.

### Consultation Information

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. This is also available on our [website](#). Here you can also subscribe to our newsletter *Let's Talk – Our Plans, Your Say* and to receive updates on our consultation activities.

Woodside is seeking your advice regarding any research activities that your institution may be undertaking that may overlap with our proposed activities.

### Activity: Angel Subsea Infrastructure Removal Environment Plan

Angel Subsea Infrastructure Removal	
Summary	Removal of subsea equipment from Angel field
Permit Area	Activities will occur within Production License WA-3-L
Location	125 km north of Dampier, Western Australia
Approx. Water Depth (m)	75-85 m
Timing	<p>Expected commencement date: Q3 2026</p> <p>Expected finish date: Q1 2027</p> <p>Estimated durations:</p> <ul style="list-style-type: none"> <li>• Flowline removal – up to two months</li> <li>• Umbilical removal – up to one month</li> </ul>
Operational Area/exclusion zones	<ul style="list-style-type: none"> <li>• Operational Area includes 1500 m buffer around the Angel subsea infrastructure.</li> <li>• Temporary exclusion zone includes a 500 m buffer around the construction support vessel.</li> <li>• Petroleum Safety Zone includes a 500 m radius around the Angel platform.</li> </ul>

Angel Subsea Infrastructure Removal	
Infrastructure	<p>Key infrastructure removal includes:</p> <p>Angel platform to AP 2:</p> <ul style="list-style-type: none"> <li>• ~2.1 km 14-inch carbon steel rigid flowline (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>• ~2.5 km 5-inch flexible umbilical with umbilical termination assembly (UTA) and UTA steel foundation</li> <li>• ~56 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 3:</p> <ul style="list-style-type: none"> <li>• ~1.6 km 14-inch carbon steel rigid flowline</li> <li>• ~1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~60 m 10-inch stainless steel rigid tie-in spool piece</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul> <p>Angel platform to AP 4:</p> <ul style="list-style-type: none"> <li>• ~2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece)</li> <li>• ~2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation</li> <li>• ~42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>• Ancillary equipment (e.g. jumpers and stabilisation materials)</li> <li>• Plug and cap installation in remaining flowline and umbilical near Angel platform.</li> </ul>
Vessels	Operations support vessels, construction support vessels and helicopters will be used to undertake the removal of subsea infrastructure.

### Feedback

If you have feedback specific to the proposed activities described under the proposed EP, we welcome your feedback via email at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com), via phone call at 1800 442 977 or via the feedback form on our [website](#) by **1 November 2024**.

Your feedback and our response will be included in our EP, 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 2023* (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 the brochure [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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Regards

Woodside Energy Consultation

## 6.2 Follow Up Initial Consultation

**6.2.1 Email to Australasian Centre for Corporate Responsibility (ACCR), Pilbara Ports Association (PPA), Australian Border Force (ABF), Australian Conservation Foundation (ACF), Australian Energy Producers (AEP), Australian Institute of Marine Science (AIMS), Australian Marine Conservation Society (AMCS), Cape Conservation Group (CCG), City of Karratha, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Conservation Council of WA (CCWA), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Defence (DoD), Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), Department of Industry, Science and Resources (DISR), Department of Primary Industries and Regional Development (DPIRD), Department of Transport (DoT), Exmouth Chamber of Commerce and Industry (CCI), Exmouth Community Liaison Group (CLG), Friends of the Earth Australia (FOEA), Greenpeace Australia Pacific (GAP), INPEX (EP), JX Nippon, KATO Energy (WA), KUFPEC, Karratha & Districts Chamber of Commerce and Industry (KDDCI), Karratha Community Liaison Group (CLG), Kyushu Electric Wheatstone, Longreach Capital Investments, Marine Tourism WA, Maritime Union of Australia (MUA), Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Onslow Chamber of Commerce and Industry (CCI), PE Wheatstone, Protect Ningaloo, Santos, Shell, Shire of Exmouth, Skye Napoleon Pty Ltd, The Wilderness Society (TWS), WA Game Fishing Association, Western Australian Marine Science Institution (WAMSI), Western Gas, – 17 October 2024**

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

### **6.2.2 Email to Australian Maritime Safety Authority (AMSA) – Marine Safety, – 17 October 2024**

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

### **6.2.3 Email to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity, marine pests, vessels, aircraft and personnel, Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries, – 17 October 2024**

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

#### 6.2.4 Email to Department of Defence (DoD), – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

#### 6.2.5 Email to Department of Planning, Lands and Heritage (DPLH), – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

#### **6.2.6 Email to Department of Primary Industries and Regional Development (DPIRD), – 17 October 2024**

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our website.

Regards

Woodside Energy Consultation

#### **6.2.7 Email to Department of Climate Change, Energy, the Environment and Water (DCCEEW), – 17 October 2024**

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

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Regards

Woodside Energy Consultation

### 6.2.8 Email to Director of National Parks (DNP), – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

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Regards

Woodside Energy Consultation

## 6.2.9 Letter to Gascoyne Recreational Marine Users, Pilbara/Kimberley Recreational Marine Users – 23 October 2024

Please direct all responses/queries to:  
**Woodside Energy Feedback**  
T: 1800 442 977  
E: [feedback@woodside.com](mailto:feedback@woodside.com)



Woodside Energy (Australia)  
Pty Ltd  
ACN 006 923 879  
Mia Yellagonga  
11 Mount Street  
Perth WA 6000  
Australia  
T +61 8 9348 4000  
[www.woodside.com](http://www.woodside.com)

23 October 2024



Dear Stakeholder

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the Consultation Information Sheet, which is available via the QR code below.



If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation**



**Woodside Energy**  
Mia Yellagonga  
Karlak, 11 Mount Street  
Perth WA 6000  
Australia

T: 1800 442 977  
E: [feedback@woodside.com](mailto:feedback@woodside.com)  
[www.woodside.com](http://www.woodside.com)  
f t in y o

#### 6.2.10 Email to Chevron Australia, – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation

#### 6.2.11 Email to Western Australian Museum (WAM), – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

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Regards

Woodside Energy Consultation

## 6.2.12 Email to Shire of Ashburton, – 17 October 2024

Woodside previously consulted you on its plans to submit the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's website.

If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **1 November 2024**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our website.

Regards

Woodside Energy Consultation

## 6.3 Activity update

### 6.3.1 Consultation information sheet



# ANGEL SUBSEA INFRASTRUCTURE REMOVAL ENVIRONMENT PLAN

## 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 could 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 the proposed activity is 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 to an acceptable level. 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 activity, in accordance with the intended outcome of consultation.

### Overview

Woodside is submitting the Angel Subsea Infrastructure Removal Environment Plan (EP) in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth)*.

The EP covers removal of subsea flowlines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure), from the Angel field.

This EP will remove redundant Angel subsea infrastructure which connects three production wells to the Angel platform. The production wells have ceased production and will be permanently plugged and abandoned under the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA-03 Well Intervention EP.

Woodside is decommissioning redundant equipment in its operating fields. Infrastructure that remains in the Angel field will continue to be managed under the Angel Operations EP.

### Location

The Angel subsea infrastructure is located around the Angel production platform in Commonwealth waters, approximately 125 km north of Dampier as shown in **Figure 1**. The Angel subsea infrastructure is in water depths between approximately 77 m and 85 m. The locations of the Angel subsea infrastructure are in **Table 2**.

### Proposed activity

Activities under this EP include:

- The removal of three 14-inch rigid flowlines between the Angel platform and the AP 2, AP 3, and AP 4 wells. The flowlines are carbon steel (with internal stainless-steel liner) and coated with concrete to provide stabilisation on the seabed.
- The removal of three 5-inch flexible electro-hydraulic umbilicals between the Angel platform and the AP 2, AP 3, and AP 4 wells. The umbilicals are plastic coated and contain electrical and hydraulic cores.

- The removal of ancillary equipment, such as umbilical termination assemblies (UTAs) and their associated steel foundations, rigid tie-in spool pieces, hydraulic flying leads (HFLs), electrical flying leads (EFLs) and stabilisation materials, such as grout bags, sandbags and concrete mattresses.
- Installation of permanent plugs / caps to preserve fluids within flowlines / umbilicals as close as practicable to the Angel platform.

Removal of Angel well infrastructure has been included as an optional activity under this EP and includes removal of three wellheads and subsea Christmas trees (AP 2, AP 3 and AP 4) using the construction support vessel. Removal of this well infrastructure is also an optional activity using the mobile offshore drilling unit in the Northwest Shelf Phase 1 Well Plug and Abandonment and TPA03 Well Intervention Environment Plan.

The subsea infrastructure tying the three Angel wells back to the Angel facility will be flushed and filled with treated seawater under the Angel Operations EP in Q2 2025. Decommissioning of the Angel subsea infrastructure in this EP is contingent on successful flushing of the three Angel rigid flowlines having been completed.

All removed Angel subsea infrastructure will be returned to shore and recycled where practicable.

### Timing and duration

- Removal of Angel subsea infrastructure: approximately 3 months between around Q3 2026 and Q1 2027.
- Optional removal of Angel well infrastructure by construction support vessel: approximately 1-5 days per well between around Q3 2026 and Q1 2027.

The timing and duration of the Angel subsea infrastructure removal activity are subject to vessel availability, weather and other unforeseen circumstances.

### Vessels

The removal activities will be done by a construction support vessel. The construction support vessel will hold equipment and tools, such as remotely operated vehicles, needed to remove the Angel subsea infrastructure. The construction support vessel may be supported by other vessels.

Helicopters may be used to transfer crew and equipment between the construction support vessel and the shore.



### Communications with mariners

The location of the Angel platform and the AP 2, AP 3, and AP 4 wells are marked on nautical charts. A 500 m radius gazetted Petroleum Safety Zone surrounds the Angel platform. A 1500 m radius Operational Area will apply around the Angel subsea infrastructure during the removal activities. This includes a temporary 500 m exclusion zone around the construction support vessel to manage vessel movements.

Marine notices will be issued prior to activity commencement to alert vessels which may be operating in waters nearby.

### Joint Venture

Woodside operates the facilities in WA-1-L, WA-3-L, and WA-5-L on behalf of the Northwest Shelf Joint Venture. The participants in the Northwest Shelf Joint Venture are:

- Woodside Energy Ltd
- Woodside Energy (Northwest Shelf) Pty Ltd
- BP Developments Australia Pty Ltd
- Chevron Australia Pty Ltd
- Japan Australia LNG (MIMI) Pty Ltd
- CNOOC NWS Private Ltd
- Shell Australia Pty Ltd.

### Feedback

Woodside welcomes your feedback by 26 March 2025

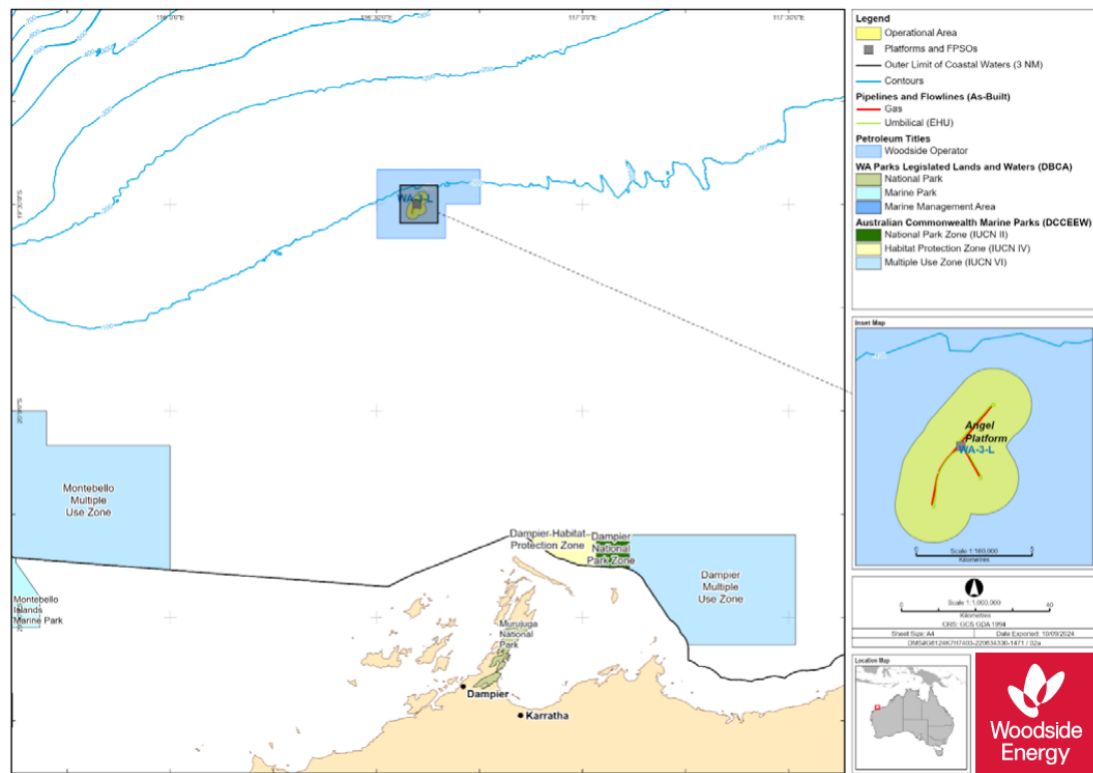


Figure 1: Operational Area for the Angel Subsea Infrastructure Removal EP

Table 2. Approximate locations of equipment in the Angel field

Wellhead	Approximate Water Depth (m)	Latitude	Longitude	Titles
Angel Platform	-80	19° 29' 55" S	116° 35' 53" E	WA-3-L
AP 2 rigid flowline (runs from AP 2 well to the platform)	-85	19° 29' 0" S	116° 36' 37" E	WA-3-L
AP 3 rigid flowline (runs from AP 3 well to the platform)	-78	19° 30' 38" S	116° 36' 19" E	WA-3-L
AP 4 rigid flowline (runs from AP 4 well to the platform)	-77	19° 31' 18" S	116° 35' 13" E	WA-3-L

### Environment That May Be Affected (EMBA)

The EMBA is a mathematically modelled area of the largest possible spatial extent where the Angel subsea infrastructure removal activities could potentially have an environmental consequence. The broadest extent of the model takes into consideration planned and unplanned activities. For the EP, the EMBA has been developed combining numerous modelling outputs based on scenarios involving a release of hydrocarbons to the environment. These scenarios are highly unlikely to occur. The most credible modelling scenarios that inform the EMBA are based on hydrocarbon release because of a vessel collision. The EMBA is depicted in **Figure 2**.

The EMBA does not represent the extent of the predicted impact of a release of hydrocarbons. Rather, the EMBA represents the merged area of many possible paths that a hydrocarbon release could travel, depending on factors including the weather and ocean conditions at the time of the release. This means that in the highly unlikely event that a hydrocarbon release does occur, the whole EMBA will not be affected. Only a minimal, specific part of the EMBA will be affected and that portion will only be known at the time of the release.

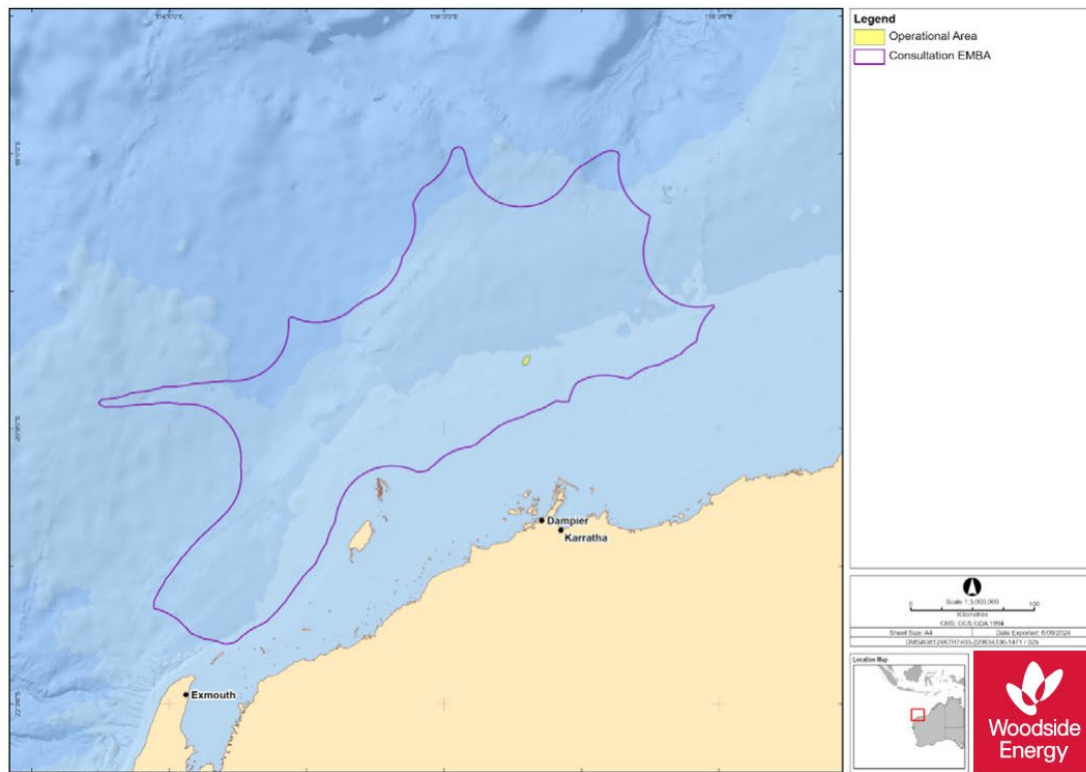


Figure 2. Environment that May Be Affected for the Angel subsea infrastructure removal activities



Table 1. Activity Summary

Angel Subsea Infrastructure Removal Environment Plan	
<b>Petroleum title</b>	<ul style="list-style-type: none"> <li>Production licence WA-3-L</li> </ul>
<b>Approximate water depth</b>	<ul style="list-style-type: none"> <li>77 m – 85 m</li> </ul>
<b>Activity summary</b>	<ul style="list-style-type: none"> <li>Removal of three 14-inch rigid flowlines</li> <li>Removal of three 5-inch flexible umbilicals</li> <li>Removal of ancillary structures</li> <li>Installation of plugs and caps for rigid flowlines / flexible umbilicals (close to platform)</li> <li>Optional removal of three wellheads and subsea trees (AP 2, AP 3 and AP 4), which may be recovered following plug and abandonment activities</li> </ul>
<b>Infrastructure</b>	<p>Angel platform to AP 2 well:</p> <ul style="list-style-type: none"> <li>-2.1 km 14-inch carbon steel rigid flowline removal (includes two mid-line 14-inch rigid tie-in spool pieces)</li> <li>-2.5 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-56 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment removal (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul> <p>Angel platform to AP 3 well:</p> <ul style="list-style-type: none"> <li>-1.6 km 14-inch carbon steel rigid flowline removal</li> <li>-1.9 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-60 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment (e.g. jumpers and stabilisation materials) removal</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul> <p>Angel platform to AP 4 well:</p> <ul style="list-style-type: none"> <li>-2.7 km 14-inch carbon steel rigid flowline (includes one 14-inch mid-line rigid tie-in spool piece) removal</li> <li>-2.9 km 5-inch flexible umbilical with UTA and UTA steel foundation removal</li> <li>-42 m 10-inch stainless steel rigid tie-in spool piece removal</li> <li>Ancillary equipment removal (e.g. jumpers and stabilisation materials)</li> <li>Plug and cap installation in remaining flowline and umbilical near Angel platform</li> </ul>
<b>Commencement date</b>	Expected to commence around Q3 2026
<b>Finish date</b>	Expected to be completed by around the end of Q1 2027
<b>Estimated duration</b>	<ul style="list-style-type: none"> <li>Rigid flowline removal: up to approximately two months</li> <li>Flexible umbilical removal: up to approximately one month</li> <li>Optional removal of well infrastructure: approximately 1-5 days per well</li> </ul>
<b>Operational Area and exclusion zone</b>	<ul style="list-style-type: none"> <li>Operational Area: 1500 m around the Angel subsea infrastructure</li> <li>Temporary exclusion zone: 500 m around the construction support vessel</li> <li>Petroleum Safety Zone: 500 m radius around the Angel platform</li> </ul>
<b>Vessels</b>	<ul style="list-style-type: none"> <li>Construction support vessel</li> <li>Support vessels</li> <li>Helicopters</li> </ul>
<b>Distance to nearest town</b>	Operational Area is approximately 125 km north of Dampier
<b>Distance to nearest marine park / nature reserve</b>	Dampier Marine Park, approximately 90 km south of the Operational Area

### Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the environment arising from the Angel subsea infrastructure removal activity. Several mitigation and management measures for the activity are outlined in **Table 3**. Further details will be provided in the EP.

**Table 3. Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity**

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Planned Activities (Routine and Non-routine)</b>			
<b>Physical presence: interaction with other marine users</b>	<ul style="list-style-type: none"> <li>A construction support vessel will be used to remove the Angel subsea infrastructure, supported by other vessels and helicopter as required.</li> <li>The physical presence and movement of project vessels within the Operational Area has the potential to interact other marine users.</li> </ul>	<ul style="list-style-type: none"> <li>There is the potential for localised interaction with commercial fishing activities and commercial shipping.</li> <li>Due to the offshore location and the localised nature of the activity, if there is an interaction it is expected to be negligible with no lasting effect.</li> </ul>	<ul style="list-style-type: none"> <li>Vessels adhere to regulatory requirements for navigational safety</li> <li>Establish a temporary 500 m exclusion zone around the construction support vessel which is communicated to marine users.</li> <li>Notify relevant government departments, and fishing industry representative bodies prior to commencement and on completion of activities.</li> <li>Notify the Australian Hydrographic Office prior to commencement of the activity so that marine users are aware of the activity.</li> <li>Consult with relevant persons so they are informed of the proposed activities.</li> </ul>
<b>Physical presence: disturbance to benthic habitat</b>	<ul style="list-style-type: none"> <li>Subsea cleaning and preparation activities may be done using high-pressure water and brushes on Remotely Operated Vehicles.</li> <li>Subsea infrastructure cutting and removal may result in a localised increase in turbidity and some sediment relocation.</li> <li>Use of remotely operated and placement of equipment on the seabed will disturb small areas of benthic habitat.</li> </ul>	<ul style="list-style-type: none"> <li>The Operational Area consists of sandy substrate, with marine growth on the subsea infrastructure.</li> <li>Activities will be localised and of short duration, hence physical impacts to the seabed are expected to be negligible.</li> </ul>	<ul style="list-style-type: none"> <li>No planned anchoring.</li> <li>Check that all equipment has been removed.</li> <li>Subsea infrastructure to be marked on navigational charts until removal.</li> <li>Comply with requirements of Underwater Cultural Heritage Act 2018 (Cth).</li> </ul>
<b>Routine acoustic emissions: vessels, helicopters, and mechanical equipment operation</b>	<ul style="list-style-type: none"> <li>The operation of the project vessels and positioning equipment will generate noise both in the air and underwater due to the operation of thruster engines, propellers, and the use of cutting tools subsea.</li> <li>Helicopter noise within the operational area will occur during helicopter take-off and landing.</li> </ul>	<ul style="list-style-type: none"> <li>Elevated underwater noise may affect marine fauna, including marine mammals, turtles, and fish in the following ways: <ul style="list-style-type: none"> <li>Through short-term behavioural disturbance.</li> <li>By masking or interfering with other biologically important sounds.</li> </ul> </li> <li>The Operational Area does not overlap biologically important areas for fauna sensitive to underwater noise (e.g. cetaceans). The noise emissions during the activity will not credibly cause injury to fauna, but may result in localised, short-term behavioural disturbance and masking.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for interactions with marine fauna to prevent adverse interactions.</li> </ul>
<b>Routine discharges: marine wastewater</b>	<ul style="list-style-type: none"> <li>Routine discharge of sewage, grey water and putrescible wastes to marine environment from project vessels within the Operational Area.</li> <li>Routine discharge of deck and bilge water to marine environment from project vessels within the Operational Area.</li> </ul>	<ul style="list-style-type: none"> <li>Short-term, localised decrease in water quality around the vessel.</li> </ul>	<ul style="list-style-type: none"> <li>Marine discharges will be managed according to regulatory requirements.</li> <li>Chemicals selected with the lowest reasonably practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process.</li> </ul>

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Discharges: decommissioning activities</b>	<ul style="list-style-type: none"> <li>During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released to the surrounding environment. <ul style="list-style-type: none"> <li>Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</li> </ul> </li> <li>Small amounts of cement spall will be discharged during rigid flowline cutting.</li> <li>Chemical use may be required to remove marine growth and calcium/scale buildup.</li> </ul>	<ul style="list-style-type: none"> <li>Short-term, localised decrease in water quality from the release of small volumes of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota. <ul style="list-style-type: none"> <li>Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</li> </ul> </li> <li>Localised, negligible, changes to sediment quality at the cut locations</li> </ul>	<ul style="list-style-type: none"> <li>All chemicals that are planned to be discharged into the marine environment reduced to ALARP and approved through the Woodside chemical assessment process.</li> </ul>
<b>Atmospheric emissions and greenhouse gas (GHG) emissions</b>	<ul style="list-style-type: none"> <li>Atmospheric emissions and GHG emissions will be associated with the project vessels from internal combustion engines and incineration activities.</li> <li>During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.</li> </ul>	<ul style="list-style-type: none"> <li>Localised, short-term decrease in air quality.</li> </ul>	
<b>Light emissions from project vessels</b>	<ul style="list-style-type: none"> <li>Project vessels will use external lighting to navigate and conduct safe operations at night, including to maintain good night visibility for crew members and to communicate the vessel's presence to other marine users.</li> </ul>	<ul style="list-style-type: none"> <li>Light emissions may affect fauna (such as marine turtles and birds) in the following ways: Behaviour: artificial lighting has the potential to create a constant level of light at night that can override natural levels and cycles. Orientation: if an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for marine air pollution and GHG emissions reporting.</li> <li>Implementation of the Woodside Offshore Seabird Management Plan.</li> <li>Lighting will be limited to the minimum required for navigation and safe operational requirements.</li> </ul>

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Unplanned (Accidents / Incidents)</b>			
<b>Unplanned hydrocarbon release: vessel collision</b>	<p>Project vessels will use marine diesel fuel, meaning a vessel collision involving a project vessel or third-party during the activity may potentially result in the release of marine diesel.</p> <p>For a collision to result in the worst-case scenario diesel release, several factors must occur as follows:</p> <ul style="list-style-type: none"> <li>Identified causes of vessel interaction must result in a collision.</li> <li>The collision has enough force to penetrate the vessel hull and in the exact location of the fuel tank.</li> <li>The fuel tank must be full or at least of volume which is higher than the point of penetration.</li> </ul>	<ul style="list-style-type: none"> <li>In the highly unlikely event of a vessel collision causing a release of hydrocarbons, impacts to water quality and marine ecosystems could occur.</li> <li>Marine diesel is a relatively volatile, non-persistent nature hydrocarbon with around 25% evaporating within the first 24 hours.</li> <li>Potential impacts across the whole EMBA were assessed including receptors such as plankton, fish, marine mammals, seabirds and migratory shorebirds, tourism, recreation, and commercial fisheries (for example).</li> <li>The potential biological and ecological impacts of an accidental hydrocarbon release as a result of a vessel collision during the activities are expected to have minor, short term impacts to species and habitats, but not affecting ecosystem function.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements.</li> <li>Consult with relevant persons so that other marine users are informed and aware, reducing the likelihood of a collision.</li> <li>Establish temporary exclusion zones around vessels which are communicated to marine users to reduce the likelihood of collision.</li> <li>Spill response arrangements supporting the Oil Pollution Emergency Plan (OPEP) will be tested to ensure the OPEP can be implemented as planned.</li> <li>Emergency response activities would be implemented in line with the OPEP.</li> </ul>
<b>Unplanned hydrocarbon release: bunkering</b>	<ul style="list-style-type: none"> <li>Accidental loss of hydrocarbons to the marine environment during planned bunkering/refuelling may occur caused by partial or total failure of a bulk transfer hose or fittings due to operational stress or other integrity issues.</li> </ul>	<ul style="list-style-type: none"> <li>The biological consequences of such a small volume spill on identified open water sensitive receptors relate to the potential for slight impacts to megafauna, plankton and fish populations that are within the spill-affected area.</li> </ul>	<ul style="list-style-type: none"> <li>Preventing unplanned hydrocarbon release due to bunkering.</li> <li>Comply with regulatory requirements for the prevention of marine pollution.</li> <li>Appropriate bunkering equipment kept and maintained.</li> <li>Compliance with Contractor procedures for the management of bunkering/helicopter operations to reduce the likelihood and potential severity of a spill.</li> </ul>
<b>Unplanned discharge: deck spills</b>	<ul style="list-style-type: none"> <li>Accidental discharge of hydrocarbons/ chemicals from project vessel deck activities and equipment (such as cranes and winches).</li> </ul>	<ul style="list-style-type: none"> <li>Unplanned discharges of non-process chemicals and hydrocarbons may decrease the water quality in the immediate vicinity of the release. Only small volumes (approximately &lt;100 L) would be expected to potentially occur, resulting in very short-term impacts to water quality, and limited to the immediate release location.</li> <li>No significant impacts from the accidental discharges described would be anticipated due to the offshore/open water locations, low sensitivity of surrounding water quality and high level of dilution into the open water marine environment of the Operational Area.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of marine pollution.</li> <li>Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.</li> <li>Maintain and locate spill kits in close proximity to hydrocarbon storage areas and deck areas for use to contain and recover deck spills.</li> </ul>

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
<b>Unplanned discharge of solid hazardous / non-hazardous solid waste / equipment</b>	<ul style="list-style-type: none"> <li>Accidental loss of hazardous or non-hazardous wastes (including dropped objects) to the marine environment.</li> <li>Generation and disposal of waste from infrastructure removal.</li> <li>Dropped objects resulting in disturbance of benthic habitat.</li> </ul>	<ul style="list-style-type: none"> <li>The potential impacts of hazardous or non-hazardous solid wastes and equipment accidentally discharged to the marine environment include contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes.</li> <li>Incorrect classification of waste can also result in inappropriate disposal of hazardous decommissioning wastes that could contaminate non-hazardous waste streams. This has the potential to result in contamination to air, soil and water during disposal.</li> <li>In the unlikely event of loss of an object being dropped into the marine environment, potential environmental effects would be limited to localised physical impacts on benthic communities.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for the prevention of marine pollution and handling of hazardous wastes.</li> <li>Disposal of waste associated with the subsea infrastructure will comply with relevant State and Commonwealth legislation.</li> <li>Project vessel waste arrangements which require waste segregation, recording and safe handling of waste according to their hazard and recyclability class.</li> <li>Solid waste/equipment dropped to the marine environment will be recovered where safe and practicable to do so.</li> <li>The project vessels' work procedures for lifts, bulk transfers and cargo loading which require safe lifting and management of loads.</li> <li>Implement an infrastructure disposal and resource recovery strategy that tracks waste, considers the waste hierarchy and considers contingency procedures for dealing with contaminants.</li> </ul>
<b>Physical presence: vessel collision with marine fauna</b>	<ul style="list-style-type: none"> <li>Vessel movements have the potential to result in collisions between project vessel (hull and propellers) and marine fauna.</li> <li>Project vessels would typically be stationary or moving at low speeds when supporting subsea infrastructure removal.</li> </ul>	<ul style="list-style-type: none"> <li>Given the absence of aggregations, duration of activities within the Operational Area and the slow speeds at which project vessels operate, collisions with cetaceans, marine turtles and whale sharks are considered highly unlikely.</li> <li>Collisions between vessels and marine fauna may result in injury to, or death of, marine fauna.</li> </ul>	<ul style="list-style-type: none"> <li>Comply with regulatory requirements for interactions with marine fauna to reduce the likelihood of a collision occurring.</li> </ul>
<b>Accidental introduction of invasive marine species (IMS)</b>	<ul style="list-style-type: none"> <li>Project vessels have the potential to introduce IMS to the Operational Area through marine biofouling (containing IMS) on vessels, as well as within high-risk ballast water exchange.</li> </ul>	<ul style="list-style-type: none"> <li>The likelihood of IMS being introduced and establishing viable populations within these Operational Area or immediate surrounds is considered remote.</li> <li>Introduction of IMS may result in changes to the ecology of the operational area and competition with existing biota.</li> </ul>	<ul style="list-style-type: none"> <li>Project vessels will manage their ballast water using one of the approved ballast water management options, as outlined in the Australian Ballast Water Management Requirements.</li> <li>Woodside's IMS risk assessment process will be applied to project vessels and immovable equipment undertaking the activities.</li> </ul>

## 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 please contact Woodside before **26 March 2025** via:

**E: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)**

**Phone: 1800 442 977**

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:

[www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/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 relevant persons as relevant and appropriate.

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 2023 (Cth)* and support other regulatory submissions associated with the planned activities (which may or may not be confidential).

Please let us know if you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA.

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Revision: 0

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**6.3.2 Email to Australasian Centre for Corporate Responsibility (ACCR), Pilbara Ports Association (PPA), Australian Border Force (ABF), Australian Conservation Foundation (ACF), Australian Energy Producers (AEP), Australian Marine Conservation Society (AMCS), Australian Maritime Safety Authority (AMSA) – Marine Pollution, Cape Conservation Group (CCG), City of Karratha, Conservation Council of WA (CCWA), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Defence (DoD), Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), Department of Industry, Science and Resources (DISR), Department of Transport (DoT), Exmouth Chamber of Commerce and Industry (CCI), Exmouth Community Liaison Group (CLG), Finder Energy, Friends of the Earth Australia (FOEA), Greenpeace Australia Pacific (GAP), INPEX (EP), JX Nippon, KATO Energy (WA), KUFPEC, Karratha & Districts Chamber of Commerce and Industry (KDDCI), Karratha Community Liaison Group (CLG), Kyushu Electric Wheatstone, Longreach Capital Investments, Marine Tourism WA, Maritime Union of Australia (MUA), Mobil Australia Resources Company, Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Onslow Chamber of Commerce and Industry (CCI), PE Wheatstone, Protect Ningaloo, Recfishwest, Santos, Shell, Shire of Exmouth, Skye Napoleon Pty Ltd, The Wilderness Society (TWS), WA Game Fishing Association, Western Gas, – 24 February 2025**

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#).

There are no other changes to the previously provided consultation information.

#### **Updated Information**

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

##### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 Consultation

### 6.3.3 Email to Australian Communications and Media Authority (ACMA), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on 17 October 2024, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The discharges: *decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
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#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

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Your feedback and our response will be included in our EP which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with

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Regards

Woodside Energy Consultation

#### **6.3.4 Email to Australian Fisheries Management Authority (AFMA), Australian Southern Bluefin Industry Association (ASBTIA), Commonwealth Fisheries Association (CFA), – 24 February 2025**

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

##### **Updated Information**

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
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Regards,

Woodside Energy Consultation

### 6.3.5 Email to Australian Hydrographic Office (AHO), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on 17 October 2024, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
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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 Energy Consultation

### 6.3.6 Email to Australian Maritime Safety Authority (AMSA) – Marine Safety, – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Regards,

Woodside Energy Consultation

### **6.3.7 Email to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity, marine pests, vessels, aircraft and personnel, Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries, – 24 February 2025**

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### **Updated Information**

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Regards

Woodside Energy Consultation

### 6.3.8 Email to Department of Defence (DoD), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on 17 October 2024. Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The discharges: *decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Woodside Energy Consultation

### 6.3.9 Email to Department of Planning, Lands and Heritage (DPLH), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Kind regards,

Woodside Energy Consultation

### 6.3.10 Email to Department of Primary Industries and Regional Development (DPIRD), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Woodside Energy Consultation

### 6.3.11 Email to Department of Transport (DoT), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Woodside Energy Consultation

### 6.3.12 Email to Department of Climate Change, Energy, the Environment and Water (DCCEE), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Woodside Energy Consultation

### 6.3.13 Email to Director of National Parks (DNP), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

##### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
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Kind regards,

Woodside Energy Consultation

**6.3.14 Email to Gascoyne Recreational Marine Users, North West Slope Trawl Fishery, Pilbara/Kimberley Recreational Marine Users, Western Deepwater Trawl Fishery, – 28 February 2025**

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **1 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

**Updated Information**

*The discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
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Woodside Energy Consultation



**Woodside Energy Group Ltd**  
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Mia Yellagonga  
11 Mount Street  
Perth WA 6000  
Australia  
T: +61 8 9348 4000  
[www.woodside.com](http://www.woodside.com)

Dear Recreational Marine User,

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **29 September 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

There are no other changes to the previously provided consultation information.

### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

Discharges: decommissioning activities

- During subsea infrastructure removal, flushed infrastructure may release a small volume of residual fluid into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible environmental damage.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

### Atmospheric emissions and greenhouse gas (GHG) emissions

During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

A revised consultation sheet has been enclosed for your reference. If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **5 May 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our website at [woodside.com](http://woodside.com).

Kind regards,

Woodside Energy Consultation



**Woodside Energy**  
Mia Yellagonga  
Karlak, 11 Mount Street  
Perth WA 6000

**T:** 1800 442 977  
**E:** [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)  
[www.woodside.com](http://www.woodside.com)  
f t in y i

### 6.3.16 Email to Chevron Australia, – 25 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Kind regards,

Woodside Energy Consultation

### 6.3.17 Email to Western Australian Fishing Industry Council (WAFIC), – 24 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

#### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Kind regards,

Woodside Energy Consultation

### 6.3.18 Email to Buurabalyji Thalanyi Aboriginal Corporation – 24 February 2025

Hi [Individual 2]

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Buurabalayji Thalanyji Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE



Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE
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The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.19 Email to Kariyarra Aboriginal Corporation – 24 February 2025

Dear [Individual 3] & [Individual 4],

I hope you are both well. There has been an update to one of our EP's that may be relevant to your group. Please reach out if you would like to discuss further.

## Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Kariyarra Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2022, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

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Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.20 Email to Murujua Aboriginal Corporation – 24 February 2025

Hi [Individual 17], [Individual 5]

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Murujuga Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
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Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.21 Email to Nganhurra Thanardi Garrbu Aboriginal Corporation – 24 February 2025

Hi [Individual 6],

I hope you are well. There has been an update to one of our EP's that may be of relevance to the NTGAC community. Please reach out if you would like further information.

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Nganhurra Thanardi Garrbu Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 20224, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in</p>	NO CHANGE

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		the immediate vicinity of the discharge.	
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.22 Email to Ngarluma Aboriginal Corporation – 24 February 2025

Good afternoon, [Individual 7] & [Individual 8],

I hope you are both well. Please see below an update on the Angel Subsea Infrastructure Removal EP. Do not hesitate to reach out if you require further information.

### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Ngarluma Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

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Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.23 Email to Robe River Kuruma Aboriginal Corporation – 24 February 2025

Good morning [individual 18],

I hope you are well and that the HAC meetings went well last week. I am reaching out as there has been an update to one of Woodsides EP's. Please contact me anytime if you require further information.

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Robe River Kuruma Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
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Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.24 Email to Wirrawandi Aboriginal Corporation – 24 February 2025

Hi [Individual 11],

Happy Monday! Great meeting up briefly last week.

We are contacting Wirrawandi Aboriginal Corporation (WAC) in relation to an update for an Environmental Plan.

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Wirrawandi Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the</p>	NO CHANGE

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	(MEG), biocide and water-based hydraulic fluid.	discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.	
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

[Attachment: Consultation Information sheet, February 2025]

### 6.3.25 Email to Yindjibarndi Aboriginal Corporation – 24 February 2025

Dear [Individual 12],

I hope you and your family are well.

As the nominated representative for EP related matters for the Yindjibarndi Aboriginal Corporation, please see below information that may be relevant to the Yindjibarndi community.

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### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Yindjibarndi Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

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Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.26 Email to Yinggarda Aboriginal Corporation – 24 February 2025

Dear [Individual 13],

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Yinggarda Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 1 October 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
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Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation information Sheet, February 2025]

### 6.3.27 Email to Kimberley Land Council – 24 February 2025

Hi [Individual 14]

I recently attended the Savanna Fire Forum and thought I may have seen you there but understand your hectic schedule. The forum is really well organised (as with KLC events) and it was great to see [Individual 19] and to better understand her role within ICIN.

Sarah is excellent at her role.

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Kimberley Land Council regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-</p>	NO CHANGE

	water-based hydraulic fluid.	term, localised decline in planktonic organisms in the immediate vicinity of the discharge.	
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

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Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

### 6.3.28 Email to Yamatji Marlpa Aboriginal Corporation – 24 February 2025

Good morning,

### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Yamatji Marlpa Aboriginal Corporation regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

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While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.</p>	NO CHANGE
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

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Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.29 Email to Ngarluma Yindjibarndi Foundation Ltd – 24 February 2025

Hi [Individual 12]

We are emailing to provide an activity update to Ngarluma Yindjibarndi Foundation Ltd regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the	UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well	NO CHANGE

	surrounding environment.  UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.	understood and pose no risk of serious or irreversible damage to the environment or marine biota.  UPDATE: Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.	
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to me, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact me if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet]

### 6.3.30 Email to Save Our Songlines – 24 February 205

Dear [Individual 1]

#### Consultation Activity Update – Angel Subsea Infrastructure Removal Environment Plan

We are emailing to provide an activity update to Save Our Songlines regarding the Angel Subsea Infrastructure Removal Environment Plan (EP).

Following our initial email correspondence commencing consultation with you on 30 September 2024, we have made changes to the Consultation Information Sheet previously provided to you.

While the nature of the activity remains the same as when we initially consulted with you, the updated Consultation Information Sheet provides more accurate information relating to the summary of key risks and impacts. The updated information does not require Woodside's mitigation and management measures to be changed, or for additional measures to be implemented.

#### Updated information

Additional information has been updated in *Table 3: Summary of key risks and impacts and preliminary management measures for the Angel subsea infrastructure removal activity* and is outlined below:

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impact/Risk	Proposed Mitigation and/or Management Measure
Discharges: decommissioning activities	<p>UPDATE: During subsea infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment.</p> <p>UPDATE: Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol</p>	<p>UPDATE: Short-term, localised decrease in water quality from the release of residual fluid at cut locations. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.</p> <p>UPDATE: Impacts to pelagic fish are expected to be limited to avoidance</p>	NO CHANGE

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	(MEG), biocide and water-based hydraulic fluid.	of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.	
Atmospheric emissions and greenhouse gas (GHG) emissions	UPDATE: During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.	NO CHANGE	NO CHANGE

The updated Consultation Information Sheet, dated February 2025, is attached and also available on Woodside's website: [Consultation Activities - Woodside Energy](#).

### Next steps

Woodside will submit the Angel Subsea Infrastructure Removal EP to NOPSEMA in April 2025.

If there is additional information as a result of this activity update that you would like us to consider as part of the EP submission, please provide that information to us no later than **26 March 2025**.

Feedback can be provided directly to Woodside, by emailing [feedback@woodside.com](mailto:feedback@woodside.com) or by calling 1800 442 977.

Woodside manages gender restricted or other culturally sensitive information carefully and will work with you to understand how you would like your information to be managed. If you would prefer to provide feedback directly to NOPSEMA, you can email [communications@nopsema.gov.au](mailto:communications@nopsema.gov.au) or call (08) 6188 8700.

Feedback can continue to be provided during the life of an EP, including after consultation for the EP has closed, during EP assessment, and after an EP has been accepted by NOPSEMA. Woodside continues to receive, assess and respond to claims and objections from relevant persons throughout the life of the EP.

Should a claim or objection be received following the acceptance of an EP that Woodside assesses, and which 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.

Please contact Woodside if you have any further queries.

Kind regards,

[Attachment: Consultation Information Sheet, February 2025]

### 6.3.31 Email to Western Australian Museum (WAM), – 24 February 2025

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Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Kind regards,

Woodside Energy Consultation

### 6.3.32 Email to Shire of Ashburton, – 25 February 2025

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

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An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 you request that particular information that you provide in the consultation not be published. If so, we will make your request known to NOPSEMA so that the information is not included when the EP is published on NOPSEMA's website.

Personal information collected in the course of consultation will be handled in accordance with Woodside's Environment Plan Privacy Collection Notice. To understand how personal information will be handled, please visit our [website](#).

Kind regards,

Woodside Energy Consultation

### **6.3.33 Email to Australian Institute of Marine Science (AIMS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Western Australian Marine Science Institution (WAMSI), – 24 February 2025**

Following the commencement of consultation on the Angel Subsea Infrastructure Removal Environment Plan on **17 October 2024**, Woodside has updated the mitigation and management measures of planned activities (further details below).

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An updated Consultation Information Sheet reflecting this update is attached and available on our [website](#). There are no other changes to the previously provided consultation information.

### Updated Information

The *discharges: decommissioning activities and atmospheric emissions and greenhouse gas emissions* potential impact / risks in Table 3 in the attached Consultation information Sheet has been updated and now includes:

#### Discharges: decommissioning activities

- During subsea infrastructure removal, residual fluid remaining in flushed infrastructure will be released into the surrounding environment.
- Fluid includes treated seawater with residual hydrocarbon (less than 30ppm), small pockets of trapped liquid condensate and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid.
- Short-term, localised decrease in water quality from the release of residual fluid at cut locations may impact marine biota. Potential impacts are well understood and pose no risk of serious or irreversible damage to the environment or marine biota.
- Impacts to pelagic fish are expected to be limited to avoidance of the localised area of the discharge and short-term, localised decline in planktonic organisms in the immediate vicinity of the discharge.

#### Atmospheric emissions and greenhouse gas (GHG) emissions

- During subsea infrastructure removal, trace gas trapped within the rigid flowlines will be released subsea.

If you have feedback specific to the proposed activities, we would welcome your feedback at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by **26 March 2025**.

Your feedback and our response will be included in our EP 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 2023 (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 Consultation



## 6.4 Activity Update Follow-up

### 6.4.1 Email to Australian Communications and Media Authority (ACMA), Australian Fisheries Management Authority (AFMA), Australian Hydrographic Office (AHO), Australian Maritime Safety Authority (AMSA) – Marine Safety, Australian Southern Bluefin Industry Association (ASBTIA), Chevron Australia, Commonwealth Fisheries Association (CFA), Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity, marine pests, vessels, aircraft and personnel, Department of Agriculture, Fisheries and Forestry (DAFF) – Fisheries, Department of Defence (DoD), Department of Planning, Lands and Heritage (DPLH), Department of Primary Industries and Regional Development (DPIRD), Department of Transport (DoT), Director of National Parks (DNP), Shire of Ashburton, Western Australian Fishing Industry Council (WAFIC), Western Australian Museum (WAM), – 14 March 2025

Woodside previously consulted you on an amendment to the Angel Subsea Infrastructure Removal Environment Plan (EP) mitigation and management measures of planned activities.

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Additional information on the EP is provided in the email below and in the Consultation Information Sheet, which is available on Woodside's [website](#).

#### Feedback

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Your feedback and our response will be included in our EP, 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 2023 (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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Woodside Energy Consultation

### 6.4.2 Email to Australasian Centre for Corporate Responsibility (ACCR), Pilbara Ports Association (PPA), Australian Border Force (ABF), Australian Conservation Foundation (ACF), Australian Energy Producers (AEP), Australian Marine Conservation Society (AMCS), Australian Maritime Safety Authority (AMSA) – Marine Pollution, Cape Conservation Group (CCG), City of Karratha, Conservation Council of WA (CCWA), Department of Biodiversity, Conservation and Attractions (DBCA), Department of Defence (DoD), Department of Transport (DoT), Exmouth Chamber of Commerce and Industry (CCI), Exmouth Community Liaison Group (CLG), Finder Energy, Friends of the Earth Australia (FOEA), Greenpeace Australia Pacific (GAP), INPEX (EP), JX Nippon, KATO Energy (WA), KUFPEC, Karratha & Districts Chamber of Commerce and Industry (KDDCI),

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**Karratha Community Liaison Group (CLG), Kyushu Electric Wheatstone, Longreach Capital Investments, Marine Tourism WA, Maritime Union of Australia (MUA), Mobil Australia Resources Company, Ningaloo Coast World Heritage Advisory Committee (NCWHAC), Onslow Chamber of Commerce and Industry (CCI), PE Wheatstone, Protect Ningaloo, Recfishwest, Santos, Shell, Shire of Exmouth, Skye Napoleon Pty Ltd, The Wilderness Society (TWS), WA Game Fishing Association, Western Gas, – 14 March 2025**

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Woodside Energy Consultation

### **6.4.3 Email to Department of Climate Change, Energy, the Environment and Water (DCCEEW), – 13 March 2025**

Woodside previously consulted you on an amendment to the Angel Subsea Infrastructure Removal Environment Plan (EP) mitigation and management measures of planned activities.

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Your feedback and our response will be included in our EP, 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 2023 (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 Energy Consultation

#### 6.4.4 Letter to Gascoyne Recreational Marine Users, Pilbara/Kimberley Recreational Marine Users – 16 April 2025

Please direct all responses/queries to:  
Woodside Energy Feedback  
t: +61 8 (1)800 442 977  
e: [consultation@feedback.woodside.com.au](mailto:consultation@feedback.woodside.com.au)



16 April 2025

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](http://www.woodside.com)



1



Dear Stakeholder

Woodside previously consulted you on an update to its plans for the Angel Subsea Infrastructure Removal Environment Plan (EP).

The EP involves the removal of subsea pipelines, umbilicals, and associated equipment (referred to as the Angel subsea infrastructure) in Production Licence WA-3-L.

Information on the EP is provided in the Consultation Information Sheet, which is available via the QR code below.



If you have feedback specific to the activities and the proposed EP, Woodside welcomes it at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or 1800 442 977 by 5 May 2025.

Your feedback and our response will be included in our EP 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 2023 (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 Energy Consultation**

**Woodside Energy Consultation**



Woodside Energy  
Mia Yellagonga  
Karlak, 11 Mount Street  
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#### **6.4.5 Email to Australian Institute of Marine Science (AIMS), Commonwealth Scientific and Industrial Research Organisation (CSIRO), Western Australian Marine Science Institution (WAMSI), – 13 March 2025**

Woodside previously consulted you on an amendment to the Angel Subsea Infrastructure Removal Environment Plan (EP) mitigation and management measures of planned activities.

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Regards

Woodside Energy Consultation

6.5 Newspaper advertisements

6.5.1 Summary table

Newspaper	Coverage	Publication dates
The Australian	National	2 October 2024
The West Australian	Regional (WA)	2 October 2024
Pilbara News	Local (WA)	9 October 2024
Midwest Times	Local (WA)	8 October 2024
North West Telegraph	Local (WA)	9 October 2024
Koori Mail	Indigenous	23 October 2024
National Indigenous Times	Indigenous	29 October 2024





## 6.5.3 The West Australian – 2 October 2024

The West Australian  
Wednesday, October 2, 2024

NEWS 7



An Israeli strike on the border with south Lebanon, smoke rises from the rubble in Beirut and Israeli tanks prepare to invade.

# launch ground offensive

news agency SANA said the country's air defence systems had intercepted three rounds of strikes on the capital Damascus. State television said news anchor Safaa Ahmad was killed "in the Israeli aggression" on the city, while SANA reported three civilians were killed and nine others wounded.

There was no immediate comment from the Israeli military. US Defence Secretary Lloyd Austin gave Washington's backing to Israel "dismantling attack infrastructure along the border". Hezbollah has previ-

ously said it is "ready if Israel decides to enter by land".

US news site Axios cited two Israeli officials saying the military incursion is "targeted and limited in time and scope and is not intended to occupy southern Lebanon".

Lebanon's national army, dwarfed by Hezbollah's military power, was "repositioning" troops farther from the border, a military official said.

World leaders have urged de-escalation, with UN Secretary-General Antonio Guterres' spokesman saying: "We do

not want any sort of ground invasion."

Turkey slammed the ground invasion as an illegal attempt at occupation.

The Lebanese Health Ministry said Israeli strikes on Lebanon killed 95 people on Monday.

Lebanon's Health Minister Firass Abiad said more than 1000 people have been killed since September 17.

Hezbollah began strikes on Israeli troops a day after its Palestinian ally Hamas staged its unprecedented attack on Israel on October 7, which triggered

Israel's devastating assault on the Gaza Strip.

Iran has said Nasrallah's killing would bring about Israel's "destruction", though its Foreign Ministry said on Monday that Tehran would not deploy any fighters to confront Israel. Mr Austin warned of "serious consequences for Iran" if Tehran directly attacks Israel.

In a video address to the Iranian people on Monday, Israeli Prime Minister Benjamin Netanyahu blamed the Iranian Government for plunging the Middle East "deeper into war" at

the cost of its own people. "There is nowhere in the Middle East Israel cannot reach. There is nowhere we will not go to protect our people and protect our country," he said.

Iran and Israel would be at peace when Iran was "finally free", he said, adding that would "come a lot sooner than people think".

After a deadly strike on central Beirut on Monday, resident Kahier Bannout, 42, said it was "supposed to be a safe area — not a war zone".

"Everyone is afraid," he said.

## Angel Subsea Infrastructure Removal Environment Plan

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Woodside consults with relevant persons to gather feedback to inform its Commonwealth Environment Plans.

### Angel Subsea Infrastructure Removal activities

Woodside plans to remove subsea infrastructure which connects three production wells to the Angel platform. These wells have ceased production and the associated infrastructure is no longer required.

This Environment Plan covers the removal of three subsea flowlines, three umbilicals, and associated equipment from the Angel field. Permanent plugs will be installed to preserve fluids within flowlines and umbilicals to as close as practicable to the Angel platform.

### Environment that may be affected (EMBA)

The EMBA is the largest geographic area where unplanned activities could potentially have an environmental consequence. The whole EMBA will not be affected.

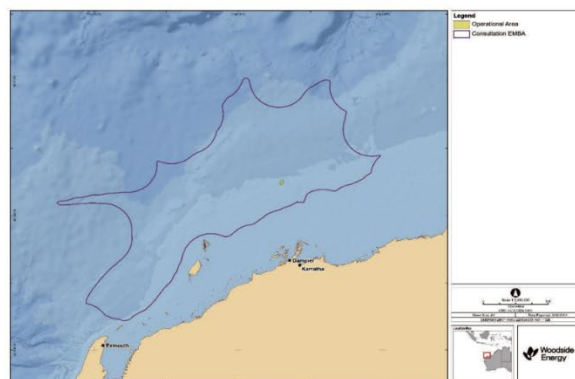
### We want to hear from you

If you are an individual, organisation or community group and believe your functions, interests or activities may be impacted by the activities under this Environment Plan, we want to hear from you by 1 November 2024.

To find out more go to:

[www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities)

You can also subscribe via our website to receive future information on upcoming activities.



E: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)  
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## 6.5.4 Pilbara News – 9 October 2024

**Pilbara NEWS**  
Wednesday, October 9, 2024

 pilbaranews.com.au

**NEWS** 3

## Better boat ramp for Tantabiddi

MATTHEW PADDICK

The State Government has spent more than a million dollars towards preparations for a proposed boat-launching facility to better access Ningaloo Reef.

The State Government says it has invested \$1.3 million towards concept designs and investigation to improve the boat ramp at Tantabiddi, near Exmouth and create a safer access point to the heritage-listed Ningaloo Reef.

The preferred site would be 300m south of where the existing boat ramp is, about 38km along Murat Road and Yardie Creek Road from Exmouth and the jetty would expand for commercial operations, to accommodate six ramps and up to 40 boat pens.

The Shire of Exmouth, the World Heritage Committee and traditional custodians, as well as local stakeholders were consulted, with the shire holding a public consultation in which the community voiced support for the project.

Tourism Minister Rita Saffioti said the design would be bigger and more sheltered than the existing ramp. "There will be more sheltered water and clear separation of recreational boat users and commercial operators, plus the distance from the Tantabiddi Creek mouth reduces the risk of future closures due to silting from flooding caused by cyclone and rain events," she said.



Exmouth could have 80 per cent of its power needs met as soon as 2026 thanks to the construction of new solar facilities.

## Solar boost for Exmouth

MADELIN HAYES

Exmouth could have 80 per cent of its power needs met as soon as 2026, thanks to the construction of new solar facilities.

As part of a newly-signed power purchase agreement with Pacific Energy, Horizon Power will provide power to Exmouth

with a mix of large-scale and rooftop solar, battery storage and, only when needed, gas-fired generation.

The agreement will involve construction of a 9.6-megawatt solar farm and two batteries with a combined 10MW/49.6MWh capacity adjacent to the existing Exmouth Power Station.

The agreement's signing comes after the Labor Government's recent announcement of plans to build transmission on the Burrup Peninsula that can connect industry with emerging renewable energy developments in the Pilbara.

"I'm excited about the Cook Labor Government's commit-

ment to decarbonising our region," Pilbara MLA Kevin Michel said.

"The new solar farm and battery storage in Exmouth will create local jobs and position our communities as leaders in renewable energy. This initiative is vital for securing a cleaner future for all Western Australians."

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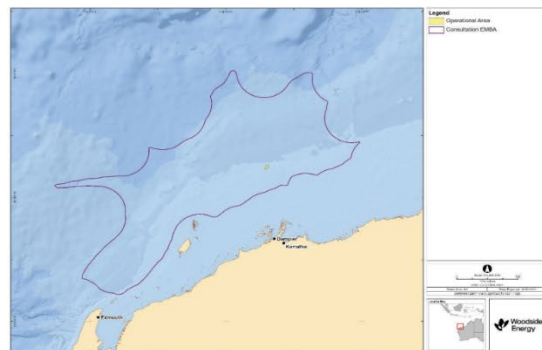
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6.5.5 Midwest Times – 9 October 2024

4

NEWS

midwesttimes.com.au

Times

Wednesday, October 9, 2024

# It's time to get ready for Bird Count



A raven stealing an egg for his morning breakfast. Picture: Craig Duncan



Birdwatchers Sue Mather and Paul Mincham. RIGHT: Little pied cormorants. Pictures: Craig Duncan

**CRAIG DUNCAN**

Get out the binoculars, get into the outdoors and listen for the sound of birdsong because the Aussie Bird Count is coming back to roost.

Birdlife Australia's biggest citizen science event of the year is making its 11th return across Australia and volunteers are needed to take part.

From October 14-20, Australians are needed to get outdoors in their back gardens, in a patch of bush or at a wetland and spend 20 minutes identifying birds while helping Birdlife Australia gather data on the numerous species countrywide.

Birdlife Australia's "chief bird nerd" and senior public relations adviser Sean Dooley said last year 60,000 Australians took part in the

count, counting more than 3.5 million birds, and this year he hopes it will come back bigger and better.

"Over the last decade, the Aussie Bird Count has helped Australians better understand the birds we share our lives with, providing an annual snapshot of how our birds are faring," he said.

Mr Dooley said taking part in the count was easy and Birdlife Australia had a mobile app to make the process even simpler.

"People tell us every year about how much they love taking part in the Aussie Bird Count," he said.

"People of all ages genuinely enjoy spending 20 minutes watching birds because it's a relaxing

and rewarding thing to do. Parents and grandparents love doing Aussie Bird Counts with their kids and last year we had over 800 schools participate. Having the Aussie Bird Count app to guide you means you don't have to be a bird expert to join in the fun."

Mr Dooley said hundreds and thousands of Australians had

taken part in the study in the past decade. He said the results had been surprising, seeing the white ibis breaking into the national top 10 and introduced birds like the common myna slipping down the rankings.

"So far the rainbow lorikeet has reigned supreme as Australia's most frequently counted bird year after year," he said.

"Now we're looking to see what the next 10 years will mean to the birds around us.

"We would love people to get their friends and family involved. "Get your flock together for a count, we know you'll love getting to know the birds right on your doorstep."

To take part, register at [aussiebirdcount.org.au](http://aussiebirdcount.org.au) and download BirdLife Australia's free Aussie Bird Count app.

## Angel Subsea Infrastructure Removal Environment Plan

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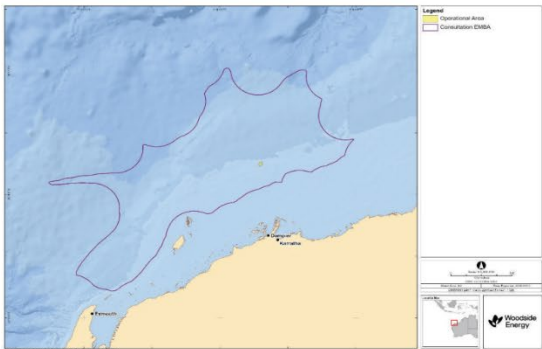
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## 6.5.6 North West Telegraph – 9 October 2024

**NORTH WEST Telegraph**  
Wednesday, October 9, 2024

northwesttelegraph.com.au

**NEWS** 3

# Resident & mayor at loggerheads on question

CAIN ANDREWS

Chaos ensued at a Port Hedland council meeting during which repeated inquiries at question time about Mayor Peter Carter's property ownership led to a heated exchange and a temporary recess.

Mr Carter, visibly frustrated, struck his gavel and paused the meeting after facing persistent questions from local dentist Roger Higgins.

Mr Higgins, a two-time council hopeful, approached the bench to ask Mr Carter whether he was residing at a South Hedland property listed in his annual return.

Councillors are required to submit an annual return detailing their financial interests, assets and potential conflicts of interest, including real estate holdings.

The inquiry, which was first

raised at the July council meeting, has become a recurring point of contention with Mr Higgins citing concerns over transparency.

Mr Carter, growing frustrated with the repeated line of questioning, engaged in a back-and-forth with Mr Higgins before striking his gavel and calling a recess to restore order.

"So tonight, mayor, my question requires a simple yes or no answer. Is your residential address now 3 Clover Way?" Mr Higgins said.

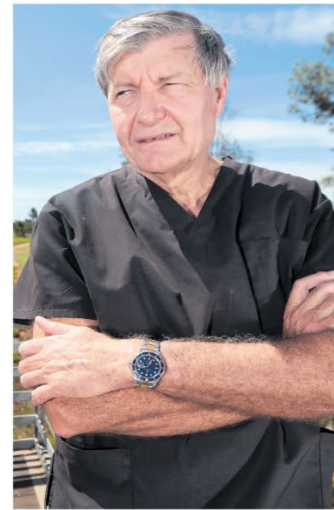
"It is a property that I own, thank you Roger," Mr Carter said.

"No, that is not an answer to the question at all. You have twice now said the same thing," Mr Higgins said.

The pair started to shout over each other with Mr Higgins saying: "You are required to answer truthfully with documents. I have



Mayor Peter Carter. Picture: Daniel Wilkins



PHRA president Roger Higgins. Picture: Danella Bevis

asked one question. I have not finished my questions and I want this adjudicated on now. You know how significant it is."

Mr Carter then struck the gavel and called a recess after Mr Higgins said he would not move away from the microphone.

After returning from the break, the mayor clarified that while he does not need to declare his personal residence, he is required to

list any properties he owns. Mr Higgins, though not fully satisfied, appeared to drop the issue for the moment.

"Do you think Roger Higgins wants your address so he can come over for tea and biscuits?", a member of the public asked jokingly after the exchange.

"No, I don't think so," Mr Carter chuckled.

The confrontation follows

another controversy involving Mr Higgins, who recently called on the council to discontinue the acknowledgement of country before meetings.

The remark sparked a strong response from Aboriginal leaders, who attended the August council meeting to deliver speeches in support of the acknowledgement which were met with rounds of applause from the gallery.

## Angel Subsea Infrastructure Removal Environment Plan

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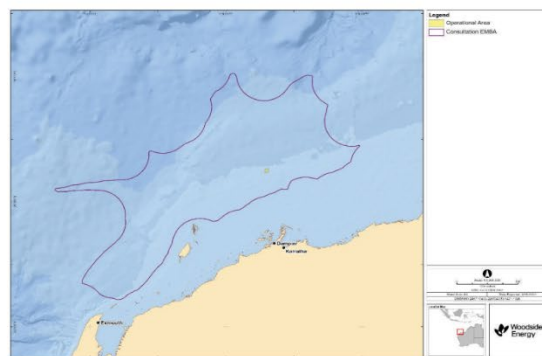
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## 6.5.7 Koori Mail – 23 October 2024

news

# Healing Bundjalung rivers

By STEVIE WAPPET



NESTLED in the tree-soaked plains of the Tweed shire in Bundjalung Country, town folk of Uki and the surrounds gathered at Uki hall recently for the launch of Jagun Alliance's new program Heal the Rivers.

Local landholders and interested community members yarned with custodians and land management and restoration experts over a cup of tea before taking a seat to listen to ways First Nations land management strategies could promote the health of Yarribi.

Heal the Rivers is a three-year project focused on Indigenous-led catchment restoration in the Brunswick, Tweed, Richmond and Clarence catchments from local Indigenous run organisation Jagun Alliance.

In partnership with the University of Melbourne and Bush Heritage Australia, and funded by the Australian Government, Heal the River hones in on Jagun Alliance's desire to protect and promote the health, resilience and

continuity of our lands and waterways, focusing on how relationships between local landholder, land management and restoration experts and original custodians lay the foundation for a healthy jagun – a healthy Country.

After a Welcome to Country by Kyle Slabb, Oli Costello, Jagun's executive director, spoke on the importance of situating ourselves within our

environment as a first step to land restoration.

He spoke on how "our old people have been adapting to climate change for thousands and thousands of years," and for this reason, how important "more support for First Nations leaderships and more support for our knowledges and practices" would aid in healing our rivers.

The floor then opened to a

yarning circle, and people were invited to speak on their connection to and interest in the project. It was apparent that all shared the desire to make Country healthier.

One local landholder, Beverly Fairley, has spent the last 20 years restoring her great, great grandfather's rainforest that had been obliterated for sugar cane farming, and with it the health of Yarribi and its tributaries. One

example of Bev's dedication is her work removing cat claw, an invasive woody creeper with a tubular root system that kills trees and destroys habitats. Cat claw is notorious for its creeping vine and difficulty to cull.

However, Bev and her sister painstakingly dug out the bulbs of over 61,000 cat claws and removed the vines by hand.

The commitment presented by Bev is just one example of the effort folk of the Tweed are putting in to protect and care for our jagun and its waters.

Heal the Rivers plans to connect more local landholders with Jagun Alliance's Aboriginal Ranger team through cross-sector workshops to share knowledge and identify necessary actions, as well as undertaking community resilience and engagement activities. Heal the Rivers workshops will be held in locations across Durrumbul/Brunswick River catchment, Yarrumbi/Tweed River catchment, Baluun/Richmond River catchment, and Birrung /Clarence River catchment.

● Visit Jagun Alliance's website at [jagunalliance.org.au](http://jagunalliance.org.au) for more information and to get involved.

## Angel Subsea Infrastructure Removal Environment Plan

Woodside has led the development of the LNG industry in Australia and today aims to thrive through the global energy transition.

Woodside consults with relevant persons to gather feedback to inform its Commonwealth Environment Plans.

### Angel Subsea Infrastructure Removal activities

Woodside plans to remove subsea infrastructure which connects three production wells to the Angel platform. These wells have ceased production and the associated infrastructure is no longer required.

This Environment Plan covers the removal of three subsea flowlines, three umbilicals, and associated equipment from the Angel field. Permanent plugs will be installed to preserve fluids within flowlines and umbilicals to as close as practicable to the Angel platform.

### Environment that may be affected (EMBA)

The EMBA is the largest geographic area where unplanned activities could potentially have an environmental consequence. The whole EMBA will not be affected.

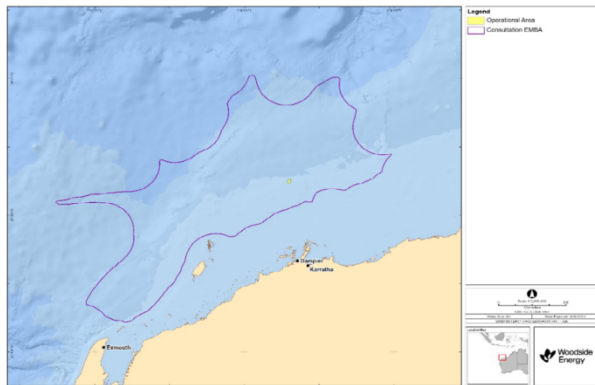
### We want to hear from you

If you are an individual, organisation or community group and believe your functions, interests or activities may be impacted by the activities under this Environment Plan, we want to hear from you by **1 November 2024**.

To find out more go to:

[www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities)

You can also subscribe via our website to receive future information on upcoming activities.



E: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)  
Phone: 1800 442 977  
[woodside.com](http://woodside.com)





## 6.5.8 National Indigenous Times – 29 October 2024

theibr.com.au

THE INDIGENOUS BUSINESS REVIEW

NIT 21

# Increasing opportunities

EXCLUSIVE DECHLAN BRENNAN

Despite increasingly contributing to the Australian economy, First Nations businesses have gone largely unnoticed by past governments, says Indigenous senator Jana Stewart.

The Mutthi Mutthi and Wamba Wamba woman and Labor senator, who is chairing the Joint Standing Committee on Aboriginal and Torres Strait Islander Affairs, held an open hearing in Perth this month into improving economic prosperity for First Nations people.

The inquiry into economic self-determination and opportunities comes after the release of the Murru Waarru economic outcomes report, which called for a critical shift in public policy to effectively support the economic empowerment of Indigenous people.

Senator Stewart said evidence from the inquiries showed Indigenous-led businesses were 100 times more likely to employ First Nations people, which in turn provides the best opportunity for culturally safe employment.

"The contribution is overwhelmingly positive, not just to the organisation, but you're also more likely to recruit more Aboriginal people; they add value to the organisation," Sen-



Senator Jana Stewart is promoting the work of Indigenous-led businesses. Picture: Aboriginal Hostels Ltd

ator Stewart said. "If you do the work early, they're (the business) not going to get held up anywhere along the line, because you've done the work, you build the relationships, you build the trust. You're doing the right thing by mob."

Senator Stewart also countered negative narratives around work ethic, arguing instead that the retention rate

for Indigenous businesses was high because of a culture of safety in Indigenous-led workplaces.

"There's this kind of narrative out there about us, you know, not wanting to work. But actually, the opposite is true," she said.

The Government has spoken much of the importance of jobs, with the Prime Minister using

his speech at the Garma festival to promote Indigenous economic development, especially climate and industry policies designed to leverage benefits for remote communities during Australia's clean energy transition. "It really is a big opportunity, in my mind, to really shift the narrative about what Aboriginal people contribute to our nation," Senator Stewart said.

She said the hearings allowed MPs to hear about the impact on both Indigenous businesses, as well as other Aboriginal businesses they get their suppliers from.

Research from Dilin Duwa, Woi Wurrung for "Everlasting Flow," found the "Indigenous ecosystem" makes an important contribution to the Australian economy. It saw 13,693 active businesses and corporations in 2022, which generated \$16.1 billion in revenue, employing 116,795 people, and paying \$4.2 billion in wages.

The senator for Victoria said these numbers were "no small feat," before noting people in the community had expressed a belief that the "closing the gap" narrative was deficit-focused, without commenting on First Nations' economic contribution. "Generally speaking, the kind of stereotypes are about 'poor us', rather than our strengths," she said.

"The fact that we've been able to have such an impact in such a small amount of time, when you think about the structural lockout, because it's not a disadvantage; we've had a lockout of any kind of economic position in our country."

Furthermore, Senator Stewart said businesses thrived when they were culturally safe.

## North West Shelf Phase 1 Well Plug and Abandonment and TPA03 Well Intervention Environment Plan Angel Subsea Infrastructure Removal Environment Plan

Woodside has led the development of the LNG industry in Australia and today aims to thrive through the global energy transition. Woodside consults with relevant persons to gather feedback to inform its Commonwealth Environment Plans.

Woodside is about to commence consultation on two separate Environment Plans.

### North West Shelf (NWS) Phase 1 Well Plug and Abandonment and TPA03 Well Intervention activities

Woodside plans to permanently plug and abandon five NWS wells that have ceased production. Three of the wells are located in the Angel field tied back to the Angel platform and two wells are located in the Perseus-over-Goodwyn field tied back to the Goodwyn platform. Woodside also proposes to conduct well intervention activities at the TPA03 well in the Tidepole field tied back to the Goodwyn platform, to remediate a valve and restore production from the lower reservoir.

This Environment Plan covers all plug and abandonment and well intervention activities, which are planned to be completed in one drill rig campaign. The activity will be around 125 km north of Dampier, Western Australia.

The Consultation Information Sheet for this Environment Plan will be available via the QR code below and on Woodside's website from 26 September 2024.

### 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 the activities under these Environment Plans, we want to hear from you by **30 October 2024**.

To find out more go to:

[www.woodside.com/what-we-do/consultation-activities](http://www.woodside.com/what-we-do/consultation-activities)

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### Angel Subsea Infrastructure Removal activities

Woodside plans to remove subsea infrastructure which connects three production wells to the Angel platform. These wells have ceased production and the associated infrastructure is no longer required.

This Environment Plan covers the removal of three subsea flowlines, three umbilicals, and associated equipment from the Angel field. Permanent plugs will be installed to preserve fluids within flowlines and umbilicals to as close as practicable to the Angel platform.

The Consultation Information Sheet for this Environment Plan will be available via the QR code below and on Woodside's website from 30 September 2024.

E: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)  
Phone: 1800 442 977  
[woodside.com](http://woodside.com)



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## 6.6 Ngaarda Radio Advertisements

### 6.6.1 Summary table

Media	Coverage	Publication dates
Ngaarda Radio	Pilbara	26 August – 30 November 2024

### 6.6.2 Scripts

#### Script 1 - 30 seconds

*Want to know more about Woodside Energy?*

*Our Roebourne office, located on Roe Street is open Wednesday to Friday and we welcome you to come and chat to our friendly team. Let's talk about local employment and training opportunities, social contribution, the environment, existing operations and future projects. Look for the open sign out the front!*

*You can also follow us on Facebook @ Woodside North West or phone our community information line 1800 634 988.*

#### Script 2 – 30 seconds

*Wayiba, Wanthiwa!*

*Woodside Energy consults with around 50 Traditional Owner Groups who have deep connections to Western Australia's coastline.*

*If you or your family has functions, interests or activities that may be affected by our projects, we want to hear from you.*

*Let's talk about what we have planned on land and sea at our Roebourne office or email us at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)*

## 6.7 Social media

### 6.7.1 Social media EP targeted campaign

# Would you like to know what Woodside has planned on land and sea?

We'd like to talk with you.

To find out about our Angel Subsea Infrastructure Removal Environment Plan and to share your views with Woodside on your relevant functions, interests or activities contact us at: [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or on 1800 442 977.

To stay updated, subscribe at:  
[woodside.com/consultation-activities](http://woodside.com/consultation-activities)





# Would you like to know what Woodside has planned on land and sea?

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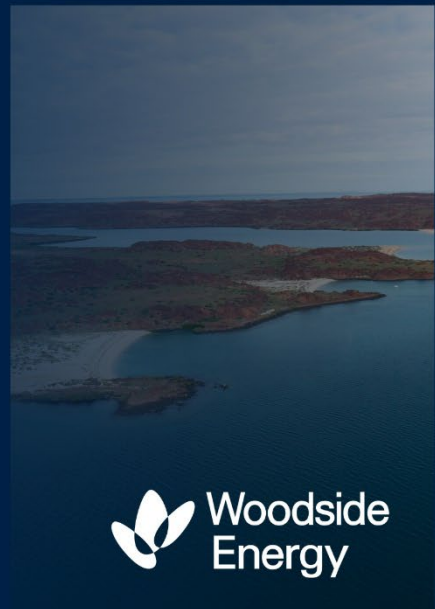


# Would you like to know what Woodside has planned on land and sea?

We'd like to talk with you.

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 or on 1800 442 977.

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## 6.8 Community information sessions

The community information sessions that Woodside has conducted are captured below:

### 6.8.1 Gascoyne Region

#### 6.8.1.1 Exmouth Community Information Session – 14 November 2024

Location	Exmouth
Activity	Community Drop-In: Woodside Marquee
Date	14 November 2024

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<b>Description of the consultation</b>	<p>Woodside hosted a stand at Ross Street Mall in Exmouth.</p> <p>The stand was staffed by Woodside Environment and Corporate Affairs representatives.</p> <p>Woodside displayed a QR code on the stand, linked to the consultation activities page of the Woodside website.</p> <p>Information on the Scarborough Energy Project, Browse to NWS Project, Woodside's Climate Transition Action Plan, leaflets providing QR codes to Woodside's Annual Report and Sustainability, 'Let's Talk' (a publication on the company's Australian activities) were available.</p> <p>Woodside made available printed consultation information sheets on the Angel Subsea Infrastructure Removal EP.</p>
<b>Advertising and invitations</b>	<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> <p>Geotargeted social media campaign advertising in Exmouth and surrounding areas (+80 kms) from 9 – 14 November 2024.</p> <p>Post on Woodside social media channel.</p> <p>Promotion at the Exmouth Community Liaison Group meeting.</p> <p>An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website) was displayed at Woodside's stand along with the EP factsheets and Project information sheets.</p>
<b>Estimated number of individuals / organisations consulted</b>	<p>Woodside had conversations with approximately 12 groups. These people identified as being Exmouth community members or visitors to Exmouth (residents of the East Coast of Australia or Western Australia).</p>
<b>Summary of Feedback, Objection or Claim</b>	
<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> <p>There was general interest in Woodside activities. Key issues discussed:</p> <p>Query on whether Woodside is building new marine infrastructure being built in the nearshore environment. A query was received on whether the design of Scarborough infrastructure allows for juvenile fauna to continue to traverse the nearshore environment.</p> <p>Woodside responded that the Scarborough trunkline was installed by horizontal directional drilling to minimise impacts to the beach and nesting turtles. The Scarborough trunkline is not a solid structure that would block movement of nearshore juvenile fauna.</p> <p>General queries on Woodside's footprint in Exmouth.</p> <p>Queries about employment and local content opportunities.</p> <p>Interest in understanding current social investment programs and opportunities.</p> <p>One stakeholder expressed support for more industry activity in Exmouth.</p> <p>Stakeholders identifying themselves as Woodside shareholders interested in project updates, particularly on Scarborough.</p>	

Query on domestic gas commitments for Woodside's activities.

### Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response

Whilst feedback was received, there were no specific objections or claims to a particular Woodside project or activity.

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.

### Evidence of Promotion and Event

<b>Paid social media</b> Instagram and Facebook	<b>Social media</b> Woodside North West Facebook page 14 Nov 2024
 <p><b>Would you like to know what Woodside has planned on land and sea?</b></p> <p>Let's talk about our Environment Plans.</p> <p>If you are an individual, organisation or community group whose functions, interests or activities may be affected by our proposed projects and operations, we want to hear from you.</p> <p>Share your feedback or find out more by visiting our friendly team.</p> <p><b>Ross Street Mall</b>  <b>Thursday, 14 November 2024</b>  <b>Between 8:00 am - 11:30 am</b>  <b>Exmouth WA 6707</b></p> <p></p>	 <p>Woodside North West  14 November at 08:36 · 🌐</p> <p>Good morning from sunny Exmouth! Our friendly team is at Ross Street Mall today until 11:30 am.</p> <p>Stop by and say hello if you would like to hear more about what we have planned on land and sea or our Environment Plans.</p> <p>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 Environment Plan activities.</p>
<b>Photo of the event</b>	<b>Consultation Sheets and Let's Talk newsletter</b>
	

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**Social Media Campaign Results**





Platform	Geotargeted Reach	Post Dates	Impact
Facebook	Regional: Users 18+ located within 40kms of Exmouth	9 – 14 November 2024	Reach: 20,826 Frequency: 1.15 Impressions: 23,895 All clicks: 76 Link clicks: 5 CTR%: 0.02%
Instagram	Regional: Users 18+ located within 40kms of Exmouth	9 – 14 November 2024	Reach: 19,650 Frequency: 1.10 Impressions: 21,636 All clicks: 9 Link clicks: 1 CTR%: 0.00%
Platform	Number of reactions	Number of comments	Comments Relevant to EP
Meta - Facebook	2 👍 0 shares	0 comments	0

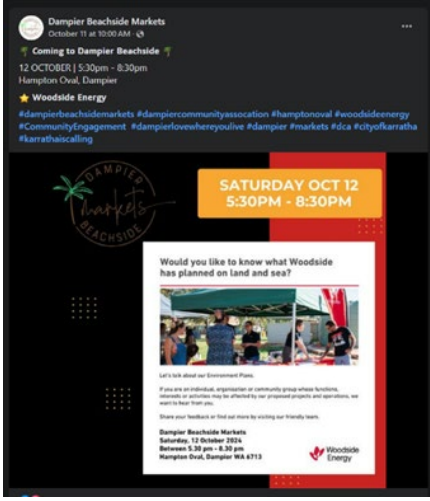
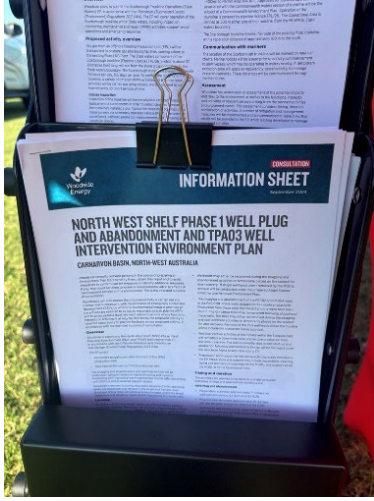
## 6.8.2 Pilbara Region

### 6.8.2.1 Dampier Beachside Markets – 12 October 2024

<b>Location</b>	<b>Dampier</b>
<b>Activity</b>	Dampier Beachside Markets - Oktoberfest
<b>Date</b>	12 October 2024
<b>Description of the consultation</b>	<p>Woodside hosted a stand at the Dampier Beachside Markets a community event bringing together local businesses selling local products, a variety of food vendors and community groups.</p> <p>The stand was staffed by members from Woodside's Corporate Affairs team. Woodside displayed a QR code on the stand, linked to the consultation activities page of the Woodside website.</p> <p>An iPad with consultation/feedback subscription prompt was made available.</p> <p>Woodside made available printed consultation information sheets on the Angel Subsea Infrastructure Removal EP.</p>
<b>Advertising and invitations</b>	<p>Woodside advertised the event 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"> <li>• Advertisement in the Pilbara News on 9 October 2024</li> <li>• Geotargeted Social media posts were published inviting public to attend on Woodside North West Facebook page</li> <li>• Social media post from the event host, Dampier Community Association was published on 11 October 2024 inviting the public to attend</li> <li>• Advertisement was displayed on community noticeboard at Lo's Café, Karratha, and Roebourne Library</li> <li>• An EP consultation banner with QR code (linked to the Consultation Activities page on the Woodside website) displayed at Woodside's stand along with current EP factsheets.</li> </ul>
<b>Estimated number of individuals / organisations consulted</b>	<p>Over 1000 community members attended the event.</p> <p>Woodside spoke to many community members, recording 6 conversations.</p>
<b>Summary of Feedback, Objection or Claim</b>	
<ul style="list-style-type: none"> <li>• General interest in progress on the Scarborough project and the future of gas in the energy transition.</li> <li>• General interest in the Carbon Capture and Storage process.</li> <li>• Interest in the Woodside community grant program</li> <li>• EP approval process discussed and why we want to talk to the community. No concerns raised.</li> <li>• General queries around employment and graduate opportunities.</li> <li>• Interest in divestment of ex-Woodside homes.</li> </ul>	
<b>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</b>	
<p>Whilst feedback was received, there were no objections or claims raised about EPs.</p> <p>Woodside's participation at the market's is part of Woodside's broader consultation approach to enable self-identification, and provide relevant persons with the opportunity to assess any impacts</p>	



on their functions, interests or activities, and provide feedback on proposed activities, which is consistent with the intended outcome of consultation (see <b>Section 5.2</b> ).	
<b>Evidence of Advertising and Invitations for Event</b>	
<b>Advertisement on Lo's Café Karratha</b>	<b>Advertisement at Roebourne Library</b>
	
<b>Photo of the event</b>	<b>Photo of Consultation Sheets and Let's Talk newsletter</b>
	

<b>Social Media Posts</b> Dampier Beachside Markets Instagram Post 11 Oct	<b>Photo of Information Sheets</b>
	

#### 6.8.2.2 Dampier Beachside Markets – 2 November 2024

Location	Dampier
<b>Activity</b>	Dampier Beachside Markets – Guy Fawkes
<b>Date</b>	2 November 2024
<b>Description of the consultation</b>	<p>Woodside hosted a stand at the Dampier Beachside Markets a community event bringing together local businesses selling local products, a variety of food vendors and community groups.</p> <p>The stand was staffed by members from Woodside’s Corporate Affairs and First Nations 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 Angel Subsea Infrastructure Removal EP.</p>
<b>Advertising and invitations</b>	<p>Woodside advertised event 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"> <li>• Advertisement in the Pilbara News on 30 October 2024 (see below)</li> <li>• Social media posts were published inviting public to attend on Woodside North West Facebook page (see below)</li> <li>• Social media post from event host, Dampier Community Association was published on 11 October 2024 inviting public to attend.</li> <li>• Advertisement was displayed on community noticeboard at Lo’s Café, Karratha, and Roebourne Library.</li> <li>• An EP consultation display with QR code (linked to the Consultation Activities page on the Woodside website) displayed at Woodside’s stand along with current EP factsheets (see below)</li> </ul>

<b>Estimated number of individuals / organisations consulted</b>	Over 1200 community members (Dampier Community Association) attended the event. Woodside spoke to many community members, recording 10 conversations.
<b>Summary of Feedback, Objection or Claim</b>	
<p>General queries around employment opportunities.</p> <p>General interest in the Scarborough progress and Browse and the future of gas in the energy transition.</p> <p>EP approval process discussed and why we want to talk to community. No concerns raised.</p> <p>General interest in the Carbon Capture and Storage process.</p> <p>Discussions around the areas housing market and related industry opportunities.</p>	
<b>Woodside's Assessment of Merits of Feedback, Objection or Claim and its Response</b>	
<p>Whilst feedback was received, there were no objections or claims raised about EPs.</p> <p>Woodside's participation at the markets is 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>	



Evidence of Advertising and Invitations for Event		
Newspaper Advertisement(s)		Social Media Campaign
Pilbara News 30 October 2024		Woodside North West Facebook and Date
		
Photo of Information Sheets		
		
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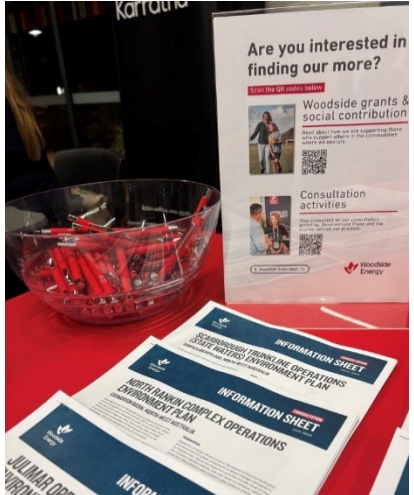
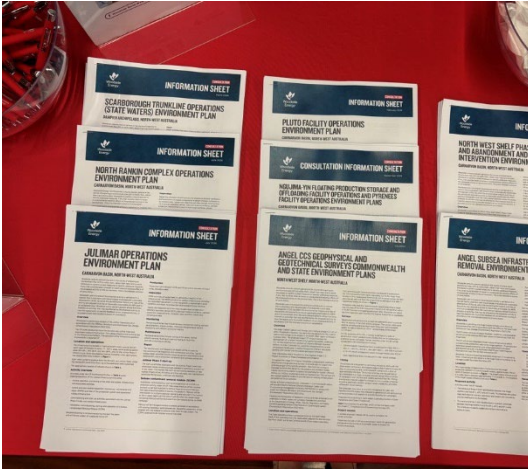
Location	Dampier
<b>Activity</b>	Dampier Beachside Markets
<b>Date</b>	Saturday, 2 November 2024
<b>Description of the consultation</b>	Community Engagement
<b>Estimated number of individuals consulted</b>	10
<b>Summary of Feedback, Objection or Claim</b>	
<ul style="list-style-type: none"> <li>Woodside's First Nations Engagement Adviser (Adviser) spoke with Elders and relevant persons from a number of Traditional Owner (TO) PBCs/groups including NTGAC, Yinggarda, Yindjibarndi, Wirrawandi and Ashburton.</li> <li>The conversations included information about Woodside's activities and related EPs including two decommissioning activities, one of which is the proposed activity outlined in this EP: <ul style="list-style-type: none"> <li>North West Shelf Phase 1 Well Plug and Abandonment, and TPA03 Well Intervention.</li> <li>Angel Subsea Infrastructure Removal (Appendix F, reference 6.1.2).</li> <li>Scarborough Operations.</li> </ul> </li> <li>The Adviser also extended an offer to further consult and meet face to face with Elders and TOs.</li> <li>Summary Information Sheets for a number of Woodside activities were made available to the public.</li> <li>Elders noted they have no feedback, objections or claims relating to the activities discussed, and were happy with the information being sent via the PBCs.</li> <li>Elders also explained their connections to the local Traditional Owner groups and their involvement within their respective PBCs/RNTBCs.</li> <li>TOs noted that upcoming AGMs, Sorry Business and Lore will impact their availability to consult over the next few months.</li> </ul>	
<b>Woodside's Assessment of Merits of Feedback, Objection or Claim and its Response</b>	
<ul style="list-style-type: none"> <li>Woodside notes and respects the feedback from Elders that they had no objections or claims relating to the discussed EP activities.</li> </ul>	

#### 6.8.2.3 Dampier Community Association, 'Who's Who in the Hood' – 18 March 2025

Location	Dampier
<b>Activity</b>	Dampier Community Association – Who's Who in the Hood
<b>Date</b>	18 March 2025
<b>Description of the consultation</b>	<p>Woodside hosted a stand at the Dampier Community Hub available to community members, sporting groups and industry representatives who provide funding opportunities in Dampier.</p> <p>The stand was staffed by members from Woodside's Corporate Affairs teams.</p> <p>Woodside displayed a QR code at the stand, linked to the 'Consultation activities' page of the Woodside website and provided hard copy versions of the March 2025 'Let's Talk' newsletter.</p> <p>Woodside made available printed consultation information sheets on the following EPs:</p> <ul style="list-style-type: none"> <li>Pluto Facility Operations Environment Plan</li> <li>Scarborough Trunkline Operations (State Waters) Environment Plan</li> <li>North Rankin Complex Operations Environment Plan</li> <li>Julimar Operations Environment Plan</li> </ul>

	<ul style="list-style-type: none"> <li>• Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans</li> <li>• Angel CCS Geophysical and Geotechnical Surveys Commonwealth and State Environment Plans</li> <li>• Angel Subsea Infrastructure Removal Environment Plan</li> <li>• North West Shelf Phase 1 Well Plug and Abandonment &amp; TPA03 Well Intervention Environment Plan</li> </ul>
<b>Advertising and invitations</b>	<p>Woodside advertised the event to enable individuals to self-identify, become aware of the community consultation, and to allow individuals to provide feedback on proposed activities, through the following:</p> <ul style="list-style-type: none"> <li>• Social media posts on the Woodside North West Facebook page inviting the public to attend (see below)</li> <li>• An EP consultation display with QR code (linked to the 'Consultation activities' page on the Woodside website) displayed at Woodside's stand along with current EP consultation information sheets (see below).</li> </ul>
<b>Estimated number of individuals / organisations consulted</b>	<p>Over 50 community members (Dampier Community Association) attended the event. Woodside spoke to many community members, recording 2 conversations.</p>
<b>Summary of Feedback, Objection or Claim</b>	
<ul style="list-style-type: none"> <li>• General queries around community grants and what is available from Woodside.</li> </ul>	
<b>Woodside's Assessment of Merits of Feedback, Objection or Claim and its Response</b>	
<p>There were no objections or claims raised about EPs.</p> <p>Woodside's participation at 'Who's Who in the Hood' is 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>	

## Evidence of promotion and event

<b>Social Media campaign</b> Woodside North West Facebook 18 March 2025	<b>Photo of event</b>
	
<b>Photo of event</b>	<b>Photo of Information Sheets</b>
	

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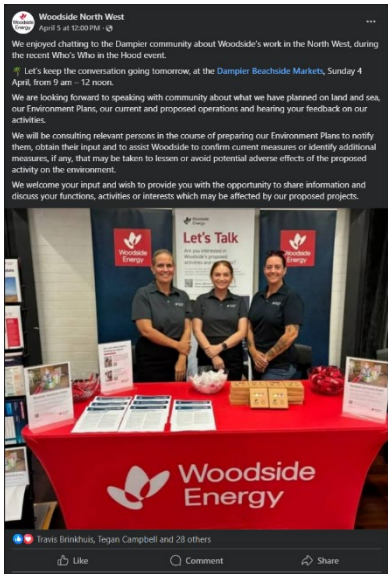


**6.8.2.4 Dampier Beachside Markets, 6 April 2025.**

Location	Dampier
Activity	Dampier Beachside Markets
Date	6 April 2025
Description of the consultation	<p>Woodside hosted a stand at the Dampier Beachside Markets a community event bringing together local businesses selling local products, a variety of food vendors and community groups.</p> <p>The stand was staffed by members from Woodside's Corporate Affairs, Environment Plan and First Nations teams.</p> <p>Woodside displayed a QR code at the stand, linked to the 'Consultation activities' page of the Woodside website.</p> <p>Woodside displayed and made available printed consultation information sheets on the following Environment Plans:</p> <ul style="list-style-type: none"> <li>• Pluto Facility Operations Environment Plan</li> <li>• Scarborough Trunkline Operations (State Waters) Environment Plan</li> <li>• North Rankin Complex Operations Environment Plan</li> <li>• Julimar Operations Environment Plan</li> <li>• Ngujima-Yin Floating Production Storage and Offloading Facility Operations and Pyrenees Facility Operations Environment Plans</li> <li>• Angel CCS Geophysical and Geotechnical Surveys Commonwealth and State Environment Plans</li> <li>• Angel Subsea Infrastructure Removal Environment Plan</li> <li>• North West Shelf Phase 1 Well Plug and Abandonment &amp; TPA03 Well Intervention Environment Plan</li> <li>• Goodwyn Alpha Geophysical and Geotechnical surveys Environment Plan</li> <li>• Okha Floating Production Storage and Offloading (FPSO) Facility Operations Environment Plan</li> </ul>
Advertising and invitations	<p>Woodside advertised the event to enable individuals to self-identify, become aware of the community consultation, and to allow individuals to provide feedback on proposed activities, through the following:</p> <ul style="list-style-type: none"> <li>• An advertisement published in the Pilbara News on 30 October 2024 (see below)</li> <li>• Social media posts on the Woodside North West Facebook page inviting the public to attend (see below)</li> <li>• A social media post from event host, Dampier Community Association, published on 11 October 2024 inviting public to attend</li> <li>• An advertisement displayed on community noticeboards at Lo's Café in Karratha, and the Karratha and Roebourne libraries</li> <li>• An EP consultation display with QR code (linked to the 'Consultation activities' page on the Woodside website) displayed at Woodside's stand along with current EP consultation information sheets (see below).</li> </ul>
Estimated number of individuals / organisations consulted	<p>Over 1200 community members (Dampier Community Association) attended the event. Woodside spoke to many community members, recording 30 conversations.</p>



Summary of Feedback, Objection or Claim
<ul style="list-style-type: none"> <li>• Queries around employment opportunities, including apprenticeship and trainee opportunities.</li> <li>• Interest in local content opportunities.</li> <li>• General interest in the Scarborough Energy Project progress and Pluto Train 2 and Train 1 modifications projects.</li> <li>• Comments made issue motivated groups views. Woodside expressed everyone has the right to share their views in a respectful and peaceful manner.</li> <li>• Conversations on the North West Shelf Project Extension including support for local community, timelines, investing partners, political views and the future of gas in the energy transition.</li> <li>• Environment Plan consultation and approval process discussed and why we want to talk to community. No concerns raised.</li> <li>• General interest in Woodside's commitment to emission reduction.,. positive feedback on meeting commitments.</li> <li>• Discussions around the area's housing market, residential and Fly in Fly out workforce.</li> <li>• Several discussions with children about what Woodside does and where gas comes from.</li> </ul>
Woodside's Assessment of Merits of Feedback, Objection or Claim and its Response
<p>Whilst feedback was received, there were no objections or claims raised about Environment Plans.</p> <p>Woodside's participation at the markets is 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>

## Evidence of promotion and event

Social Media promotion Woodside North West Facebook page, 5 April 2025	Social Media promotion Woodside North West Facebook story April 2025 Published for 24 hours
	<p><b>Would you like to know what Woodside has planned on land and sea?</b></p>  <p>Let's talk about our Environment Plans.</p> <p>If you are an individual, organisation or community group whose functions, activities or interests may be affected by our proposed projects and operations, we want to hear from you.</p> <p>Share your feedback or find out more by visiting our friendly team.</p> <p><b>Dampier Beachside Markets Sunday, 4 April 2025 Between 9:00 am - 12:00 noon Hampton Oval, Dampier, WA</b></p> 

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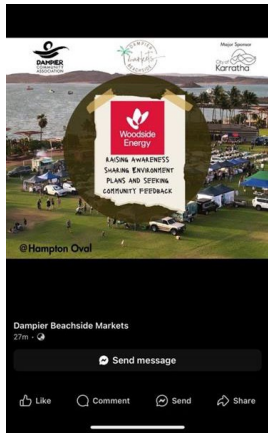



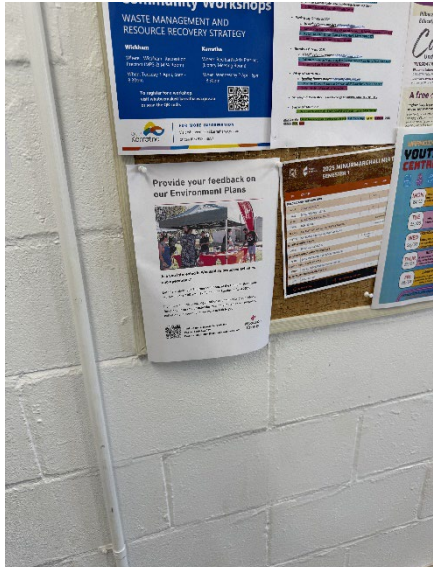
<p><b>Social Media promotion</b> Dampier Beachside Markets Facebook page, 5 April 2025</p>	<p><b>Screenshot of newspaper promotion</b> Pilbara News newspaper, 26 March edition, 2025</p>
	  <p><b>Provide your feedback on our Environment Plans</b></p> <p>Are you interested in Woodside's proposed activities and operations?</p> <p>Let's talk about our Environment Plans at the Dampier Beachside Markets from 9:00 am - 12:00 noon on Tuesday, 4 April 2025.</p> <p>If you are an individual, organisation or community group whose functions, interests or activities may be affected by our proposed activities and operations, we want to talk to you.</p> <p>Find out more or provide feedback: Phone: 1800 452 017 Email: <a href="mailto:consultation@feedback.woodside.com">consultation@feedback.woodside.com</a></p> <p>Woodside Energy</p>
<p><b>Photo of promotion</b> BP Service Station, Roebourne, 6718 Poster on display from 25 March 2025</p>	<p><b>Photo of promotion</b> Ngarliyarndu Bindirri Aboriginal Corporation Office, Roebourne, 6718. Poster on display from 25 March 2025</p>
	

Photo of promotion Ieramagadu Store community noticeboard, Roebourne, 6718. Poster on display from 3 April 2025	Photo of promotion Los Cafe community notice board, Karratha, 6714 Poster on display from 25 March 2025
	

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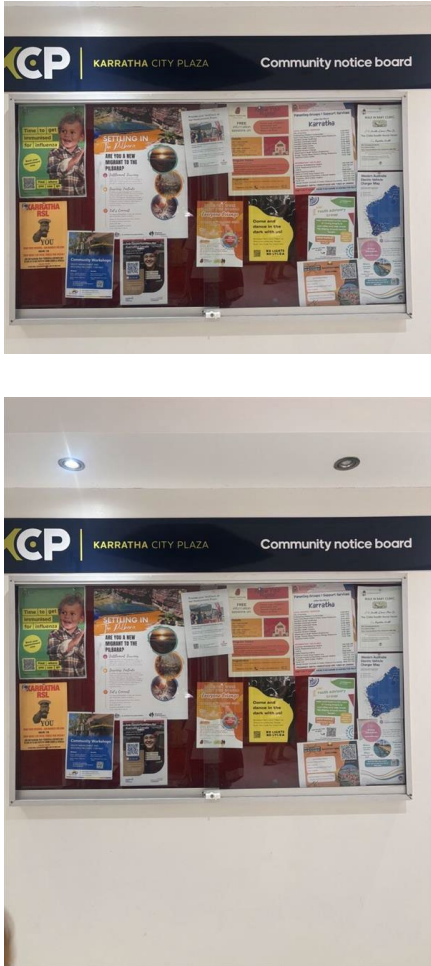
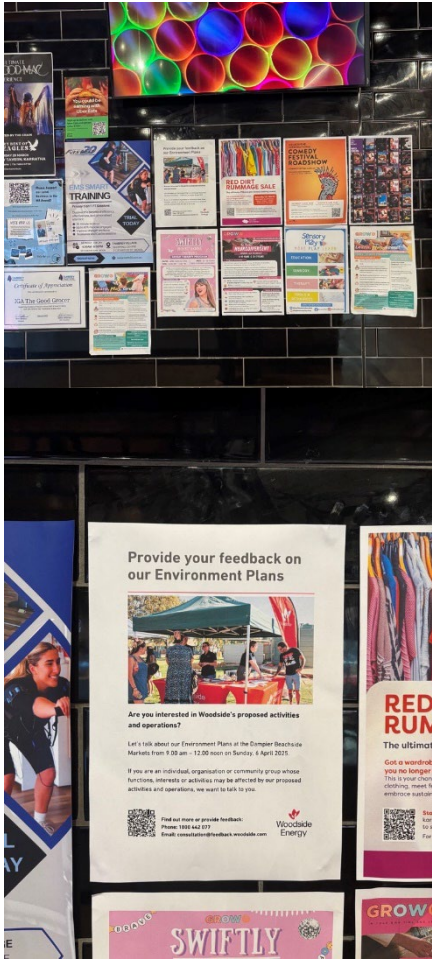
<p>Photo of promotion</p> <p>Karratha City Plaza shopping centre community notice board, Karratha, 6714</p> <p>Poster on display from 25 March 2025</p>	<p>Photo of promotion</p> <p>Good Grocer IGA shopping centre community notice board, Karratha, 6714</p> <p>Poster on display from 25 March 2025</p>
	

Photo of event Dampier Beachside Markets, a Dampier Community Association event	Photo of consultation information sheets
	
Photo of consultation information sheets	Photo of Banner with QR code to consultation information sheets
	

### Social media campaign results

Platform	Number of views	Reach	Interactions
Facebook Story	333	317	0

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6.9 Community newsletters

6.9.1 Karratha community update

Edition Q3 – 2024



# Karratha Community Update

Edition 3 | 2024



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Woodside Energy recognises Aboriginal and Torres Strait Islander peoples as Australia's first peoples.

We acknowledge the unique connection of the Traditional Custodians to land, waters and the environment where we operate in the City of Karratha. We extend this recognition and respect to First Nations peoples and communities around the world.



Earlier this year, I relocated to Karratha and commenced as Asset Manager of the North West Shelf Project's Karratha Gas Plant.

It was a real pleasure to join Woodside's local team at a time when we were celebrating 70 years of Woodside and 40 years of operations right here in the North West.

Karratha is where our story began in Western Australia and Woodside has a proud history of contribution to the place we continue to call home. This year's milestones gave me insight into the longstanding partnerships and strong relationships we've developed with the community over this time.

The North West Shelf Project has contributed more than \$300 million within the City of Karratha since our operations began. This investment in the local community and economy continues as we support partnerships and businesses like the ones you will read about in this update.

We are entering a period of change at the Karratha Gas Plant as we undertake work to prepare for the retirement of one of our LNG processing trains later this year. This is an important step in the journey ahead as we navigate the gradual decline of the North West Shelf reserves and continue to pursue opportunities to process other resource owners' gas.

As we manage the future of the North West Shelf alongside our Pluto LNG operations and the growth of the Scarborough Energy Project, we will continue to engage and collaborate with those we work with, partner with and live alongside. We look forward to engaging and involving the local community in the future of Woodside in Karratha, working together to create opportunities in the place we call home.

**Derek Paulgaard**

Asset Manager North West Shelf Onshore.

## Celebration sundowner

On the evening of 18 September, as the sun set over Karratha, we gathered with our local community partners to celebrate both Woodside's 70th year as a proud Australian company and 40 years of operations in the North West.

Our sundowner event, held at the Red Earth Arts Precinct, provided an opportunity to share our appreciation for the local community which has supported Woodside over its decades of operations in Karratha.

Woodside Executive Vice President and Chief Operating Officer Liz Wescott joined us at the event and expressed her gratitude for the role those in attendance continue to play in shaping Karratha into a thriving and connected community.

Liz also announced a one-off large grant round, supported by Woodside and its Joint Venture participants in the North West Shelf Project and the Scarborough Energy Project's Pluto Train 2.

With applications open throughout October, the Woodside Anniversary Grants will provide funding of up to \$100,000 to community groups and not-for-profit organisations in the City of Karratha to support health, liveability, sustainability and environmental outcomes.

Thank you to all who joined us in marking such a special occasion.



Stay up to date on our continued contribution to the local community

[Woodside North West](#)

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## Winyama awarded construction contract

This year, Woodside awarded its largest ever Traditional Owner construction contract to Karratha company Winyama Contracting Group (Winyama). The contract was awarded for the delivery of civil works for the Pluto Train 1 Modifications Project. Winyama will work alongside Kellogg Brown & Root Pty Ltd, the project's engineering, procurement and construction management contractor.

Winyama is a 100% Karratha-owned and 50% Indigenous-owned provider of civil, construction and mining services and renewable asset hire that prioritises spend with local and Indigenous suppliers. The name Winyama, meaning Sea Eagle in the Ngarluma language, symbolises the company's mission to provide economic opportunities and prosperity for local Aboriginal people. It is a bird that has held significance through the female line of Ngarluma majority owner Arthur Ramirez's family for generations.

Woodside Pluto Expansion Project Manager Paul Baker said Woodside was thrilled to be partnering with Winyama for the delivery of the civil works for the Pluto Train 1 Modifications Project and supporting the delivery of local business and employment outcomes for the Pilbara.

"By engaging a local Indigenous-led and owned contractor, we're securing the delivery of an important service while contributing to the local economy. The contract will also support the growth of Winyama, increasing the company's capacity to deliver services to other industries across the Pilbara," he said.

Arthur Ramirez, Winyama Chairman and Indigenous Business Manager, said the new supply agreement with Woodside was a major milestone for Winyama.

"This project will allow our team to grow by about another 65 new employees, with the majority being residential employees.

"Being engaged on the Pluto Train 1 Modifications Project will help fulfil Winyama Contracting Group's vision to increase its footprint in the region, which will enable us to increase our focus on outcomes for Aboriginal people through our reflection Reconciliation Action Plan.

"We are really proud that Woodside has chosen a local Karratha-based Indigenous business to execute a major portion of one of their largest current projects, showing they live their values and support local and Indigenous business growth in the region," he said.



## Healing comes from Country

Roebourne-based start-up Warridahs of the Ngurra (WOTN) aims to build awareness and respect for traditional bush medicine and share cultural knowledge. Meaning 'Women of Country' in Ngarluma language, WOTN was founded in 2023 by Ngarluma and Banjima woman, Kylie Mowarin.

Kylie's years of dedication to exploring the uses and benefits of native plants have seen her experiment with the ingredients in teas and ointments. The healing properties of these plants have recently been reinforced by modern scientific research conducted in partnership with Griffith University.

"We are working with Griffith University, testing two traditional plants for their antimicrobial, antioxidant and anti-inflammatory properties. So far, we are seeing very positive results," said Kylie.

With support from Woodside, Kylie recently held a bush medicine workshop on Murujuga alongside local Elders, representatives from Murujuga Aboriginal Corporation, Griffith University and a leading archaeologist.

Students from Roebourne District High School were among the attendees at the workshop at Hearnson's Cove. Kylie spoke with students about the scientific attributes of traditional medicines and their gathering methods.

"It's important to pass on our knowledge from our ancestors and for our young ones to understand our cultural connections to Country and how it can help with healing our bodies and minds," said Kylie.

Liz Ritchie, Roebourne District High School Principal, said the students' involvement in the workshop was part of Connected Learning, a program developed with support from the Karratha and Roebourne Education Initiative to link classroom curriculum with cultural knowledge and community.

"We are deeply committed to delivering education that is culturally respectful and meaningful. This work can only be achieved when we

have the guidance, support and expertise of our families, community advisors, and Elders.

"Participating in the Warridahs of the Ngurra workshops enables our young people to demonstrate practical applications of the learning that occurs in class and on-Country throughout the term.

"The day was an authentic example of how curriculum delivery in a culturally responsive and connected way leads to deep two-way learning of skills and knowledge," she said.

Looking ahead, WOTN plans to create a healing hub in Roebourne, which aims to balance education, wellbeing, and a sustainable business by building upon a range of products Kylie has been developing with native plants.

"We also plan to provide on-Country tours, which will provide economic prosperity for our people through employment and educating women in how to run a business," said Kylie.



Stay up to date on our continued contribution to the local community

Woodside North West

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## KREI supports student revision seminars

For more than 15 years, Woodside and its Joint Venture participants have contributed to programs aimed at enhancing academic achievements among students in the City of Karratha. Since the establishment of the Karratha and Roebourne Education Initiative (KREI), a key focus has been to bridge the gaps in opportunities available to local students and their peers in metropolitan areas.

During the recent school holidays, the KREI supported a group of Year 12 students from St Luke's College to travel to Perth for a 10-day educational experience. The local students participated in a series of intensive revision seminars, designed to prepare them for their WACE examinations. With small class sizes and personalised help from specialist teachers, students were able to delve into the course material and discuss valuable exam strategies.

While in Perth, the students dedicated time outside the seminars to learn about life at university. They visited several campuses where they engaged in pre-arranged faculty workshops and met with student ambassadors to gain valuable insights into the university environment, academic workload, course offerings and entry pathways.

The students also took the opportunity to explore the university accommodation colleges, helping them to envision their potential future living arrangements and supporting their readiness for their upcoming transition to higher education.

St Luke's College Upper School Pathways Coordinator Carol Potter said this year's revision seminars were an outstanding success.

"We are very fortunate to have the support of the Karratha and Roebourne Education funding, which made both the revision seminars and university visits possible. Our students are now feeling more prepared ahead of their final examinations and transition into tertiary education, away from their family to a big city," she said.

Supporting local students from St Luke's College and Karratha Senior High School to travel to Perth for revision seminars is just one example of Woodside and its Joint Venture participants' contribution to schools in the City of Karratha. Earlier this year, Woodside announced the renewal of the KREI, with five-year community partnership agreements. The renewal builds on a strong history of collaboration and provides continued investment to help local high school and primary school students thrive.



Students from St Luke's College on KREI supported Perth visit.

## Scarborough trunkline installation a success

This October, Woodside marked an important milestone as it announced the completion of the Scarborough Energy Project's trunkline installation. Once operational, the 433 km trunkline will transport gas from the offshore Scarborough field to the onshore Pluto LNG facility for processing.

Reaching depths of up to 1400 m, the trunkline took around 12 months to install and had numerous teams and contractors contributing to the successful work program.

Woodside Executive Vice President and Chief Operating Officer Australia Liz Westcott said the trunkline was a critical piece of infrastructure for the Scarborough Energy Project.

"The completion of installation is a significant accomplishment, reflecting the dedication of all involved in achieving this project milestone.

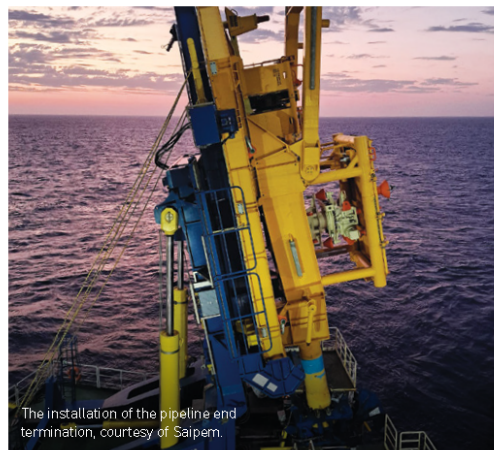
"With the last components of the trunkline in place, the focus will be maintained on safely executing the remaining project scopes to support the targeted first Scarborough LNG cargo in 2026," she said.

Following the successful installation of the trunkline, work will now commence on the pre-commissioning in preparation for hook-up of the subsea infrastructure.

The Scarborough Energy Project was 73% complete in October<sup>1</sup>, and is set to help meet demand for the reliable energy the world needs today and into the future. This includes up to 225 terajoules a day of domestic gas supply into the Western Australian market from operations in Karratha.

These volumes will be processed by the recently delivered Pluto Train 2 domestic gas module. The important piece of infrastructure, which arrived in Karratha and was installed in early September, weighs over 1500 tonnes and will connect to the domestic gas export compressor. The domestic gas module is one of the 51 modules that is targeted to be delivered to site by the end of this year.

<sup>1</sup> Excluding Pluto Train 1 modifications.



The installation of the pipeline end termination, courtesy of Saipem.

## Let's Talk

### Our plans, Your say

Head to [woodside.com/consultation-activities](https://www.woodside.com/consultation-activities) to read our latest edition and Environment Plan consultation information.

We welcome feedback on your relevant functions, activities or interests. Alternatively, you can contact us at [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com) or on 1800 442 977.

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## 6.9.2 Let's Talk – Our Plans, Your Say

### 6.9.2.1 Let's Talk November 2024 Edition

#### Hard copy distribution – November 2024 edition

Date	Location	Event
12 November	Exmouth CLG	Exmouth CLG meeting
15 November	Community engagement Karratha/Roebourne	
15 November	Karratha Visitor Centre	
15 November	Dampier Community Association office	
15 November	City of Karratha office	
15 November	Woodside Roebourne office	
15 November	Exmouth Community Drop in	
27 November	KDCCI opportunities	KDCCI Breakfast Briefing
29 November	Karratha CLG	Karratha CLG meeting

## Let's Talk November 2024 edition



# Let's Talk

## Our Plans, Your Say

Edition 4 | November 2024



### The rundown

#### North West Shelf Visitors Centre welcomes Wanpata



The Ngarla people at the North West Shelf Visitors Centre.

We acknowledge the unique connection that First Nations communities have to land, waters and the environment and seek to consult them in relation to our operations and proposed projects.

As part of our ongoing consultation with First Nations groups, Woodside Energy recently hosted 13 Traditional Owners from Ngarla country at the North West Shelf Visitors Centre, so they could see our operations first hand.

The Ngarla people are the Traditional Owners of an area of land east of Port Hedland that covers the De Grey and Pardoo pastoral stations in Western Australia's North West.

Woodside Manager First Nations Engagements, Michael Roe said that Wanpata Aboriginal Corporation as the Prescribed Body Corporate for the Ngarla people, had been identified as a

relevant person to consult with on previously submitted and present Environment Plans.

"The Ngarla people were interested in learning more about the world of gas, and as part of the consultation process were invited to Karratha for a visit to the North West Shelf Visitors Centre overlooking the Karratha Gas Plant."

"This provided an occasion to build trust and understanding whilst providing the opportunity to provide feedback on our activities. In this case we were consulting on the five-yearly review of the Pluto Facility Operations Environment Plan," said Michael.

An accepted Environment Plan is required in order for Woodside to carry out activities. Meaningful conversations with First Nations people are documented and make up part of an Environment Plan

### Munro's Mack10k Fishing Competition

Munro's Mack10k 2024 Fishing Competition, held in Onslow from 24-25 August 2024, saw hundreds of anglers and fishing enthusiasts from across Australia enter into the running for a chance to reel in \$10,000.

The event doubles up as a research initiative, spearheaded by Rechshwest's Fishing for Science program and supported by Woodside Energy.

Working with the Department of Primary Industries and Regional Development, the Rechshwest science team collected biological samples from mackerel caught by competitors, providing insight into the health of the local fish population.

Read more about the annual competition, hosted by the Ashburton Angler Fishing Club by visiting: [rechfishwest.org.au](http://rechfishwest.org.au)



submitted to regulatory bodies for assessment ahead of continued operation. Wanpata Aboriginal Corporation Chairperson, Mary-Jo Coppin said, "the trip was really informative with good consultation, well organised and we felt very welcome at the facility."

A key element of Woodside's consultation efforts is our willingness to be flexible and adaptable to suit the audience in our overall efforts to avoid or minimise potential impacts from our operations.

To stay updated, subscribe for future editions at [woodside.com/what-we-do/consultation-activities](http://woodside.com/what-we-do/consultation-activities)



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## Community spotlight

### Wangarri Crane and Equipment Hire

Murujuga Commercial Limited's (MCL) first Pilbara business, Wangarri Crane and Equipment Hire (Wangarri), has been awarded the contract for supply and maintenance of cranes and forklifts for the Pluto Train 2 Project, the onshore component of the Scarborough Energy Project.

Established by MCL as a joint venture with Boddington's Hire, Wangarri provides a range of lifting equipment that includes cranes, forklift trucks, reach stackers and telehandlers for hire to the resource sector and other industrial clients across the Pilbara.

One of five commercial ventures managed by MCL, Wangarri forms a portfolio of businesses and commercial ventures that aim to provide a strong and economic future for its Murujuga members.

Wangarri means "Coming to Life" in Yindjibarndi, which represents MCL's journey as it moves from a start-up phase toward building business streams that align to the strategic goals and objectives of the Murujuga Aboriginal Corporation.

Bechtel, the appointed contractor for the Pluto Train 2 project, delivers engineering, procurement, construction and commissioning, has awarded contracts to local Indigenous businesses, such as Wangarri to deliver a variety of work scopes.


"We are very happy to be working with Wangarri on Pluto Train 2. We deeply value this local contract and appreciate their professionalism and dedication to providing safe and high-quality cranes and forklifts," said Bechtel Pluto Train 2 site manager Terry Klowss.

Jig Albert, MCL Managing Director said the contract with Bechtel on Pluto Train 2 had been an enormous stepping stone for their business.

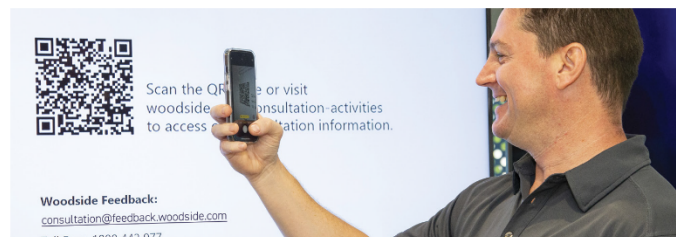


"We have been contracted to provide a range of the smaller cranes for the project. Mostly this consists of Franna pick and carry cranes, however we are also providing a 160 tonne all-terrain crane and a small three tonne Maeda spider crane, as well as the ongoing maintenance of these machines," said Jig Albert.

"It has given our business the confidence to invest in our own equipment which will drive equity for the business and in turn provide a direct return to Murujuga Aboriginal Corporation members."

 [Learn more about Wangarri Crane and Equipment Hire and their work on the Scarborough Energy Project](#)

## The importance of consultation



"Like safety, consultation continues to be a core focus for NOPSEMA," Sue McCarrey, CEO, NOPSEMA ([Source: The Regulator, 2024, Issue 2](#))

Consultation is a key component of Woodside's environmental planning and can involve a two-way process with relevant persons who wish to provide feedback on operations or proposed offshore activities.

Consultation enables Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. It is a key requirement of Australia's offshore environmental management framework and Environment Regulations.

An appropriate consultation approach which meets regulatory requirements enables

Regulators such as the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for Commonwealth activities, or the Department of Energy, Mines, Industry Regulation and Safety for state activities, to assess and accept Environment Plans (EP).

Woodside is committed to open and transparent consultation and does this by providing clear information on proposed activities, assessing and responding to objections or claims about the activity, and providing a reasonable period of time and opportunity for a relevant person to provide feedback.

If required due to the nature and scale of a proposed activity, Woodside undertakes additional consultation activities over a longer period to ensure a reasonable period


of time period and sufficient information has been provided. This allows for an informed assessment of the possible consequences of the activity on stakeholders' (referred to as a 'relevant person' under Commonwealth regulations) functions, interests or activities.

### Subscribe to stay up-to-date

On Woodside's website we enable members of the public to subscribe to receive information about EPs as it becomes available.

Subscribing is a great way to stay informed about updates and important information related to Woodside's activities. It also provides the public with timely notifications about new projects, environmental initiatives, community engagements, and consultation information sheets for proposed activities.

Woodside has updated its consultation email address to [consultation@feedback.woodside.com](mailto:consultation@feedback.woodside.com)

 To subscribe to Woodside's consultation activities [click here](#) and enter your details on the page.

Join the conversation at [woodside.com/what-we-do/consultation-activities](https://www.woodside.com/what-we-do/consultation-activities)





## Community conversations

Woodside consults local communities at local events. If you see our friendly team out-and-about, please come and chat to us about our operations and projects.

Recently our team engaged with community members at pop-up Environment Plan information sessions in Karratha and Exmouth and participated in the Dampier Beachside Markets. Our teams also recently met with stakeholders in Broome, Onslow and Roebourne.

We also meet quarterly with Community Liaison Groups in Karratha and Exmouth where we communicate updates and consult with community members on a range of relevant activities.

If you're interested in what Woodside has planned on land and sea, come and chat to our friendly team and follow the Woodside North West Facebook page for updates including our Karratha Community Update newsletter.

**Stay up to date on our continued contribution to the community we call home.**

SEARCH ON FACEBOOK OR [CLICK HERE](#)

**Woodside North West**

## Have your say

Woodside consults relevant persons while 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 impacts of the proposed activity on the environment.

We welcome your input so please contact us if you'd like to discuss your functions, interests or activities which may be affected by our proposed activities.

Environment Plan	Activity Type	Location	Consultation Dates
<b>NWS Phase 1 Well P&amp;A and TPA03 Well Intervention</b>	Decommissioning and Project	125 - 138 km north / north-west of Dampier	27 September to 30 October 2024
<b>Angel Subsea Infrastructure Removal</b>	Decommissioning	125km north of Dampier	30 September to 1 November 2024



You can access our consultation information, provide feedback and subscribe for updates by [clicking here](#)

## Progress snapshot

Environment Plan	Activity Type	Date Accepted	Status
Minerva Decommissioning and Field Management	Decommissioning	14 October 2024	In progress
NWS and Julimar Exploration Wellhead Decommissioning	Decommissioning	3 July 2024	In progress
Angel Operations (Lambert West Drilling)	Operations / Project	25 June 2024	In scheduling
Julimar Development Phase 3 Drilling and Subsea Installation	Project	10 June 2024	In scheduling
Stybarrow Decommissioning and Field Management / End State	Decommissioning	23 May 2024	In progress
Goodwyn Alpha Geophysical and Geotechnical Surveys	Project	30 May 2024	In progress
Griffin Field Decommissioning (End State) (Griffin Field Deviation / Griffin Leave In-situ)	Decommissioning	1 March 2024	In progress
Stybarrow Plug and Abandonment	Decommissioning	21 December 2023	In progress
Scarborough Seabed Intervention and Trunkline Installation	Project	13 December 2023	In progress
Scarborough WA-61-L and WA-62-L Subsea Infrastructure Installation	Project	8 December 2023	In progress
Scarborough Drilling and Completions	Project	1 December 2023	In progress
Griffin Decommissioning and Field Management	Decommissioning	21 November 2023	In progress

You can view Commonwealth Environment Plans for approved activities and operations by visiting: [info.nopsema.gov.au/home/approved\\_projects\\_and\\_activities](https://info.nopsema.gov.au/home/approved_projects_and_activities)



## Milestone celebrations at FeNaCING Festival

The City of Karratha recently hosted the FeNaCING Festival, bringing together community and celebrating the region's key industries – iron (Fe), sodium chloride, commonly known as salt (NaCl), and natural gas (NG).

Woodside Energy, along with its joint venture partners, proudly supported the event, with a pavilion that featured Woodside's 70th anniversary as a company and 40th year of safe and reliable operations in the North West.

Woodside CEO Meg O'Neill made a special appearance at the festival, meeting local community members and helping with a range of giveaways on offer.

Meg praised the event organisers who successfully celebrated the community spirit that makes Karratha a great place to live and work.

"We know that such a significant milestone could only be achieved with the support of our people and the Karratha community," she said. "I was really thrilled to have the opportunity to join our team in the Woodside marquee as they engaged with the community about issues that matter to them and answered questions about our operations and growth projects."

Many attendees who visited the Woodside marquee expressed curiosity about Woodside's Environmental Plans and other topics including Carbon Capture and Storage, the Scarborough Energy Project and the development of Browse.

Woodside's active participation in events like the FeNaCING Festival supports our consultation approach to engage the community on our current business activities, including opportunity to provide feedback on our Environment Plans.



Join the conversation at [woodside.com/what-we-do/consultation-activities](https://www.woodside.com/what-we-do/consultation-activities)



KDDCI Breakfast Briefing Event



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## **APPENDIX G OIL SPILL PREPAREDNESS AND RESPONSE STRATEGY SELECTION AND EVALUATION**

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**Woodside  
Energy**

# **Oil Spill Preparedness and Response Mitigation Assessment for Angel Subsea Infrastructure Removal Environment Plan**

Corporate HSE

Hydrocarbon Spill Preparedness

April 2025  
Revision 0

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## EXECUTIVE SUMMARY

Woodside Energy Ltd. (Woodside) have developed an oil spill preparedness and response position for the Angel Subsea Infrastructure Removal activities, 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
Worst Case Credible Scenario (WCCS)	<b>Credible Scenario 1 (CS-01): Short-Term (Instantaneous) Surface Release of Marine Diesel Oil (MDO)</b>  This spill is a short-term (instantaneous) uncontrolled surface release of 500 m <sup>3</sup> of marine diesel, representing loss of hydrocarbon containment after a vessel collision, at the Angel-3 wellhead location (19° 23' 26.031" S, 116° 37' 47.254" E), closest wellhead to Glomar Shoals.		Section 2.2
Hydrocarbon Properties	<b>MDO</b>  MDO 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); 35% should evaporate within the first 24 hours (180 °C < BP < 265 °C) (41% in total within first 24 hours); and 54% should evaporate over several days (265 °C < BP < 380 °C). Approximately 5% of the oil is shown to be persistent. Under calm conditions the majority of the remaining oil on the water surface 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.		Section 7.7.2 of the EP  Appendix A of the First Strike Plan
Modelling Results	A quantitative, stochastic assessment has been undertaken for credible spill scenario 1 to help assess the environmental risk of a hydrocarbon spill from a vessel collision.  For the modelled scenario, a total of 200 replicate simulations were completed over an annual period to test for trends and variations in the trajectory and weathering of the spilled oil, with an equal number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter).		Section 2.3.4
	Minimum time to shoreline impact (above 100 g/m <sup>2</sup> )	NA – modelled scenario confirmed no shoreline contact above 100 g/m <sup>2</sup>	
	Largest volume ashore at any single Response Protection Area (RPA) (above 100 g/m <sup>2</sup> )	NA – modelled scenario confirmed no shoreline contact above 100 g/m <sup>2</sup>	
	Largest total shoreline accumulation (above 100 g/m <sup>2</sup> ) all shorelines	NA – modelled scenario confirmed no shoreline contact above 100 g/m <sup>2</sup>	
Net Environmental Benefit Analysis	Monitor and evaluate, Source Control via vessel Shipboard Oil Pollution Environment Plan (SOPEP), and 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

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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 risks presented in Sections 2 and 3, without the implementation of considered additional, alternative or improved control measures.	Section 6
--	--	-----------

# 1 INTRODUCTION

## 1.1 Overview

Woodside Energy Ltd. (Woodside) has developed its oil spill preparedness and response position for the Angel Subsea Infrastructure Removal 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 2023* (Environment Regulations) relating to hydrocarbon spill response arrangements.

- Angel Subsea Infrastructure Removal Environment Plan (EP)
- Hydrocarbon Spill Australia Regulatory Framework
- Angel Subsea Infrastructure Removal Oil Pollution Emergency Plan (OPEP) including:
  - Oil Pollution First Strike Plan (FSP)
  - Operational and Scientific Monitoring Bridging Implementation Plan (OSM BIP)
  - 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 PAP is shown in Figure 2-3.

## 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 monitor and evaluate operations and the operational NEBA (Section 4). Planning, coordination and resource management are initiated by the Corporate Incident Management Team (CIMT). 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 so 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.

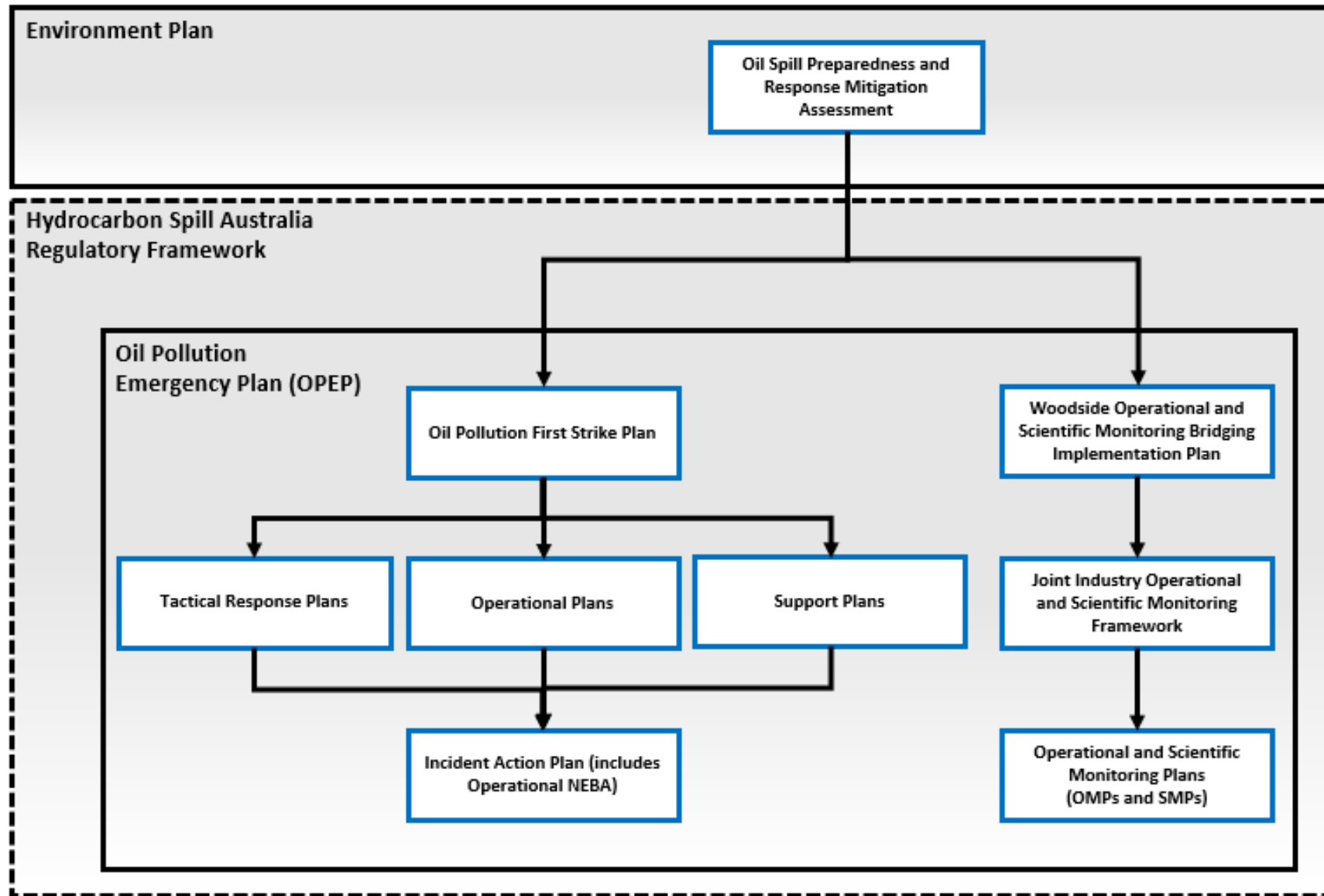


Figure 1-1: Woodside hydrocarbon spill document structure

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Table 1-1: Hydrocarbon Spill preparedness and response – document references

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
<b>Angel Subsea Infrastructure Removal Environment Plan (EP)</b>	Demonstrates that potential adverse impacts on the environment associated with the PAP (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 4 (Identification and evaluation of environmental risks and impacts, including credible spill scenario)  EP Section 6 (Performance outcomes, standards and measurement criteria)  EP Section 7 (Implementation strategy – including emergency preparedness and response, and Reporting and compliance)	
<b>Hydrocarbon Spill Australia Regulatory Framework</b>	Describes the arrangements and processes adopted by Woodside when responding to a hydrocarbon spill from a petroleum activity.	Regulatory agencies  Woodside internal	All	
<b>Oil Spill Preparedness and Response Mitigation Assessment for the Angel Subsea Infrastructure Removal Environment Plan (this document)</b>	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 (CMT): 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.	
<b>Angel Subsea Infrastructure Removal Oil Pollution First Strike Plan (FSP)</b>	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) specific to the event is developed.  Oil Pollution First Strike Plans are intended to be the first document used to provide immediate	Site-based IMT for initial response, activation and notification.  CMT for initial response, activation and notification.  CMT: Control function in an ongoing spill response for activity-specific response information.	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.  Details and forms for use in immediate response. Activation process for oil spill trajectory	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
	guidance to the responding Incident Management Team (IMT).		modelling, aerial surveillance and oil spill tracking buoy details.	
<b>Operational Plans</b>	<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>Monitor and Evaluate</p> <p>Source Control via vessel</p> <p>Shipboard Oil Pollution Environment Plan (SOPEP)</p> <p>Oiled Wildlife Response</p>
<b>Operational and Scientific Monitoring (OSM) Bridging Implementation Plan<sup>1</sup></b>	<p>Describes a program of monitoring oil pollution that will be adopted in the event of a hydrocarbon spill incident (Level 2–3) to marine waters.</p> <p>It is aligned to the Joint Industry Operational and Scientific Monitoring Framework (APPEA, 2021) and describes how this Framework applies to Woodside's activities and spill risks in Australian waters.</p>	<p>Site-based IMT for initial activation and notification.</p> <p>OSM Service Providers</p> <p>Regulatory agencies</p>	<p>Mobilisation and notification process for OSM, including activation of OSM Service Providers</p> <p>Information on first-strike scientific monitoring priorities</p> <p>OSM arrangements and capability</p> <p>Permitting and access requirements for OSM</p>	

<sup>1</sup> In accordance with Regulation 56 of the Environment Regulations, the Woodside *Operational and Scientific Monitoring Bridging Implementation Plan* was provided to NOPSEMA with the North Rankin Complex Operations Environment Plan in August 2024 and is publicly available here: <https://docs.nopsema.gov.au/A1125894>

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
<b>Tactical Response Plans</b>	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.	Modelling confirmed no shoreline impacts at response thresholds.  Available tactical response plans are listed in ANNEX E: Tactical Response Plans.
<b>Support Plans</b>	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  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 scenario, 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 Angel Subsea Infrastructure Removal 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.

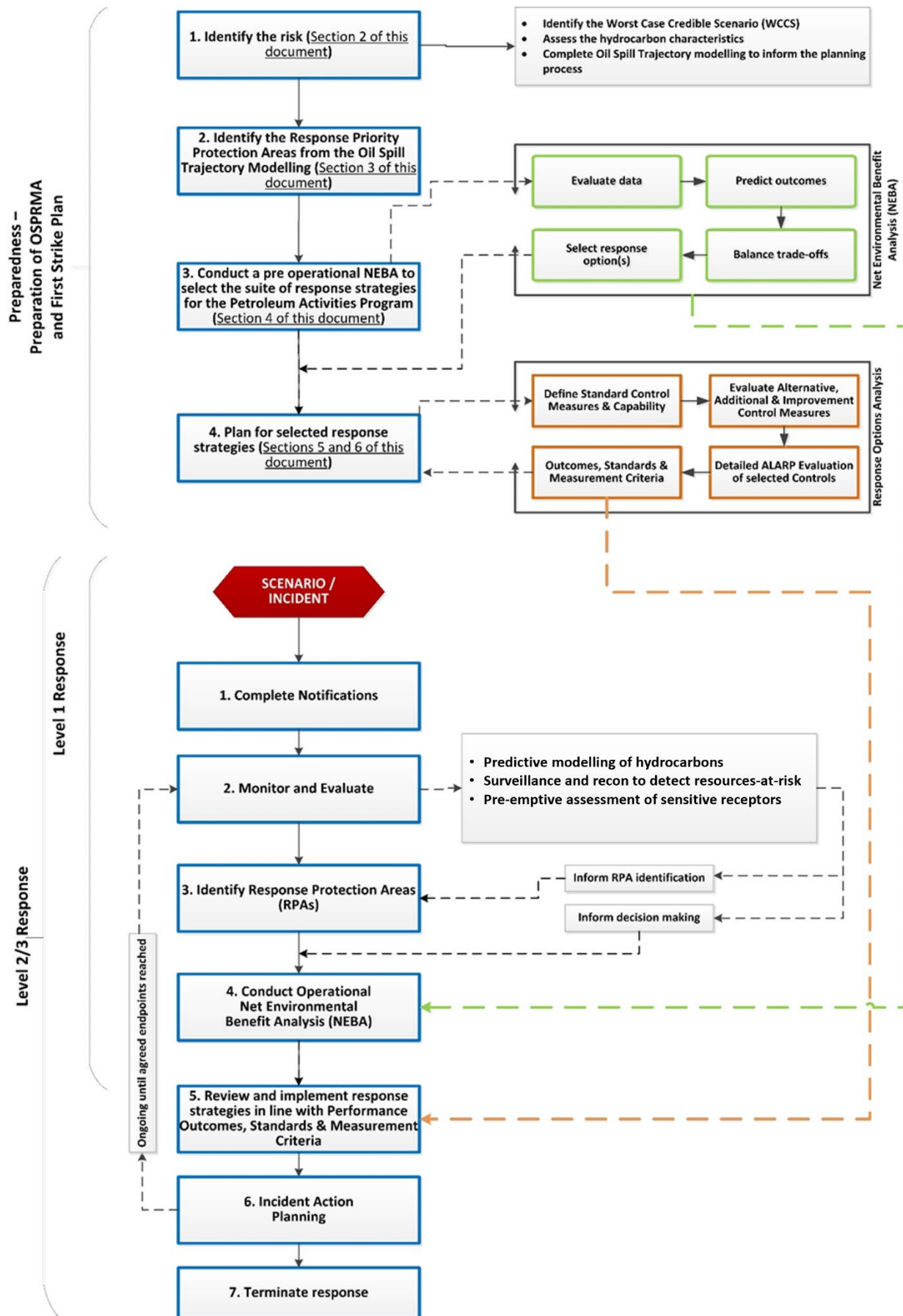


Figure 2-1: Response planning and selection process

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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 <ul style="list-style-type: none"><li>• identification of worst-case credible scenario(s) (WCCS).</li><li>• spill modelling for WCCS.</li></ul>   |
| Section 3. | IDENTIFY RESPONSE PROTECTION AREAS (RPAs) <ul style="list-style-type: none"><li>• areas predicted to be contacted at concentration &gt;100 g/m<sup>2</sup>.</li></ul>   |
| Section 4. | NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA) <ul style="list-style-type: none"><li>• pre-operational NEBA (during planning/ALARP evaluation): this must be reviewed during the initial response to an incident to confirm its accuracy.</li><li>• selected response techniques prioritised and carried forward for ALARP assessment.</li></ul>   |
| Section 5. | HYDROCARBON SPILL ALARP PROCESS <ul style="list-style-type: none"><li>• determines the response need based on predicted consequence parameters.</li><li>• details the environmental performance of the selected response options based on need.</li><li>• sets the environmental performance outcomes, environmental performance standards and measurement criteria.</li></ul>  |
| Section 6. | ALARP EVALUATION <ul style="list-style-type: none"><li>• evaluates alternative, additional, and improved options for each response technique to demonstrate the risk has been reduced to ALARP.</li><li>• provides a detailed ALARP assessment of selected control measure options against:<ul style="list-style-type: none"><li>– predicted cost associated with implementing the option</li><li>– predicted change to environmental benefit</li><li>– predicted effectiveness / feasibility of the control measure.</li></ul></li></ul> |
| Section 7. | ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES <ul style="list-style-type: none"><li>• evaluation of impacts and risks from implementing selected response options.</li></ul>  |
| 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.

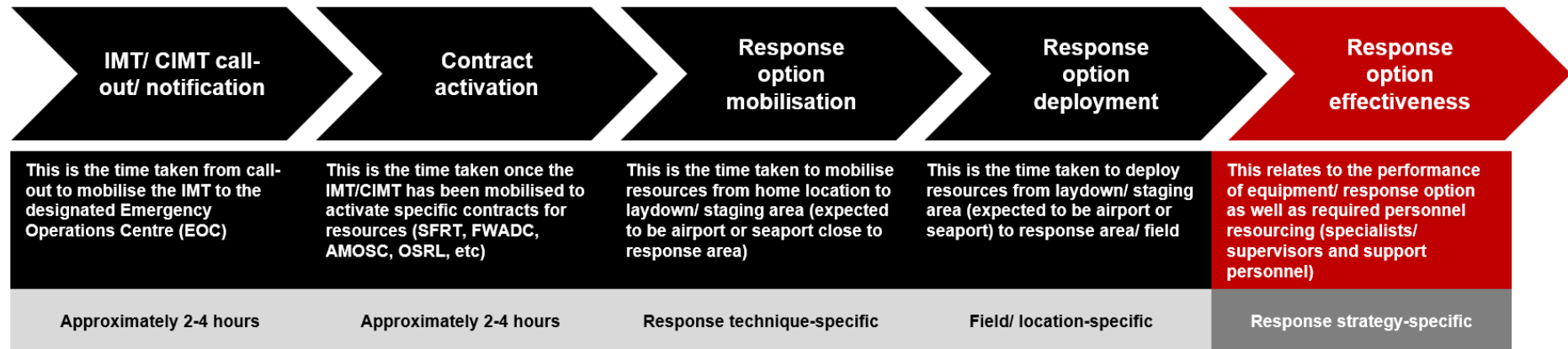


Figure 2-2: Response planning assumption – timing, resourcing and effectiveness

## 2.2 Environment plan risk assessment (credible spill scenario)

The potential hydrocarbon release scenario from the PAP has been identified during the risk assessment process (Section 7.7 of the EP). Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 7 of the EP. One unplanned event or credible spill scenario for the PAP has been selected as representative across types, sources and incident/response levels, up to and including the worst-case credible scenario (WCCS). The WCCS for the activity is then used for response planning purposes. 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 well has already been permanently plugged thus pose no spill risk for the activity. Breach of project vessel fuel tanks due to a collision with a third-party vessel remains a credible spill risk however. A scenario for a spill of 500 m<sup>3</sup> MDO within the PAP area has been modelled at the location closest to an identified sensitive receptor as detailed in Table 2-1 and Figure 2-3.

The selection of WCCS for OSM planning purposes is discussed in ANNEX C: PAP OSM Activity Specific Requirement and Verification of OSM-BIP Adequacy.

**Table 2-1: Petroleum Activities Program credible spill scenario**

Credible Spill Scenarios	Scenario selected for planning purposes	Scenario description	Maximum credible volume released (liquid m <sup>3</sup> ) <sup>1</sup>	Incident level	Hydrocarbon type	Residual proportion	Residual volume (m <sup>3</sup> )
CS-01	Yes	Instantaneous release after a vessel collision at the Angel-3 wellhead	500 m <sup>3</sup>	2	MDO	5.0%	25 m <sup>3</sup>

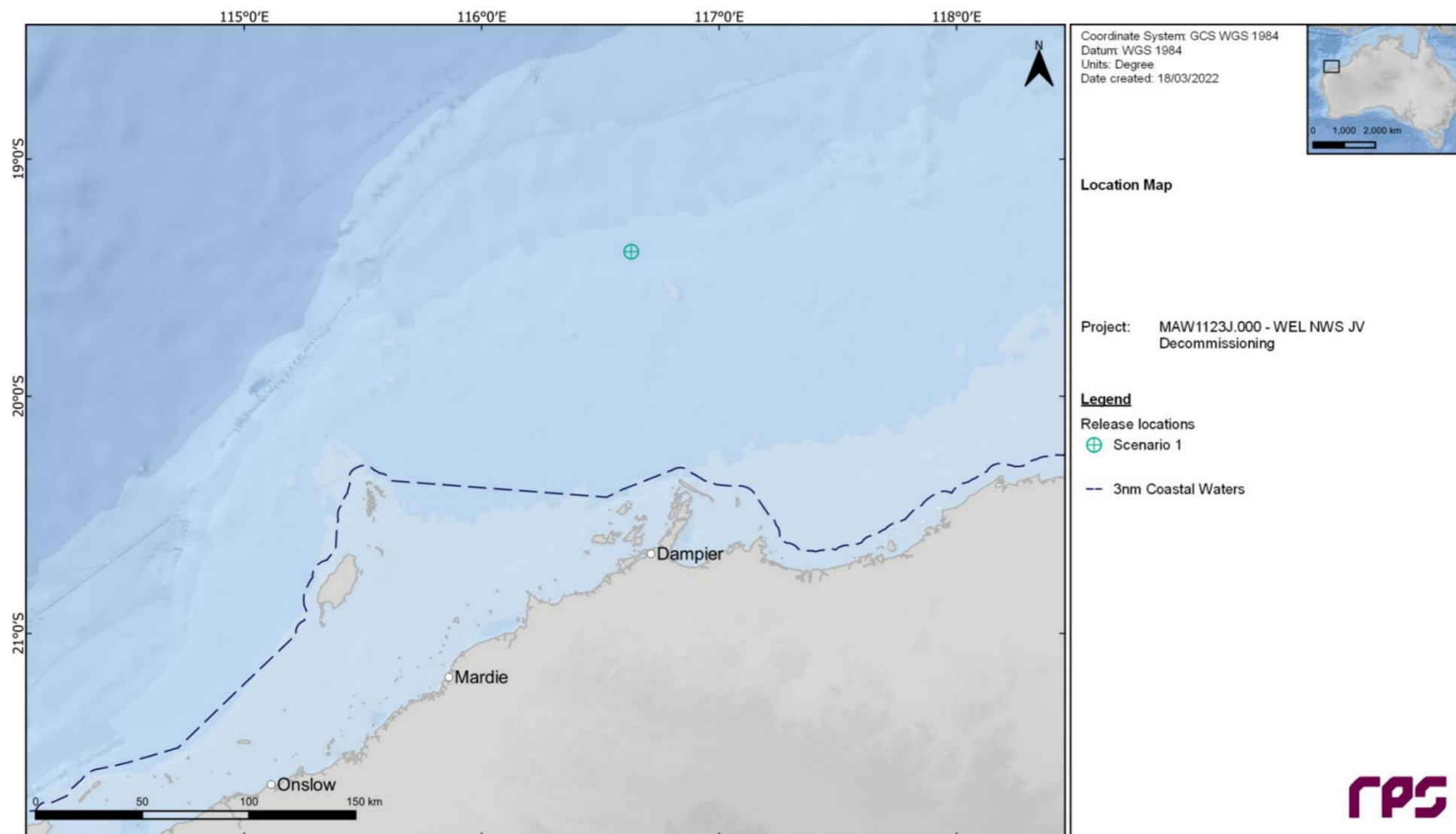


Figure 2-3: Location of Credible Scenario-01

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## 2.2.1 Hydrocarbon characteristics

Hydrocarbon characteristics, including modelled weathering data and ecotoxicity, are included in Section 7.7.2 of the EP.

### Marine Diesel Oil

MDO is typically classed as an International Tanker Owners Federation (ITOPF) Group I/II oil. Group I/II oils are non-persistent and tend to dissipate completely through evaporation within a few hours and do not normally form emulsions.

MDO 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); 35% should evaporate within the first 24 hours (180 °C < BP < 265 °C); and 54% should evaporate over several days (265 °C < BP < 380 °C). Approximately 5% of the oil is shown to be persistent. If released in the marine environment and in contact with the atmosphere (i.e. a surface spill), at the modelled sea temperature of 27°C and air temperature of 25°C (which are representative of the conditions in this region), it is predicted that approximately 41% by mass of this oil would 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.

## 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

A quantitative, stochastic assessment has been undertaken for the credible spill scenario outlined in Table 2-1 to help assess the environmental consequences of a hydrocarbon spill.

The results of the modelling can be used to demonstrate that a spill of the same volume within the same permit area, but closer to sensitive receptors, has an Environment that May Be Affected (EMBA) that is not predicted to include any surface slicks above threshold volumes entering WA state waters, or any shoreline contact or accumulation at response thresholds. Basing the impact assessment for a vessel collision scenario on this modelling is considered reasonable as it reflects a worst-case scenario and still does not predict impacts above response thresholds.



A total of 200 replicate simulations were run over an annual period to test for trends and variations in the trajectory and weathering of the spilled oil, with an equal number of replicates completed using samples of metocean data that commenced within each calendar quarter (50 simulations per quarter). Further details relating to the assessments for the scenario can be found in Section 7.7.2 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 scenario. 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 <sup>2</sup> )	Dissolved hydrocarbon (ppb)	Entrained hydrocarbon (ppb)	Accumulated hydrocarbon (g/m <sup>2</sup> )
Diesel	10	50	100	100

### 2.3.2 Deterministic modelling

Deterministic modelling is undertaken where initial stochastic modelling has indicated that floating oil is present at an impact threshold of 50 g/m<sup>2</sup> and/or where there are shoreline accumulations at an impact threshold of 100 g/m<sup>2</sup>. The deterministic modelling outputs are then used to scale the required capability for the offshore (containment and recovery and dispersant) and/or shoreline responses. Deterministic modelling was therefore not undertaken and stochastic modelling has been used to scale the response.

### 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.

In the event of an actual response, 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/m<sup>2</sup>) (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 <sup>2</sup> )	Description	Bonn Agreement Oil Appearance Code	Mass per area (m <sup>3</sup> /km <sup>2</sup> )
>10	Predicted minimum threshold for commencing monitor and evaluate activities and operational monitoring <sup>2</sup>	Code 3 – Dull metallic colours	5 to 50
50	Predicted minimum floating oil threshold for containment and recovery and surface dispersant application <sup>3</sup>	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 <sup>2</sup> )	Description	National Plan Guidance on Oil Contaminated Foreshores	Mass per area (m <sup>3</sup> /km <sup>2</sup> )
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/m<sup>2</sup>. 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 approx. 100 g/m<sup>2</sup>) (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, approx. 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.

<sup>2</sup> Monitor and evaluate activities 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.

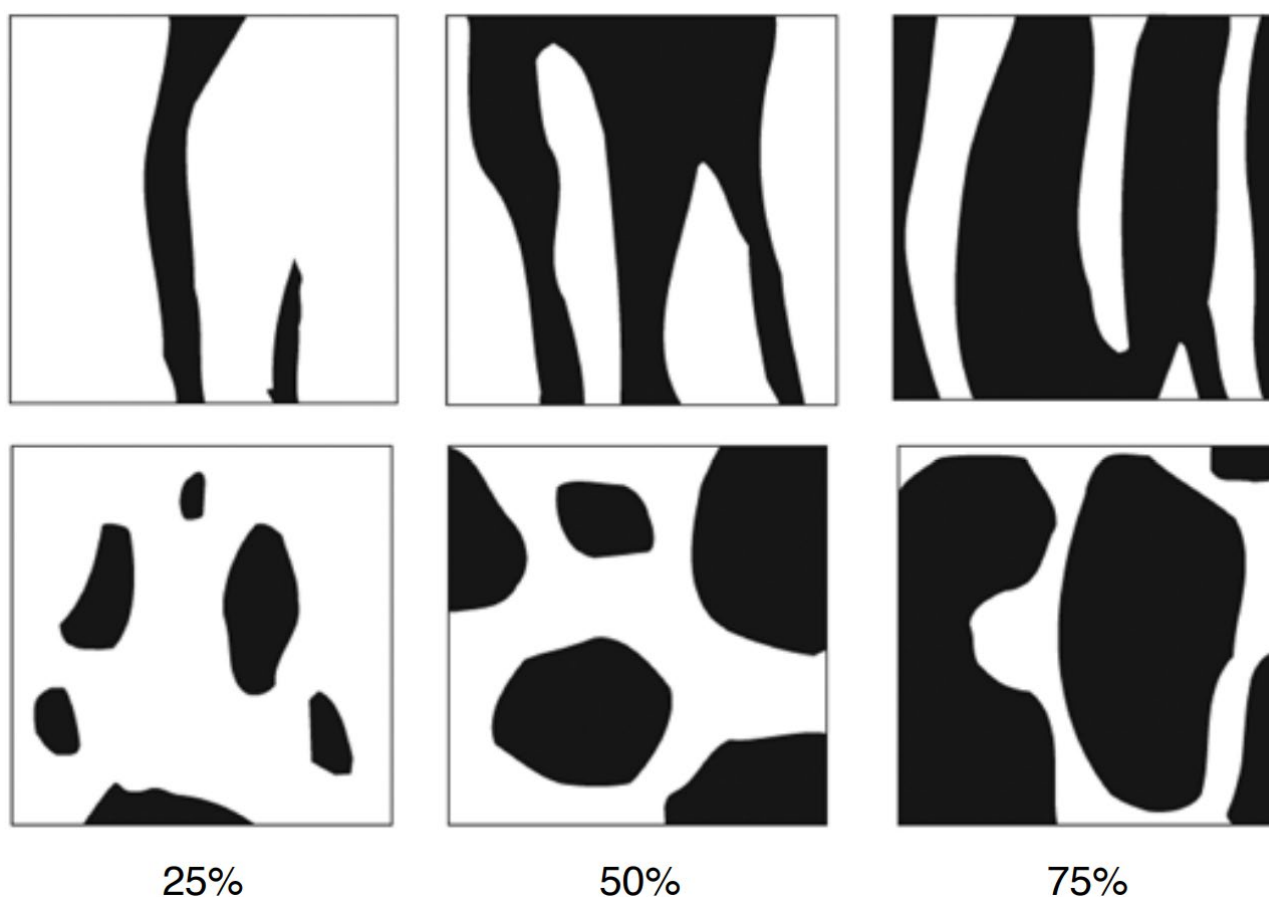
<sup>3</sup> At 50 g/m<sup>2</sup>, containment and recovery and surface dispersant application operations are not expected to be particularly effective. This threshold represents a conservative approach to planning response capability and containing the spread of surface oil.

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).

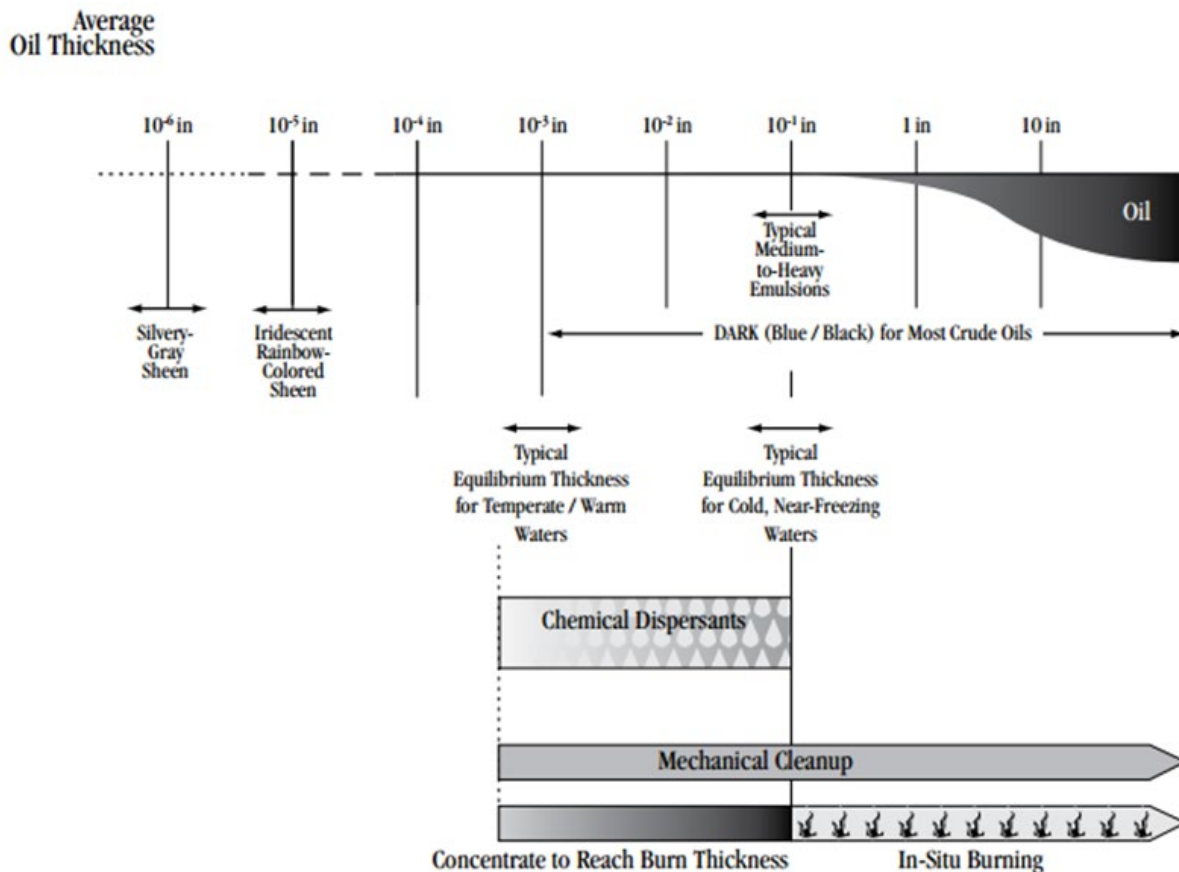
Figure 2-4 below from AMSA's Identification of Oil on Water – Aerial Observation and Identification Guide (AMSA, 2014) shows expected percent coverage of surface hydrocarbons as a proportion of total surface area. Wind-rows, heavy oil patches and tar balls, for example, must be considered, as they influence 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/m<sup>2</sup> was chosen as an average/equilibrium thickness for offshore response operations (50 g/m<sup>2</sup> 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)**

Wind and waves influence the feasibility of mechanical clean-up operations, dropping the effectiveness significantly because of entrainment and/or splash-over as short period waves develop beyond two to three feet (0.6 to 0.9 m) in height. Waves and wind can also be limiting factors for the safe operation of vessels and aircraft.

### 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
10,000*	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 (10,000 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

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10,000 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 – 10,000 cSt at sea temperature above pour point are sometimes possible to disperse, with products beyond 10,000 cSt at sea temperature below pour point are generally impossible to disperse.

To support decision making and response planning, a threshold of 10,000 cSt at sea temperature was chosen as a conservative estimate of maximum viscosity for surface dispersant spraying operations.

The MDO spill scenario will not reach the 10,000 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 stochastic results in **Table 2-5**.

**Table 2-5: Worst case credible scenario modelling results**

Scenario description	Results
	CS-01
<b>WCCS – total volume released</b> Refer to Section 2.1.1 for detailed hydrocarbon characteristics	Hydrocarbon release caused by a vessel collision. Instantaneous surface release of 500 m <sup>3</sup> of MDO
<b>WCCS – residual volume remaining post-weathering</b>	5% residual component (25 m <sup>3</sup> )
<b>Location</b>	Lat: 19° 23' 26.031" S, Long: 116° 37' 47.254" E
<b>Stochastic modelling results</b>	
<b>Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m<sup>2</sup>)</b>	NA – no floating hydrocarbon contact with the offshore edge(s) at or above 10 g/m <sup>2</sup> under the credible spill scenario.
<b>Minimum time to commencement of hydrocarbon accumulation at any shoreline receptor (at a concentration of 100 g/m<sup>2</sup>)</b>	NA – no shoreline accumulation predicted at or above 100 g/m <sup>2</sup> under the credible spill scenario.
<b>Maximum cumulative hydrocarbon volume accumulated at any individual shoreline receptor (at a concentration of 100 g/m<sup>2</sup>).</b>	NA – no shoreline accumulation at any RPA predicted at or above 100 g/m <sup>2</sup> under any credible spill scenario.
<b>Maximum cumulative hydrocarbon volume accumulated across all shoreline receptors contacted by accumulated hydrocarbons (at a concentration of 100 g/m<sup>2</sup>)</b>	NA – no shoreline accumulation predicted at or above 100 g/m <sup>2</sup> under any credible spill scenario.
<b>Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100 ppb)</b>	54 hours until Glomar Shoals is contacted above 100 ppb.

Modelling for CS-01 results in some surface hydrocarbons at >50 g/m<sup>2</sup> in open waters up to 21 km from the spill location but is not predicted to contact any RPAs. The use of offshore recovery techniques i.e. surface dispersant and containment and recovery, are not considered feasible for MDO spills due to rapid spreading and weathering due to its highly volatile nature and as a result of the local metocean conditions. The use of dispersant would unnecessarily add chemicals to the marine environment without providing a net environmental benefit, and corralling MDO via offshore containment and recovery is deemed unsafe for response personnel due to its high volatility. The use of vessels within a surface slick would also contaminate the vessel and may lead to secondary contamination as the vessel transits through unaffected areas.

There is no shoreline contact predicted which is significantly lower than feasible response thresholds of >100 g/m<sup>2</sup>.

Modelling predicts entrained contact at Glomar Shoals within 54 hours. Entrained oil is not used to scale response planning as it cannot be recovered from the water column, however, may be used to inform the spatial scale of the Operational and Scientific Monitoring Program (OSM).

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 (> 1.5 m waves) and high ambient temperatures.

### 3 IDENTIFY RESPONSE PROTECTION AREAS (RPAs)

In a response, monitor and evaluate techniques – 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.

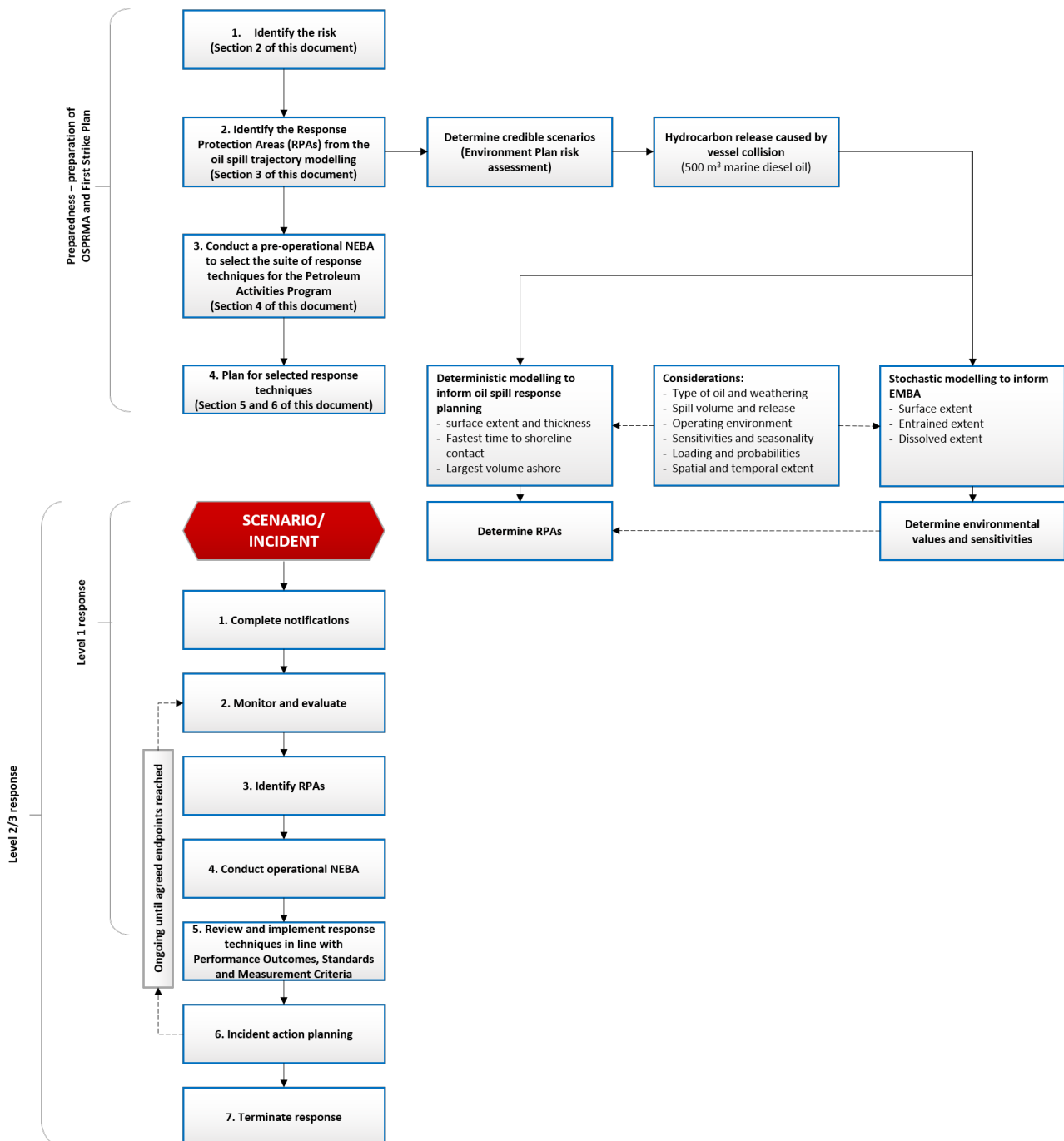


Figure 3-1: Identify Response Protection Areas (RPAs) flowchart

#### 3.1 Identified sensitive receptor locations

Section 4 of the EP includes the list of sensitive receptor locations that have been identified by stochastic modelling as meeting the requirements outlined below:

- receptors with the potential to incur surface, entrained or shoreline accumulation contact above environmental impact thresholds
- receptors within the EMBA which meet the following:

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- 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)

Response Protection Areas (RPAs) are selected on the basis of their environmental (ecological, social, economic, cultural and heritage) values and sensitivities and considering the minimum response thresholds (detailed in Section 2.3.3.1) together with the ability to conduct a response.

Based on the stochastic modelling selected for this activity, no floating hydrocarbons or shoreline accumulations are predicted at feasible response thresholds ( $>50 \text{ g/m}^2$  and  $>100 \text{ g/m}^2$  respectively) at any RPA for the duration of a spill event.

Monitor and evaluate techniques will, however, be undertaken from the outset of a spill to assess the nature of the spill, track its location and inform the need for any additional monitoring and/or response techniques. It will also inform if or when the spill enters State Waters and/or control of the incident passes to statutory authorities e.g. WA DoT or AMSA. If monitor and evaluate techniques does identify RPAs at risk of impact during a real spill event, TRPs for a shoreline response will be drafted in advance for any RPAs with a contact time of  $<14$  days.

Sensitive receptors are presented in the existing environment description and impact assessment section of the EP (Section 5 and Section 7 respectively) for the spill scenario. The pre-operational NEBA (ANNEX A: Net Environmental Benefit Analysis detailed outcomes) considers the results from the stochastic modelling so all feasible response techniques are considered in the planning phase.

## 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.

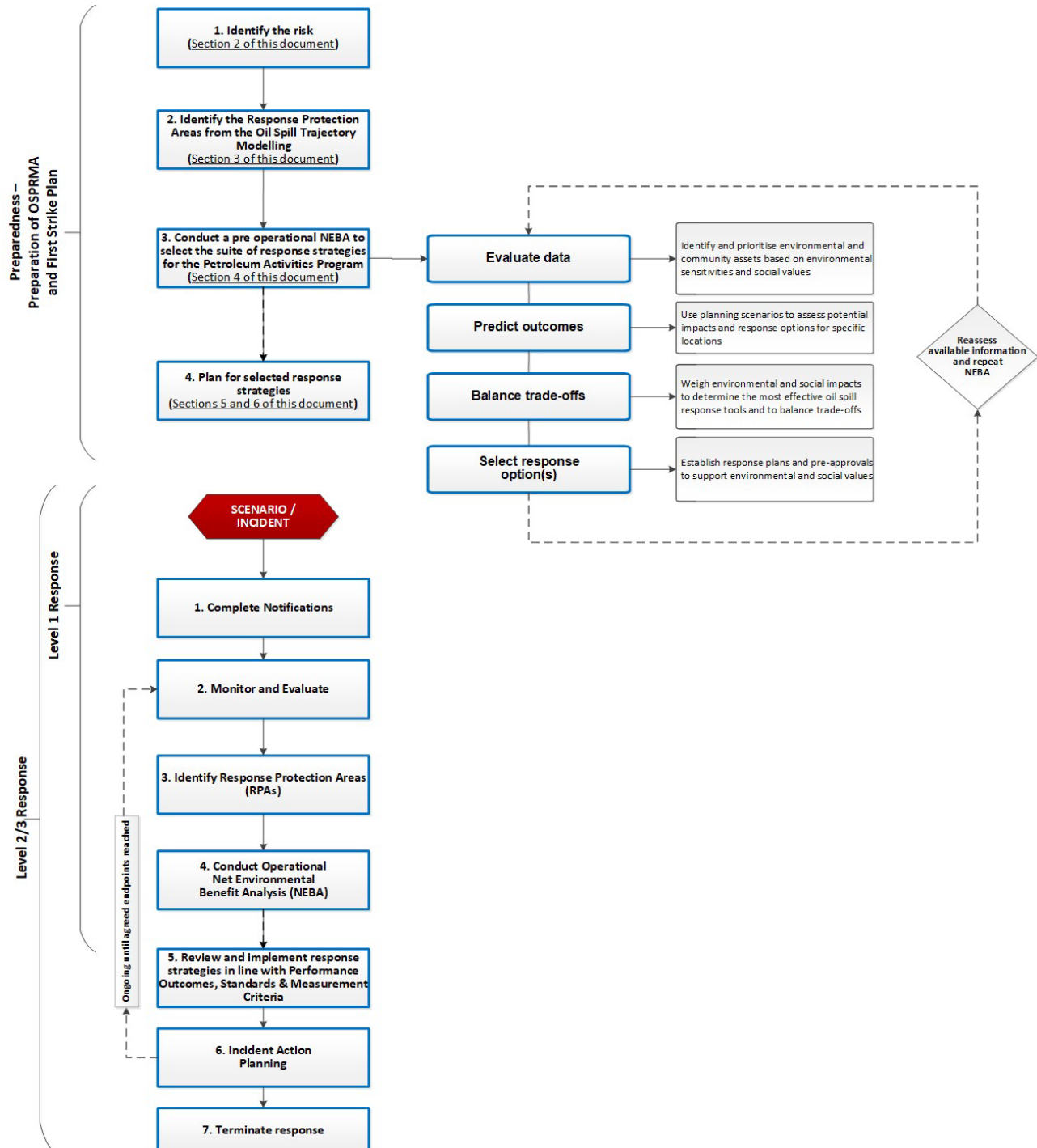


Figure 4-1: Net Environmental Benefit Analysis (NEBA) flowchart



## 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 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 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.

### 4.1.1 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 **Section 3**.

## 4.2 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.

## 4.3 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.

## 4.4 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.

### 4.4.1 Determining potential response options

The available response techniques based on current technology can be summarised under the following headings:

- Monitor and evaluate
- Source control via vessel SOPEP
- 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
- Oiled wildlife response (including hazing)

Support functions may include:

- Waste management
- Operational and scientific monitoring (routinely implemented for spills if the OMP and SMP initiation criteria are met).

Table 4-1 includes 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 MDO as a result of vessel collision (CS-01)

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
<b>Hydrocarbon: MDO</b>				
<b>Monitor and evaluate</b>	Will be effective in tracking the location of the spill, informing if/when it has entered State Waters, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include: <ul style="list-style-type: none"> <li>Predictive modelling of hydrocarbons to assess resources at risk – used throughout spill. ‘Ground-truthed’ using the outputs of all other monitoring techniques;</li> <li>Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill;</li> <li>Pre-emptive assessment of sensitive receptors at risk – triggered once operational monitoring informs likely RPAs at risk.</li> </ul>	Monitoring of a MDO 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).	<b>Yes</b>	Monitoring the spill will be necessary to: <ul style="list-style-type: none"> <li>validate trajectory and weathering models</li> <li>determine the location and state of the slick</li> <li>provide forecasts of spill trajectory</li> <li>determine appropriate response techniques</li> <li>determine effectiveness of response techniques</li> <li>confirm impact pathways to receptors</li> <li>provide regulatory agencies with required information.</li> </ul>
<b>Source Control via Vessel SOPEP</b>	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 is likely to be instantaneous and source control will be limited to what the vessel or facility can safely achieve to prevent further spillage whilst responding to the incident.	<b>Yes</b>	Ability to stop the spill at source will be dependent upon the specific spill circumstances and vessel configuration, and whether or not it is safe for response personnel to access/isolate the source of the spill.
<b>Surface Dispersant Application</b>	Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors. Dispersant can also enhance biodegradation and may reduce VOCs in some circumstances therefore reducing potential health and safety risk to responders. Dispersant can increase dispersed/entrained hydrocarbons which can potentially have higher toxicity to biota in shallow water than naturally dispersed hydrocarbons. Subsurface oil plume likely to increase in size resulting in greater spatial extent of entrained oil. Entrained oil could potentially impact on sensitive shallow water receptors e.g. corals, which otherwise may have been unaffected.	Whilst modelling of a 500 m <sup>3</sup> spill of MDO for this activity predicts that there may be some hydrocarbons present at the 50 g/m <sup>2</sup> threshold at Montebello AMP and in open waters (up to 21 km southwest from the spill location), surface dispersant application is not deemed to be a feasible response technique for spills of MDO as dispersant droplets tend to pass through the thin surface films without binding to the hydrocarbon. Additionally, the volatility of MDO would make it prone to rapid spreading and evaporation and therefore the use of surface dispersant would not provide an environmental benefit. Its use would increase dispersed/entrained hydrocarbon levels unnecessarily exposing subsea species. Furthermore, this technique may be prevented from being undertaken due to personnel safety issues arising from predicted high local concentrations of atmospheric volatiles.	<b>No</b>	The MDO will rapidly evaporate and disperse naturally. Therefore, application of dispersant would unnecessarily introduce additional chemicals to the marine environment. Any additional entrainment would also increase exposure of subsea species and habitats to hydrocarbons.
<b>Containment and Recovery</b>	Containment and recovery has an effective recovery rate of 5 to 10% when a hydrocarbon encounter rate of 25 to 50% is achieved at BAOAC 4 and 5. It has the potential to reduce the magnitude, probability of, extent of, contact with and accumulation of hydrocarbons on shoreline receptors. It also has the potential to reduce the magnitude and extent of contact with submerged receptors by entrained/dissolved hydrocarbons.	MDO is prone to rapid spreading and evaporation and does not tend to form emulsions. Additionally, whilst modelling of a 500 m <sup>3</sup> spill of MDO for this activity predicts that there may be some hydrocarbons present at the 50 g/m <sup>2</sup> threshold at Montebello AMP and in open ocean (up to 21 km southwest from the spill location), containment and recovery is not deemed to be a feasible response technique for spills of marine diesel. Furthermore, the volatile nature of MDO is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon thus this response technique is deemed unsuitable for this activity, particularly with the predicted residue of 25 m <sup>3</sup> .	<b>No</b>	Containment and recovery would be an inappropriate response technique as it requires the spilled hydrocarbon to be BAOAC 4 or 5 with a 50 to 100% coverage of 100 g/m <sup>2</sup> to 200 g/m <sup>2</sup> . Corraling a volatile hydrocarbon such as MDO is also deemed unsafe for response personnel thus this response strategy is not considered feasible.
<b>In situ Burning</b>	In situ burning is only effective where minimum slick thickness can be achieved.	Use of in situ burning as a response technique for MDO is unfeasible as the minimum slick thickness cannot be attained due to rapid spreading and evaporation. In addition, there is a limited window of opportunity in which this technique can be applied (prior to evaporation of the flammable volatiles) which is unlikely to be achieved. Furthermore, entering a volatile environment to undertake this technique would be unsafe for response personnel.	<b>No</b>	MDO characteristics are not appropriate for the use of in situ burning and would unnecessarily cause an increase in the release of atmospheric pollutants.
<b>Mechanical Dispersion</b>	Mechanical dispersion involves the use of a vessel's propeller wash and/or fire hose to target surface hydrocarbons to encourage/speed up dispersion into the water column.	Whilst mechanical dispersion may assist the dissipation of light hydrocarbons, it is unlikely to provide any additional benefit over the natural wind and wave action typically observed in the offshore environment. Furthermore, the volatility of the MDO will make the vicinity of the spill unsafe for response personnel, and the use of vessels within a surface slick will contaminate the vessel and may cause secondary contamination as the vessel transits through unaffected areas.	<b>No</b>	No additional benefit over the natural wind and wave action typically observed in the offshore environment. Furthermore, the use of vessels within a surface slick may contaminate the vessel and may cause secondary contamination.

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
<b>Shoreline Protection and Deflection</b>	Shoreline protection and deflection can be effective at preventing contamination of at-risk areas.	An MDO spill would be prone to rapid spreading and evaporation and modelling predicts that no shoreline receptors are at risk of contact at response threshold – maximum predicted contact is 0.3 g/m <sup>2</sup> . Furthermore, the volatile nature of marine diesel is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon. Monitor and evaluate techniques will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.	<b>No</b>	Stochastic modelling does not predict shorelines at risk of contact at or above response thresholds of >100 g/m <sup>2</sup> levels. Monitor and evaluate techniques will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.
<b>Shoreline Clean-up</b>	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines. To be optimally effective, a level of 250 g/m <sup>2</sup> is needed before a realistic shoreline clean-up response can be executed.	An MDO spill would be prone to rapid spreading and evaporation and modelling predicts that no shoreline receptors will be contacted at threshold – any minor contact is significantly below any feasible response thresholds of >100 g/m <sup>2</sup> (maximum predicted contact is 0.3 g/m <sup>2</sup> ). Furthermore, the volatile nature of marine diesel is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon. Monitor and evaluate techniques will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.	<b>No</b>	Stochastic modelling does not predict shoreline contact at or above response thresholds of >100 g/m <sup>2</sup> levels therefore, shoreline clean-up would not be feasible. Monitor and evaluate techniques will, however, be deployed from the outset of a spill to track the spill location and fate in real-time.
<b>Oiled Wildlife Response</b>	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 fauna from being contaminated and through rehabilitation of fauna already subject to contamination.	Due to the likely volatile atmospheric conditions surrounding a MDO spill, response options would be limited to hazing for the safety of response personnel. Any rehabilitation of oiled fauna can only be undertaken by trained specialists.	<b>Yes</b>	The modelling undertaken predicts that no identified sensitive receptor locations will be impacted above response thresholds thus it is unlikely that this technique would be required. However, if fauna is at risk of contamination, oiled wildlife response will be undertaken as and where needed.

## 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* (2024) 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 (km<sup>2</sup>) and available surface hydrocarbon volumes (m<sup>3</sup>) 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:

- 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 Monitor and evaluate

Monitor and evaluate techniques include 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.

Techniques may include:

- Predictive modelling of hydrocarbons to assess resources at risk
- Surveillance and reconnaissance to detect hydrocarbons and resources at risk
- Pre-emptive assessment of sensitive receptors at risk

Woodside maintains an Operational Monitoring Operational Plan. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. The Operational Plan includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Dampier, Port Hedland, Onslow and Exmouth to the spill event location means that multiple logistical options are available to monitor a spill in relatively short timeframes. The primary mobilisation base for initial monitoring activities would be Dampier. However, in the unlikely event of an extended spill with potential to impact receptors further afield, monitoring activities may also be mobilised from Exmouth, Onslow, Port Hedland and Broome.

### 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:

- Monitor and evaluate will be undertaken from the outset of a spill. This is needed to assess the nature of the spill and track its location. The data collected from the monitor and evaluate techniques will inform the need for any operational monitoring, deployment of response techniques and may assist post-spill scientific monitoring. It also informs if/when the spill has entered State Waters and control of the incident passes to WA DoT.
- Modelling data for WCCS indicated that concentrations equal to or greater than the 1 g/m<sup>2</sup> and 10 g/m<sup>2</sup> thresholds could potentially be found, in the form of slicks, up to 53 km and 47 km south from the spill sites, respectively.
- Practicable techniques that could be used for this scenario include Predictive modelling of hydrocarbons to assess resources at risk and Surveillance and reconnaissance to detect hydrocarbons and resources at risk. Pre-emptive assessment of sensitive receptors at risk and Shoreline assessment (SCAT) would be utilised if any sensitive shoreline receptors are deemed to be at risk of impact.
- The time to contact for entrained hydrocarbons greater than 100 ppb is 54 hours at Glomar Shoals.
- 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 functions. These should be reviewed and updated regularly.
- The duration of the spill would be instantaneous with response operations extending until the hydrocarbon discharge has ceased, surface hydrocarbons are no longer visible, and no additional response or clean-up of wildlife or habitats is predicted.

### 5.1.2 Environmental performance based on need

Table 5-1: Environmental performance – Monitor and evaluate

Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture (COP) 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 5.7)
1	Oil spill trajectory modelling	1.1	Initial modelling available within six hours using the Rapid Assessment Tool	1, 3B, 3C, 4
		1.2	Detailed modelling available within four hours of RPS Response receiving information from Woodside	
		1.3	Detailed modelling service available for the duration of the incident upon contract activation	
2	Tracking buoy	2.1	Tracking buoy located on facility/ lead vessel and ready for deployment 24/7	1, 3A, 3C, 4
		2.2	Deploy tracking buoy from facility/ lead vessel 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 monitor and evaluate strategies	1, 3B, 4
3	Satellite imagery	3.1	Contract in place with third-party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service	1, 3C, 4
		3.2	Third-party provider will confirm availability of an initial acquisition within two hours	1, 3B, 3C, 4
		3.3	First image received with 24 hours of Woodside confirming to third-party provider its acceptance of the proposed acquisition plan	1
		3.4	Third-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 monitor and evaluate techniques	1, 3B, 4
		3.6	Satellite Imagery services available and employed during response	1, 3C, 4
4	Aerial surveillance	4.1	Two trained aerial observers available to be deployed by day 1 from resource pool	1, 2, 3B, 3C, 4
		4.2	One aircraft available for two sorties per day, available for the duration of the response from day 1	1, 3C, 4
		4.3	Observer to compile report during flight as per first strike plan. Observers report available to the IMT within two hours of landing after each sortie	1, 2, 3B, 4
5	Pre-emptive assessment of sensitive receptors	5.1	10 days prior to any impact, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 2 specialists from resource pool in establishing the status of sensitive receptors	1, 2, 3B, 3C, 4

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Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture (COP) 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 5.7)
		5.2	Daily reports provided to IMT on the status of the receptors to prioritise RPAs and maximise effective utilisation of resources	1, 3B, 4

The control measures and capability of Woodside and its third-party service providers are shown to support monitor and evaluate techniques up to and including the identified WCCS. This is demonstrated by the following:

- Woodside has a documented, structured and tested capability for monitor and evaluate activities 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 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 a 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.

### 5.2.1 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 7.7.2 of the EP. The vessel master's roles and responsibilities are described in EP Section 8.3.

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.

### 5.3 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 will act as the 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, for level 2/3 spills, and 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 will be the 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.

#### 5.3.1 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/m<sup>2</sup> for floating, and 100 g/m<sup>2</sup> 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 scenario at 10 g/m<sup>2</sup> for floating, and 100 g/m<sup>2</sup> for shoreline 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 5-2** 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 Angel Subsea Infrastructure Removal Environment Plan.

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.

**Table 5-2: Key at-risk species potentially in Response Protection Areas and open ocean**

Species	Montebello Marine Park	Open ocean
Marine turtles	✓	✓
Whale sharks	✓	✓
Seabirds and/or migratory shorebirds	✓	✓
Cetaceans – migratory whales	✓	✓
Cetaceans – dolphins and porpoises	✓	✓
Dugongs	✓	✓
Sharks and rays	✓	✓

The following statements identify the key parameters upon which a wildlife response need can be based:

- There is no floating oil at predicted at any threshold for the duration of the spill.
- There is no shoreline contact predicted at any threshold for the duration of the spill.
- 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 between medium and high, as defined in the WAOWRP (DBCA, 2022a) (Table 5-3).

**Table 5-3: 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.

### 5.3.2 Environmental performance based on need

**Table 5-4: 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 5.7)
6	Wildlife response arrangements	6.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations.	1, 3A, 4
		6.2	Initiate a wildlife first strike response 5 days prior to confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DBCA.	1
7	Wildlife response equipment	7.1	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 4
		7.2	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 4
8	Wildlife responders	8.1	Two Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an Oiled Wildlife Response Management course.	1, 2, 3B
		8.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists.	1, 3B, 3C
		8.3	Maintain contract with OSRL to access additional trained oiled wildlife response specialists.	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	Management of environmental impacts of response risks	9.1	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 WAOWRP 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:
  - Mobilisation of monitor and evaluate techniques 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.

## 5.4 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 wildlife response, and/or
- solids/semi-solids (oily solids, garbage, contaminated materials) collected during 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 so continuous response operations can be maintained.

Relevant 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 licenced 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
- bunded 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.

### 5.4.1 Response need based on predicted consequence parameters

**Table 5-5: Response Planning Assumptions – Waste Management**

Response planning assumptions: Waste management	
Waste loading per m <sup>3</sup> oil recovered (multiplier)	Oiled wildlife response – approximately 1 m <sup>3</sup> of oily solid and liquid waste generated for each wildlife unit cleaned.

## 5.4.2 Environmental performance based on need

**Table 5-6: Environmental Performance – Waste Management**

Environmental Performance Outcome		To minimise further impacts, waste will be managed, tracked and disposed of in accordance with relevant laws and regulations.		
Control measure		Performance Standard		Measurement Criteria (Section 5.7)
10	Waste Management	10.1	Contract with waste management services for transport, removal, treatment and disposal of waste	1, 3A, 3B, 3C, 4
		10.2	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal	
		10.3	Teams will segregate liquid and solid wastes at the earliest opportunity	
		10.4	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract	
		10.5	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
		10.6	Waste management to be conducted in accordance with Australian laws and regulations	1, 3A, 3B, 3C, 4
		10.7	Waste management services available and employed during response	
11	Management of environmental impact of the response risks	11.1	Zoning of response locations to prevent secondary contamination and minimize the mixing of clean and oiled sediment and shoreline substrates	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.

Given that modelling predicts that there will be no floating oil at recoverable threshold concentrations and no shoreline impact at feasible clean-up threshold concentrations, the only waste management requirements will be for oiled wildlife response and the capability available therefore exceeds the need identified.

It indicates that the waste management capability has the following expected performance:

- Woodside currently has access to service providers committed to providing approximately 120,000 m<sup>3</sup> liquid waste over the duration of the spill
- 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 Operational and Scientific monitoring

Operational and scientific monitoring (OSM) is a key component of the environmental management document framework for offshore petroleum activities, which includes activity EPs and OPEPs. The key elements and differences between operational monitoring and scientific monitoring include:

- **Operational Monitoring (OM):** The OM techniques outlined in Section 5.1 (predictive modelling, surveillance/reconnaissance and pre-emptive assessment of sensitive receptors) will be deployed during every Level 2-3 incident. In addition, there are a suite of OMPs (as listed in Table 5-7) and their associated initiation and termination criteria within Table 9-1 of the Joint Industry OSM Framework. Information obtained through operational monitoring provides the IMT with situational awareness on the trajectory of the spill, its weathering state and hydrocarbon concentrations and its potential impacts to sensitive receptors. This phase of monitoring is also designed to inform the effectiveness of the response options being used to treat the spill, so that the IMT can make informed decisions as the response progresses through subsequent operational periods. Information needs to be collected and processed rapidly to suit response needs, with a lower level of sampling and accuracy needed than for scientific purposes.
- **Scientific Monitoring (SM):** Is the principal tool for determining the extent, severity and persistence of possible environmental impacts from a hydrocarbon spill and for informing resultant remediation activities. Consequently, such studies are required to account for natural or sampling variation, and study designs must be robust and produce defensible data. Scientific monitoring is typically conducted over a wider study area, extending beyond the spill footprint, and a longer time period, extending beyond the spill response. For the SMP initiation and termination criteria during a Level 2-3 spill event refer to Table 9-2 of the Joint Industry OSM Framework

Woodside has developed a Woodside OSM Bridging Implementation Plan (OSM-BIP)<sup>4</sup>, which describes a program of monitoring oil pollution that will be adopted in the event of a hydrocarbon spill incident (Level 2–3) to marine waters. It aligns with the Joint Industry OSM Framework (AEP, 2021) and describes how this Framework applies to Woodside activities and spill risks.

A series of Operational Monitoring Plans (OMPs) and Scientific Monitoring Plans (SMPs) form part of the Joint Industry OSM Framework and provide detail on monitoring design, standard operating procedures, data management, quality assurance and quality control and reporting.

Table 5-7 lists the Joint Industry OMPs and SMPs that are relevant to Angel Subsea Infrastructure Removal Petroleum Activities Program (PAP).

The OSM-BIP is structured so that it can provide a flexible framework that can be adapted to individual spill incidents. The Combined Socio-Cultural EMBA (refer to section 2.1 of the OSM-BIP), derived from all Woodside worst-case scenarios, represents the geographical extent of the Woodside BIP. The OSM-BIP includes details on all locations possibly contacted within seven days of a spill based on stochastic modelling of all Woodside worst-case spill scenarios at the low exposure values and a probability of greater than 10 % (refer to Section 2.1 and Table 2.1 in the OSM-BIP for further detail). A baseline review has been conducted for all of these locations and associated receptors. Subsequently, a list of all possible first-strike monitoring priorities has been identified as those locations where baseline data is either not available or not sufficient. The specific first-strike monitoring priorities for the PAP credible spill scenarios are listed in ANNEX C.

The OSM-BIP also includes the resourcing requirements for Woodside's worst-case scenario in terms of requiring the greatest first-strike and ongoing capability needs as described in Section 8 and 9 of the OSM-BIP. In summary, Woodside assessed the worst-case spill scenario for OSM capability as the scenario contacting the most receptors at the low thresholds at a probability >10% and within 7 days.

The OSM requirements for PAP credible spill scenarios and an assessment to demonstrate that the OSM-BIP adequately covers these requirements is provided in ANNEX C.

Woodside will review the initiation criteria for OMPs and SMPs (provided in Table 9-1 [OMPs] and Table 9-2 [SMPs] of the Joint Industry Operational and Scientific Monitoring Framework (AEP, 2021)) during the

<sup>4</sup> In accordance with Regulation 56 of the Environment Regulations, the Woodside *Operational and Scientific Monitoring Bridging Implementation Plan* was provided to NOPSEMA with the North Rankin Complex Operations Environment Plan in August 2024 and is publicly available here: <https://docs.nopsema.gov.au/A1125894>

preparation of the initial IAPs, and subsequent IAPs. If any initiation criteria are met, then that relevant OMP and/or SMP will be activated via the OSM Services Provider.

**Table 5-7: Joint industry OSM plans relevant to Angel Subsea Infrastructure Removal Petroleum Activities Program**

Operational Monitoring	Relevant for the PAP	Scientific Monitoring	Relevant for the PAP
OM1: Hydrocarbon Characterisation	✓	SM1: Water Quality Impact Assessment	✓
OM2: Hydrocarbon in Water Assessment	✓	SM2: Sediment Quality Impact Assessment	✓
OM3: Hydrocarbon in Sediment Assessment	✓	SM3: Intertidal & Coastal Habitat Assessment	✓
OM4: Dispersant Effectiveness Monitoring (Surface & Subsea)	✗	SM4: Seabirds and Shorebirds Assessment	✓
OM5: Rapid Marine Fauna Surveillance	✓	SM5: Marine mega-fauna Assessment	✓
OM6: Shoreline Clean-up Assessment (SCAT)	✗	SM6: Benthic habitat Assessment	✓
		SM7: Marine fish and elasmobranch assemblages assessment	✓
		SM8: Fisheries Impact Assessment	✓
		SM9: Heritage Features Assessment	✓
		SM10: Social Impact Assessment	✓

### 5.5.1 Response need for Shoreline Clean-Up Assessment (SCAT) based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

- SCAT will be mobilised to RPAs contacted at 100 g/m<sup>2</sup>.
- The stochastic modelling results do not predict any shoreline accumulation at 100 g/m<sup>2</sup>. Table 5-8 shows SCAT response planning assumptions if required.

**Table 5-8: Response Planning Assumptions - SCAT**

Response planning assumptions: SCAT	
<b>Safety considerations</b>	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"> <li>• hydrocarbon gas and/or liquid exposure</li> <li>• waves and/or sea states, tidal cycle and intertidal zone limits</li> <li>• presence of wildlife</li> <li>• high ambient temperatures.</li> </ul>
<b>SCAT</b>	<ul style="list-style-type: none"> <li>• Deployment of 2 x specialists in SCAT from resource pool for each of the RPAs with predicted impacts. Note, there are no RPAs with predicted shoreline impact at 100 g/m<sup>2</sup>.</li> </ul>

### 5.5.2 Summary – operational and scientific monitoring

The resulting scientific monitoring capability has been assessed against the PAP worst case credible spill scenario (CS-01). The SMP assessment provides for a range of strategies and an ongoing approach to monitoring the response and 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.

Woodside confirms that all the PAP credible spill scenarios fit within the OSM combined EMBA and assessment criteria defined within Appendix A of the OSM-BIP (refer to [ANNEX C](#)). Further, receptors contacted are all included within the baseline assessment list in Section 2.2 of the OSM-BIP and the OSM capability requirement for the PAP credible spill scenarios is less than the worst-case capability outlined in the OSM-BIP.

The ALARP assessment for operational and scientific monitoring (Section 6.5) considers alternate, additional, and/or improved control measures on each selected response technique.

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 OSM program's main objectives can be met, with no additional, alternative or improved control measures providing further benefit.

### 5.5.3 Environmental performance based on need

**Table 5-9: Operational and scientific monitoring**

Environmental Performance Outcome		Implement OSM programs to assess and report on the impact, extent, severity, persistence and recovery of sensitive receptors contacted by a spill or affected by spill response.		
Control measure		Performance Standard		Measurement Criteria (Section 5.7)
12	OSM arrangements	12.1	Maintain access to OSM expertise qualified to fulfil OSM Implementation Lead role during a Level 2/3 spill event per Joint Industry OSM Framework requirements.	3A, 3B, 3C, 4
		12.2	OSM Implementation Lead responsible for overseeing implementation of OMP and SMP components in accordance with the Woodside OSM Bridging Implementation Plan.	
13	Access to adequate OSM capability to provide both first strike and ongoing monitoring	13.1	Maintain contract with third-party provider to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of monitoring	3A, 3B, 3C, 4
		13.2	Obtain monthly capability reports from OSM Service Provider to demonstrate suitable resources are available throughout any activity	
		13.3	Annual testing of OSM Service Provider standby arrangements and activation process	
14	Baseline studies assurance	14.1	Annual review of environmental baseline data for all locations where spill modelling has predicted contact at relevant hydrocarbon thresholds	3C
15	OSM response	15.1	OMPs and SMPs will be activated in accordance with the initiation criteria provided in Tables 9-1 and 9-2 of the Joint Industry OSM Framework (APPEA, 2021)	1
		15.2	Initiation criteria of OMPs and SMPs will be reviewed during the preparation of the initial Incident Action Plan (IAPs) and subsequent IAPs; and if any criteria are met, relevant OMPs and SMPs will be activated	
		15.3	OSM to be conducted in accordance with the Woodside OSM-BIP	
		15.4	Implementation of OSM will comply with the minimum standards listed in Appendix A of the Joint Industry OSM Framework	
		15.5	Once OSM data reports are drafted they will be peer reviewed by an expert panel for data integrity	
		15.6	OMPs and SMPs will be terminated in accordance with the termination criteria provided in Table 9-1 and 9-2 of the Joint Industry OSM Framework (APPEA, 2021)	
16	OSM-BIP maintenance	16.1	Annual review will be conducted according to the criteria in the OSM-BIP	3A, 3B, 3C, 4
17	Shoreline Clean-up Assessment Technique (SCAT)	17.1	Within 24 hours, in liaison with WA DoT (for Level 2/3 incidents), deployment of 1-2 specialist(s) in SCAT from resource pool for each of the Response Protection Areas (RPAs) with predicted impacts	1, 2, 3B, 3C, 4
		17.2	Reports from OMP: Shoreline Clean-up Assessment will be provided to the IMT daily, detailing the assessed areas to maximise effective utilisation of resources.	1, 3B, 4
18	Management of Environmental Impact of the response risks	18.1	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

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		18.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
		18.3	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations	
		18.4	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	
		18.5	Oversight by trained personnel who are aware of the risks	
		18.6	Trained unit leader's brief personnel of the risks prior to operations	

## 5.6 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.

### 5.6.1 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.

### 5.6.2 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 Joint Industry OSM Framework (APPEA, 2021). In effect the operational NEBA will determine whether there is net environmental benefit to continue response operations.

### 5.6.3 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.

## 5.6.4 Environmental performance based on need

**Table 5-10: 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 5.7)
19	Operational SIMA	19.1	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
		19.2	Record the evidence and justification for any deviation from the planned response activities.	
		19.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
20	Stakeholder engagement	20.1	Prompt and record all notifications (including government notifications) for persons/ organisations in the region are made.	
		20.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
		20.3	Undertake communications in accordance with: <ul style="list-style-type: none"> <li>• Functional Support Team Guideline – Reputation</li> <li>• External Communication and Continuous Disclosure Procedure</li> <li>• External Stakeholder Engagement Procedure.</li> </ul>	
21	Personnel required to support any response	21.1	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
		21.2	A duty roster of trained and competent people will be maintained to ensure that minimum manning requirements are met all year round.	3C
		21.3	Immediately activate the CIMT with personnel filling one or more of the following roles: <ul style="list-style-type: none"> <li>• CIMT Incident Commander</li> <li>• CIMT Deputy Incident Commander</li> <li>• Operations Section Chief</li> <li>• Planning Section Chief</li> <li>• Logistics Section Chief</li> <li>• Documentation Unit Leader</li> <li>• Safety Officer</li> <li>• Environment Unit Leader</li> <li>• Human Resources Officer</li> <li>• Public Information Officer</li> <li>• Situation Unit Leader</li> <li>• Finance Section Chief</li> <li>• Source Control Section Chief.</li> </ul>	1, 2, 3B, 3C, 4
		21.4	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.	
		21.5	S&EM advisors will be integrated into CIMT to monitor performance of all functional roles.	
		21.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.	
		21.7	Follow the Hydrocarbon Spill Australia Regulatory Framework, Operational Plans, FSPs, support plans and the IAPs developed.	1, 2, 3A, 4
		21.8	Contribute to Woodside's response in accordance with the aims and objectives set by the Incident Commander.	1, 2, 3B, 3C, 4

## 5.7 Measurement criteria for all response techniques

Woodside verifies 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 IMT, development and the execution of the IAP.

### 2. The CEM Competency Dashboard

The CEM competency dashboard records the number of trained and competent responders that are available across Woodside 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 5-1 shows the minimum manning numbers for the different hydrocarbon spill response roles and the number of qualified persons against those roles.

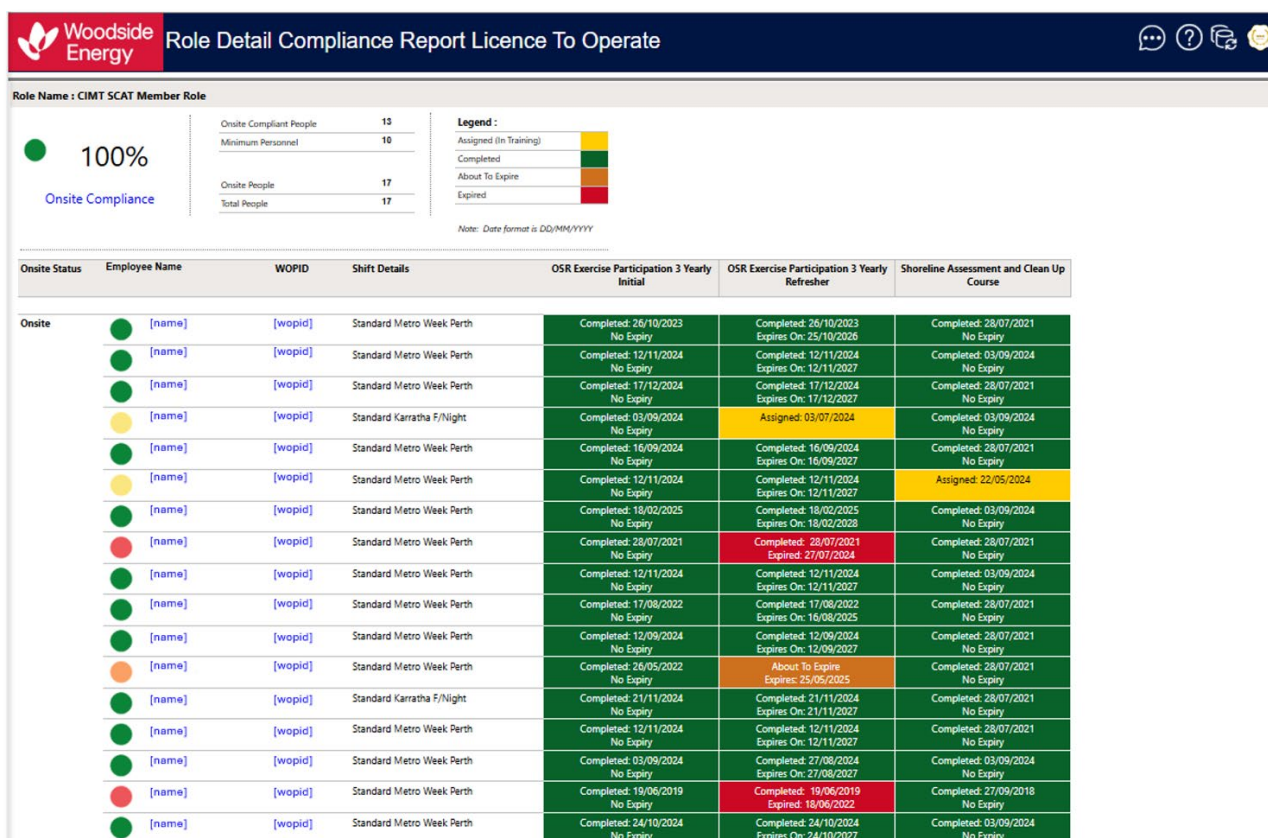




**Figure 5-1: Example screenshot of the CEM dashboard**

The Dashboard is one of Woodside's key means of monitoring its readiness to respond. It also demonstrates Woodside's ability to meet the requirements of the environmental performance standards that relate to filling certain response roles.

Figure 5-2 shows an example of the SCAT role and the training modules required to show competence.



**Figure 5-2: Example screenshot for the SCAT role**

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Woodside also maintains access to a pool of trained responders composed of, but not limited to, personnel from the following organisations:

- Australian Marine Oil Spill Centre (AMOSC) core group
- AMOSC
- Oil Spill Response Limited (OSRL)
- Marine Spill Response Corporation (MSRC)
- Woodside contracted workforce.

### 3. The Hydrocarbon Spill Preparedness Assurance Process

The Hydrocarbon Spill Response Team uses Woodside's assurance process to track compliance over three key control areas:

- Plans** – Ensures all plans (including: Hydrocarbon Spill Australia Regulatory Framework, first strike plans, operational plans, support plans and tactical response plans) are current and in line with regulatory and internal requirements.
- Competency (personnel and testing)** – 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.
- Capability (equipment and contracts)** – Tracks and monitors capability that could be required in a hydrocarbon incident, including but not limited to: integrated fleet<sup>5</sup> vessel schedule, dispersant availability, rig/vessels monitoring, equipment stockpiles, tracking buoy locations and the CIMT duty roster.

The 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 CEM Function.

### 4. The Hydrocarbon Spill Planning Standard, Hydrocarbon Spill Planning Work Instruction (Australia) and Hydrocarbon Spill Capability and Competency Standard

The Hydrocarbon Spill Planning Standard sets out how to plan and prepare for a liquid hydrocarbon spill to the marine environment. (Note, this standard does not apply to scenarios relating to gas releases in the marine environment). This standard details the requirement for an Oil Pollution Emergency Plan (OPEP) to be developed, maintained, reviewed, and approved by appropriate regulators (where applicable).

The Hydrocarbon Spill Planning Work Instruction (Australia) details planning for hydrocarbon spill response preparedness including:

- Developing OPEPs.
- Defining how spill scenarios are developed on an activity specific basis
- Priority response receptor determination.
- ALARP determination.

The Hydrocarbon Spill Capability and Competency Standard details:

- Developing spill training requirements and ongoing maintenance of training and competency for personnel
- Developing requirements for spill exercising / testing of spill response arrangements
- Maintaining access to identified equipment, personnel and contracts.
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements.

<sup>5</sup> 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

## 6 ALARP EVALUATION

This Section should be read in conjunction with Section 5 which is the capability planned for this activity.

### 6.1 Monitor and evaluate – 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 are 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 Monitor and evaluate – Control Measure Options Analysis

##### 6.1.1.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative Control Measures, 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 approx. \$300,000.	This option is not adopted as the minimal environmental benefit gained is disproportionate to the cost and complexity of its implementation.	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 approx. \$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 upon at the time of an incident. Regular audits of oil spill response organisations ensure training and competency is maintained.	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 response contractors if required.	No

##### 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

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 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 are 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.

6.2.1 Source Control via Vessel SOPEP – Control Measure Options Analysis

6.2.1.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative control measures, 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					

6.2.1.2 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					

6.2.1.3 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					

6.2.2 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

### 6.3 Oiled 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 are 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.

#### 6.3.1 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.

#### 6.3.2 Oiled Wildlife Response – Control Measure Options Analysis

##### 6.3.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative control measures, 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

##### 6.3.2.2 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 oiled wildlife response threshold concentrations (<math>&gt;10 \text{ g/m}^2</math>) with offshore waters is expected from day one (CS-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 no contact predicted at shoreline response thresholds (<math>&gt;100 \text{ g/m}^2</math>), 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 monitor and evaluate operations.</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	<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>The potential environmental benefit of training additional personnel is expected to be low.</p>	<p>Current numbers meet the needs required and additional personnel are available through existing contracts with oil spill response organisations and environmental panel contractors.</p> <p>Additional equipment and facilities would be required to support ongoing response, depending on the scale of the event and the impact to wildlife</p>	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



		and maybe sourced via existing contracts with OSROs. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.			
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6.3.2.3 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

6.3.3 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

## 6.4 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 are 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 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.

### 6.4.2 Waste Management - Control Measure Options Analysis

#### 6.4.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative control measures, 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.					

#### 6.4.2.2 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 approx. A\$1,300 per m <sup>3</sup> .  Cost for increased onshore temporary waste storage capability would be approx. A\$40 per unit per day.	This option is not adopted as the existing capability meets the need.	No

#### 6.4.2.3 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.  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	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>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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6.4.3 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

## 6.5 Operational and Scientific Monitoring – ALARP Assessment

Alternative, additional and improved options have been identified and assessed against the base OSM capability described in Section 5 and the Woodside OSM-BIP with those that have been selected for implementation which are 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 – Operational and 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 limitations that are beyond Woodside's direct control.

### 6.5.2 Operational and Scientific Monitoring – Control Measure Options Analysis

#### 6.5.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative control measures 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 OSM vessel (exclusive to Woodside)	Would provide marginally faster mobilisation time of first-strike monitoring resources. However, the timescale difference would be limited when compared to the availability of in-field support vessels which was equipped with first strike water quality sampling equipment, meaning it would result in very minor to no environmental benefit.	Chartering and equipping additional vessels on standby for operational and scientific monitoring has been considered. The option is reasonably practicable but the sacrifice (charter costs and organisational complexity) is significant, particularly when existing contracted support vessels can be equipped with first strike water quality sampling equipment. Additionally, vessels are not the limiting factor in deployment times, as the majority of operational and scientific monitoring components require trained specialists, who can take > 72 hours to mobilise.	The cost and organisational complexity of contracting a dedicated response vessel is considered disproportionate to the marginal 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

#### 6.5.2.2 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
Pre-position a team of trained scientific monitoring personnel on standby in Dampier	Pre-positioning a team of trained scientific monitoring personnel closer to the spill location would result in quicker mobilisation times for one or two priority OMPs or SMPs to be implemented.	A trained team of scientific monitoring personnel positioned in Dampier could result in a more rapid deployment of first strike monitoring. However, this option is reliant on suitable vessels being readily available in Dampier and not requiring relocation from nearby ports or adjacent offshore locations.	The costs of having a small team of trained scientific monitoring personnel available on standby in Dampier would be in excess of \$3-4M / annum and would be an associated cost to the activity whether there was a spill or not.	The cost of maintaining a team of trained scientific monitoring personnel on standby in Dampier is considered disproportionate, as multiple teams of trained personnel are required to implement multiple OMPs and SMPs. It is considered more cost effective and feasible to pre-position first strike sampling kits on support vessels (see below).	No
Purchase first strike water quality / hydrocarbon sampling kits for pre-positioning on nearby support vessels and develop technical procedure for sample collection	The availability of first strike water quality / hydrocarbon sampling kits on nearby support vessels (and an accompanying technical procedure for sample collection) will provide an opportunity for more rapid initial measurements of hydrocarbon properties and concentrations. This information will provide important initial situational awareness information that will aid decision making in both monitoring and response efforts.	This control measure will improve the availability and timeframe for first strike water quality sampling.	Implementing this additional control measure will involve time and effort to source and supply first strike sampling kits to the selected supply vessels. There will also be employee time involved in developing and conducting training to vessel crews on the technical procedure for sample collection.	Adoption of this control measure will provide an additional and quicker opportunity for first strike water quality sampling, resulting in improved situational awareness for decision making in monitoring and response teams.	Yes
Modify Woodside Aerial Surveillance Observer Log to enable observers to record marine fauna sightings (presence and type of fauna)	Initial aerial surveillance provides important information for decision making in response operations, but can also provide important initial environmental monitoring data. Amending the Woodside Aerial Surveillance Observer Log to include the ability to report on location, presence and type of fauna could assist in a more rapid, effective deployment of specialised OMP teams for	This control measure is considered reasonably practicable to implement.	Cost to modify the Aerial Surveillance Observer Log is minimal and is associated with time and effort of existing employees.	Adoption of this control measure is considered to be beneficial as it could assist in more effective and efficient deployment of fauna monitoring and response efforts.	Yes

	Marine Fauna Assessment and Oiled Wildlife Response.				
Conduct periodical review of existing baseline data sources across receptors predicted to be contacted within 7 days at the low thresholds and a probability $\geq 10\%$	This ensures that receptors with deficient baseline data are identified. This a consideration for first-strike monitoring prioritisation and the finalisation of each SMP design	This control measure is considered reasonably practicable to implement.	Cost of contract with Service Provider.	Understanding the presence or absence, suitability and quality of baseline data for receptors predicted to be contacted within 7 days, at a probability $\geq 10\%$ , is an important preparatory measure. Understanding which receptors have insufficient baseline data will help quickly guide monitoring prioritisation and the finalisation of each SMP design and whether there is a need to include alternative designs.	<b>Yes</b>

### 6.5.2.3 Improved Control Measures considered

Improved Control Measures considered <i>Improved control measures, 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
Adoption of the OSRL OSM Supplementary Service Agreement for OSM capability provision	A Joint Industry capability provision has considerable benefits, including an improvement to industry OSM standards; improved reliability in accessing specialist personnel; efficiencies and capability growth associated with shared testing and exercising; and greater depth in Monitoring Service Provider (MSP) capability, with a centralised contract coordinating multiple consultancies and MSPs.	This control measure has already been developed by Industry and is considered reasonably practicable to implement.	Cost of annual subscription to OSRL OSM Supplementary Service Agreement	Adopting this control measure involves additional costs, but the benefits of a Joint Industry OSM capability provision outweighs the costs and therefore this additional measure has been accepted.	<b>Yes</b>
Determine the required specifications for suitable monitoring vessels, including specialised equipment for OMPs and SMPs (i.e. hiab) and the requirement of shallow draft vessels to access offshore islands and priority monitoring areas	Understanding vessel specification requirements for OSM at priority locations will result in quicker mobilisation times, and more effective monitoring, as correctly equipped vessels will be made available at the commencement the monitoring effort.	This control measure is considered reasonably practicable to implement.	Cost to determine vessel specifications is minimal and is associated with time and effort of existing employees.	This control measure would result in the correct vessels being mobilised for monitoring personnel and result in quicker implementation of monitoring.	<b>Yes</b>

### 6.5.3 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
  - Purchase first strike water quality / hydrocarbon sampling kits for pre-positioning on nearby support vessels and develop technical procedure for sample collection
  - Modify Woodside Aerial Surveillance Observer Log to enable observers to record marine fauna sightings (presence and type of fauna)
  - Conduct periodical review of existing baseline data sources for receptors predicted to be contacted within 7 days, at the low thresholds and a probability  $\geq 10\%$ .
- improved
  - Adoption of the OSRL OSM Supplementary Service Agreement for OSM capability provision
  - Determine the required specifications for suitable monitoring vessels, including specialised equipment for OMPs and SMPs (i.e. hiab) and the requirement of shallow draft vessels to access offshore islands and priority monitoring areas.

#### 6.5.4 ALARP and Acceptability Summary

ALARP and Acceptability Summary		
Operational and Scientific Monitoring		
ALARP Summary	X	Known reasonably practicable control measures have been adopted
	X	No additional, alternative and improved control measures would provide further benefit
	X	No reasonably practical additional, alternative, and/or improved control measure exists
	The resulting operational and 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.  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 OSM's main objectives can be met, with the addition of one alternative control measures to provide further benefit.	
Acceptability Summary	<ul style="list-style-type: none"><li>• The control measures selected for implementation manage the potential impacts and risks to ALARP.</li><li>• 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.</li><li>• Operational and Scientific Monitoring control and activities are compliant with relevant environmental legislation and regulations, including the EPBC Act.</li><li>• Throughout the PAP, relevant Australian standards and codes of practice will be followed to evaluate the impacts from a loss of well control.</li><li>• Stakeholder consultation undertaken for the PAP did not receive feedback regarding concerns for Scientific Monitoring activities in response to a hydrocarbon spill.</li><li>• The level of impact and risk to the environment has been considered with regards to the principles of Ecologically Sustainable Development; (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 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.</li></ul>	
On the basis from the ALARP assessment, above and the risk assessment in the Angel Subsea Infrastructure Removal EP, Woodside considers the adopted controls discussed manage the impacts and risks associated with implementing operational and scientific monitoring activities to a level that is ALARP and acceptable.		

## 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:

- Vessel operations and anchoring
- Human presence
- Additional stress or injury caused to wildlife
- Waste management.

### 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
Monitor and evaluate		✓	✓		✓	✓	
Source control		✓	✓	✓	✓	✓	✓
Oiled wildlife					✓	✓	
Operational and Scientific monitoring	✓	✓	✓	✓	✓	✓	✓
Waste management	✓	✓		✓	✓	✓	✓

### 7.3 Evaluation of impacts and risks from implementing response techniques

#### Vessel operations and anchoring

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 or oiled wildlife response). 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.

#### 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 during oiled wildlife response operations
- Semi-solids/solids (oily solids), collected during oiled wildlife response operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during 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.

#### 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

- If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic 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 (Performance Standard (PS) 18.1)
- Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (PS 18.2)

### 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 18.3)
- Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves (PS 18.4)
- Oversight by trained personnel who are aware of the risks (PS 18.5)
- Trained unit leader's brief personnel of the risks prior to operations (PS 18.6).

### Waste generation

- Zoning of response locations to prevent secondary contamination and minimize the mixing of clean and oiled sediment and shoreline substrates (PS 11.1).

### Additional stress or injury caused to wildlife

- 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 9.1).

## 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 to confirm:
  - 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 practicable 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.
- Levels of risk/ impact are deemed acceptable by relevant persons/ organisations 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])
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.
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.

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Term	Description / Definition
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
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
CIMT	Corporate Incident Management Team
COP	Common Operating Picture
cST	Centistokes
DM	Duty Manager
DoT	Western Australia Department of Transport
DBCA	Western Australia Department of Biodiversity, Conservation and Attractions (former Western Australian Department of Parks and Wildlife)
EMBA	Environment that May Be Affected
EMSA	European Maritime Safety Agency
EP	Environment Plan
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
ESI	Environmental Sensitivity Index
ESD	Ecologically Sustainable Development
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
IC	Incident Commander
ICE	Internal Control Environment
IMSA	Index of Marine Surveys for Assessment
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

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Abbreviation	Meaning
KSAT	Kongsberg Satellite
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
OPEP	Oil Pollution Emergency Plan
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act
OMP	Operational Monitoring Program
OSM	Operational and Scientific Monitoring
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
PPM	Parts per million
ROV	Remotely Operated Vehicle(s)
RPA	Response Protection Area
SCAT	Shoreline Contamination Assessment Techniques
SIMAP	Integrated Oil Spill Impact Model System
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
WHA	World Heritage Area
Woodside	Woodside Energy Limited
WCC	Woodside Communication Centre
WWCI	Wild Well Control Inc
WCCS	Worst Case Credible Scenario
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 loss of MDO due to vessel collision. The complete list of potential receptor locations within the EMBA within the PAP is included in Section 5 of the EP.

The locations utilised for the NEBA were limited to the identified RPAs of the PAP identified from modelling (see Section 3 for outline of selection).

These include receptors which have potential for the following:

- Surface contact (>50 g/m<sup>2</sup>) (note: no surface contact is predicted at this threshold)
- Shoreline accumulation (100 g/m<sup>2</sup>) at any time (note: no shoreline contact is predicted at this threshold)
- Entrained oil (>100 ppb)

The detailed NEBA assessment outcomes are shown below.

**Table A-1: NEBA assessment technique recommendations for the WCCS (CS-01) MDO release**

Receptor	Monitor and evaluate	Containment and recovery	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 (via vessel SOPEP)
Montebello AMP	Yes	No	No	No	No	No	No	Yes	No	No	Yes
Glomar Shoal	Yes	No	No	No	No	No	No	Yes	No	No	Yes
Rankin Bank	Yes	No	No	No	No	No	No	Yes	No	No	Yes

**Table A-2: Overall assessment**

Receptor	Monitor and evaluate	Containment and recovery	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 (via vessel SOPEP)
Is this response Practicable?	Yes	No	No	No	No	No	No	Yes	No	No	Yes
NEBA identifies Response potentially of Net Environmental Benefit?	Yes	No	No	No	No	No	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 <sup>6</sup>	Potential duration of impact	Equivalent Woodside Corporate Risk Matrix Consequence Level
Positive	3P	Major	Likely to prevent: <ul style="list-style-type: none"> <li>behavioural impact to biological receptors</li> <li>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.</li> </ul>	Decrease in duration of impact by > 5 years	N/A
	2P	Moderate	Likely to prevent: <ul style="list-style-type: none"> <li>significant impact to a single phase of reproductive cycle of biological receptors</li> <li>detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors.</li> </ul>	Decrease in duration of impact by 1–5 years	N/A
	1P	Minor	Likely to prevent impacts on: <ul style="list-style-type: none"> <li>significant proportion of population or breeding stages of biological receptors</li> <li>socio-economic receptors such as: <ul style="list-style-type: none"> <li>significant impact to the sensitivity of protective designation; or</li> <li>significant and long-term impact to business/industry.</li> </ul> </li> </ul>	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"> <li>behavioural impact to biological receptors</li> <li>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.</li> </ul>	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"> <li>significant impact to a single phase of reproductive cycle for biological receptors; or</li> <li>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.</li> </ul>	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"> <li>significant proportion of population or breeding stages of biological receptors</li> <li>socio-economic receptors resulting in either: <ul style="list-style-type: none"> <li>significant impact to the sensitivity of protective designation; or</li> <li>significant and long-term impact to business/industry.</li> </ul> </li> </ul>	Increase in duration of impact by > 5 years or unrecoverable	Increase in risk by two categories (e.g. Minor (E) to Major (A))

<sup>6</sup> 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: MONITOR AND EVALUATE ACTIVATION AND TERMINATION CRITERIA

**Table B-1: Monitor and evaluate objectives, triggers and termination criteria**

Monitor and evaluate technique	Objectives	Activation triggers	Termination criteria
Predictive Modelling of Hydrocarbons to Assess Resources at Risk	<p>Predictive modelling 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. Predictive modelling 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 predictive modelling are to:</p> <ul style="list-style-type: none"> <li>• Provide forecasting of the movement and weathering of spilled hydrocarbons</li> <li>• Identify resources that are potentially at risk of contamination</li> <li>• 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</li> </ul>	Predictive modelling will be triggered immediately following a level 2/3 hydrocarbon spill.	<p>The criteria for the termination of predictive modelling are:</p> <ul style="list-style-type: none"> <li>• The hydrocarbon discharge has ceased and no further surface oil is visible</li> <li>• Response activities have ceased</li> <li>• Hydrocarbon spill modelling (as verified by surveillance observations) predicts no additional natural resources will be impacted</li> </ul>

Monitor and evaluate technique	Objectives	Activation triggers	Termination criteria
Surveillance and reconnaissance to detect hydrocarbons and resources at risk	<p>Surveillance and reconnaissance aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill.</p> <p>The objectives of surveillance and reconnaissance are:</p> <ul style="list-style-type: none"> <li>• Verify spill modelling results and recalibrate spill trajectory models.</li> <li>• Understand the behaviour, weathering and fate of surface hydrocarbons.</li> <li>• Identify environmental receptors and locations at risk or contaminated by hydrocarbons.</li> <li>• Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options in order to reduce risks to ALARP.</li> <li>• 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.</li> </ul>	Surveillance and reconnaissance will be triggered immediately following a level 2/3 hydrocarbon spill.	<p>The termination triggers for the surveillance and reconnaissance are:</p> <ul style="list-style-type: none"> <li>• 72 hours has elapsed since the last confirmed observation of surface hydrocarbons.</li> <li>• Latest hydrocarbon spill modelling results do not predict surface exposures at visible levels.</li> </ul>

Monitor and evaluate technique	Objectives	Activation triggers	Termination criteria
Pre-emptive assessment of sensitive receptors at risk	<p>Pre-emptive shorelines assessment 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 pre-emptive shorelines assessment is to confirm understanding of the status and characteristics of environmental resources predicted by predictive modelling and surveillance 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 pre-emptive shorelines assessment 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>Pre-emptive shorelines assessment 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 pre-emptive shorelines assessment include:</p> <ul style="list-style-type: none"> <li>• Contact of a sensitive habitat or shoreline is predicted by predictive modelling and surveillance.</li> <li>• The pre-emptive assessment methods can be implemented before contact from hydrocarbons (once a receptor has been contacted by hydrocarbons it will be assessed via SCAT).</li> </ul>	<p>The criteria for the termination of pre-emptive shorelines assessment at any given location are:</p> <ul style="list-style-type: none"> <li>• Locations predicted to be contacted by hydrocarbons have been contacted.</li> <li>• The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).</li> </ul>

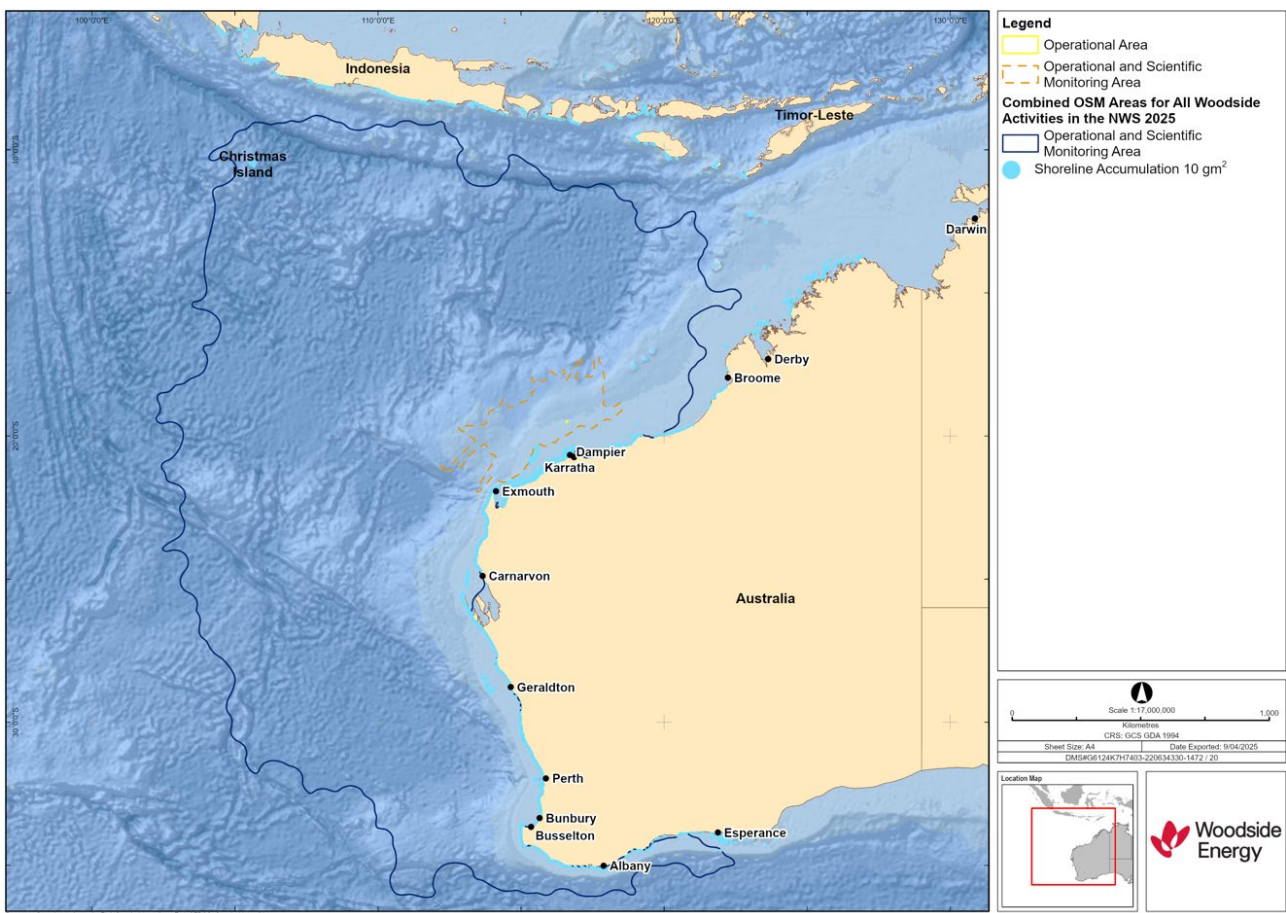
## ANNEX C: PAP OSM ACTIVITY SPECIFIC REQUIREMENT AND VERIFICATION OF OSM-BIP ADEQUACY

The Woodside OSM-BIP defines the following three-step process for ensuring that the OSM-BIP adequately covers the following requirements for each activity (also refer to both Section 1.1 and Appendix A of the OSM-BIP):

- activity-specific EMBA;
- baseline assessment of activity-specific first-strike monitoring priorities; and
- activity-specific capability requirements.

### Step 1: Determine if the new activity EMBA fits within the OSM-BIP Combined Socio-Cultural EMBA

The Socio-Cultural EMBA for the PAP credible spill scenario as shown in Figure C - 1 fits within the OSM-BIP Combined Socio-Cultural EMBA (Figure 2-1 in the OSM-BIP).



**Figure C - 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 (CS-01).**

Please note that Figure C - 1 represents the overall combined extent of the oil spill model outputs based on a total of 200 replicate simulations over an annual period for CS-01, and therefore represents the largest spatial boundaries of 200 hydrocarbon spill combinations for the well location, not the spatial extent of a single hydrocarbon spill trajectory.

## **Step 2: Determine first strike monitoring priorities and confirmation that a baseline review has been undertaken for these locations**

### **First Strike Monitoring Priorities for PAP Activities**

First-strike monitoring priorities for PAP activities were established using stochastic modelling results from the worst-case scenario (Table C - 1). These priorities focus on locations predicted to be contacted by hydrocarbons at the low threshold for floating ( $\geq 1 \text{ g/m}^2$ ), shoreline contact ( $\geq 10 \text{ g/m}^2$ ), entrained ( $\geq 10 \text{ ppb}$ ), and dissolved ( $\geq 10 \text{ ppb}$ ) hydrocarbons within 7.0 days at a probability  $>10\%$ .

While Table C - 1 provides planning guidance for first-strike monitoring priorities for the spill scenario, actual monitoring priorities during a spill will depend on the specific circumstances. It is important to note that stochastic modelling results represent multiple possible outcomes rather than predicting the behaviour of a single spill. In reality, metocean conditions at the time will determine which locations are affected and will likely comprise a smaller subset of the locations that were identified through stochastic modelling.

Monitoring prioritisation during a spill should emphasise locations with the highest risk of adverse consequences, particularly, shallow waters, sensitive habitats, and areas supporting protected species. Generally, shorelines and their adjacent nearshore environments take precedence over offshore environments, except when these offshore locations are the primary areas impacted by the spill or are of ecological significance.

The availability of baseline data may influence monitoring priorities. Section 4 of the OSM-BIP outlines Woodside's baseline review and evaluation process, with Table C - 2 summarising baseline data adequacy for the PAP first-strike monitoring priorities. Priority may be given to those locations and receptors where there is no or insufficient baseline. Additional guidance for prioritisation can be drawn from the WA DoT protection priority rankings, established through the Western Australian Marine Oil Pollution Risk Assessment.

For guidance on real-time prioritisation during an active spill, consult the monitoring priorities checklist provided in Table 13-1 of the OSM BIP.



**Table C - 1: PAP credible spill scenario modelling results for locations with a probability of contact  $\geq 10\%$  and  $< 7$  days**

Scientific monitoring priority area	Total contact probability (%) floating oil $\geq 1$ g/m <sup>2</sup>	Min. arrival time floating oil $\geq 1$ g/m <sup>2</sup> (days)	Total contact probability (%) shoreline accumulation $\geq 10$ g/m <sup>2</sup>	Min. arrival time shoreline accumulation $\geq 10$ g/m <sup>2</sup> (days)	Probability (%) entrained oil at $\geq 10$ ppb	Min. arrival time entrained oil $\geq 10$ ppb (days)	Probability (%) dissolved oil at $\geq 10$ ppb	Min. arrival time dissolved oil $\geq 10$ ppb (days)
A short-term (instantaneous) uncontrolled surface release of 500 m <sup>3</sup> of marine diesel due to a vessel collision at the Angel-3 wellhead location								
Montebello MP*	NC	NC	NC	NC	14	6.2	NC	NC

\*Submerged receptor that has no features above the sea surface. Modelling indicates 'contact' with these receptors when the hydrocarbons pass over the receptor on the sea surface.

NC = no contact

**Table C - 2: Baseline data assessment versus SMPs for identified PAP first-strike monitoring priorities**

Scientific monitoring priority area	Water quality impact assessment	Sediment quality impact assessment	Intertidal and coastal habitat assessment	Seabirds and shorebirds	Marine megafauna assessment-reptiles	Marine megafauna assessment-whale sharks, dugong and cetacean	Benthic habitat assessment	Marine fish and elasmobranch assemblages assessment	Fisheries impact assessment	Heritage and social impact assessment
Montebello Islands										
<b>Key</b>										
	Current baseline data is not in place, not suitable or not sufficient									
	Collectively there is substantial baseline data or on-going monitoring from within the last 5 years									

Note: Marine parks have not been included as a specific grouping/location because priority monitoring locations within marine parks are encompassed by specific islands, shorelines, reef, shoals and banks which fall within the boundaries of a marine park.

**Step 3: Determine whether the first -strike OSM capability requirements and monitoring arrangements of the new activity exceed or are met by the capability requirements outlined in Section 8 and capability arrangements described in Section 9 and 10 of the OSM-BIP.**

Based on stochastic modelling (Table C - 1), only one receptor meets the specified parameters of contact at >10% probability and within 7 days therefore deterministic modelling was not required.

The timeframes for the mobilisation of relevant OSM components are shown in Table 7-1 of the OSM-BIP. Monitor and Evaluate activities will capture initial observations of fauna, habitat, and other sensitive receptors near the spill area. Water samples will be collected during vessel surveillance for OM1: Hydrocarbon Characterisation, when safe to do so. If required, SCAT teams will begin mobilisation within 48-72 hours of notification and will also document fauna observations.

Through Woodside's membership in the OSRL OSM Supplementary Agreement, OSM services are available for preparedness, activation, and monitoring (detailed in Section 9 of the OSM-BIP). This agreement ensures operational monitoring personnel can deploy within 72 hours of notification, and scientific monitoring personnel within 5-7 days.

In circumstances where locations could be impacted before monitoring teams can begin their assessments, together with the limited baseline data at many priority monitoring locations, scientific monitoring would likely need to use a combination of approaches including gradient analysis, impact versus control comparisons, and lines of evidence methodologies. During a spill, it may be necessary to identify additional unaffected control sites for comparative monitoring where possible. This is included in the resource requirements in Table 8-4 of the OSM-BIP.

Woodside's OSM capability arrangements are detailed in Sections 9 and 10 of the OSM-BIP and are structured to address Woodside's worst-case spill scenario across all Australian activities as described in Section 8 of the OSM-BIP. These sections demonstrate that Woodside has established arrangements to mobilise up to 5-6 teams for most OMPs and SMPs, confirming that the OSM capability requirements for PAP activities ( ) are fully satisfied by the existing capability arrangements in the OSM-BIP.

## ANNEX D: 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
KGP to Withnell Creek

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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

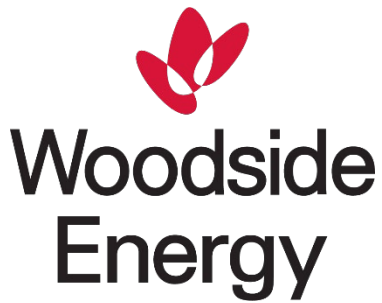
Exmouth

Dampier region

Shark Bay

APPENDIX H FIRST STRIKE PLAN

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# Angel Subsea Infrastructure Removal – Oil Pollution First Strike Plan

Corporate HSE  
Hydrocarbon Spill Preparedness

April 2025  
Revision 0

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## CONTROL AGENCIES AND INCIDENT CONTROLLERS

Source	Location	Level	Jurisdictional Authority/ Hazard Management Agency	Control Agency	Incident Controller
<b>Spill from facility including subsea infrastructure</b>  Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations	Commonwealth waters	1	NOPSEMA	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	1/2/3	Western Australian Department of Transport (DoT)	DoT	DoT Incident Controller
	Within port limits	1	DoT	Port Authority	Port Harbour Master
		2/3		Port Authority/ DoT	Port Harbour Master/ DoT Incident Controller
<b>Spill from vessel</b>  Note: SOPEP should be implemented in conjunction with this document	Commonwealth waters	1	Australian Marine Safety Authority (AMSA)	AMSA	Vessel Master
		2/3		AMSA	AMSA (with response assistance from Woodside)
	State waters	1/2/3	DoT	DoT	DoT Incident Controller
	Within port limits	1	DoT	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 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](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 <a href="#">APPENDIX A</a>		
ALL INCIDENTS	Notify the Woodside Communication Centre (WCC) on: [1]	
	Incident Controller or delegate to make relevant notifications in <b>Table 1-1</b> of this Oil Pollution First Strike Plan.	
LEVEL 1	<b>FACILITY INCIDENT</b>	<b>VESSEL INCIDENT</b>
	Coordinate pre-identified tactics in <b>Table 2-1</b> of this Oil Pollution First Strike Plan.  Remember to download each Operational Plan.	Notify AMSA and coordinate pre-identified tactics in <b>Table 2-1</b> 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: [1] and escalate to a level 2/3 incident.	
LEVEL 2/3	<b>FACILITY INCIDENT</b>	<b>VESSEL INCIDENT</b>
	Handover control to CIMT and notify DoT.	Handover control to AMSA and stand up CIMT to assist.
	Commence quick revalidation of the recommended strategies in <b>Table 2-1</b> taking into consideration seasonal sensitivities and current situational awareness.  Commence validated strategies.	If requested by AMSA/Port Authority:  Commence quick revalidation of the recommended strategies in <b>Table 2-1</b> 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 Woodside representative.**

**Table 1-1: Notifications**

**In the event of an incident between campaign vessels, also activate relevant vessel Emergency Response Plans and/or Bridging Documents.**

**In the event of an incident impacting live well or subsea infrastructure, activate relevant First Strike Plan(s): [Angel Platform](#)**

Timing	By	To	Name	Contact	Instruction	Form	Complete? (✓)
<b>NOTIFICATIONS FOR ALL LEVELS OF SPILL</b>							
Immediately	Offshore Installation Manager (OIM) or Vessel Master	Woodside Communication Centre (WCC)	CIMT IC	[1]	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 <sup>1</sup> )	Incident notification office	[2]	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).	<a href="#">Link</a>	
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 [2] NOPTA [3] DEMIRS [4]	[2]	
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	[5]	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 Marine Pollution Report (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 IMT.	[5]	
Within 24 hours of Woodside reporting a MOP to the appropriate authority e.g. DoT	CIMT IC or Delegate	Department of Primary Industries and Regional Development (DPIRD)			Notification to DPIRD via email within 24 hours of Woodside reporting the incident to the appropriate authority:  [6]	Email	
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	[7]	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"><li>• titleholder details</li><li>• time and location of the incident</li><li>• proposed response arrangements and locations as per the OPEP</li><li>• contact details for the response coordinator</li><li>• confirmation of access to relevant monitoring and evaluation reports when available.</li></ul>	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	CIMT IC or Delegate	WA Department of Biodiversity, Conservation and Attractions (DBCA)	Duty Officer	[8]	Phone call notification	Verbal	

<sup>1</sup> Notification to NOPSEMA must be from a Woodside Representative.

Department of Biodiversity, 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 or 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 Angel Subsea Infrastructure Removal.  Relevant persons/ organisations will be re-assessed throughout the response period.	Verbal initially	
As soon as practicable	Public Information	Relevant cultural authorities	To be determined	To be determined	Should it be identified that relevant 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 Angel Subsea Infrastructure Removal.  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 <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> (Cth) s 11(1)	Vessel Master	Australian Maritime Safety Authority (AMSA)	Rescue Coordination Centre (RCC)	[9]	Verbally notify AMSA RCC of the hydrocarbon spill.  Follow up with a written Harmful Substances Report (POLREP) as soon as practicable following verbal notification.	[9]	
ADDITIONAL LEVEL 2/3 NOTIFICATIONS							
As soon as practicable	CIMT IC or Delegate	AMOSC	AMOSC Duty Manager	[10]	Notify AMOSC that a spill has occurred and follow-up with an email from the <b>CIMT IC/ CIMT Deputy IC/ CMT Leader</b> 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.	[10]	
As soon as practicable	CIMT IC or Delegate	Oil Spill Response Limited (OSRL)	OSRL Duty Manager	[11]	Notification for all services:  Contact OSRL duty manager and request assistance from technical advisor in Perth.  Send the completed notification form to OSRL as soon as practicable.	[11]	
					Mobilisation of response personnel/ equipment:  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.	[11]	
					Mobilisation of Operational and Scientific Monitoring service:  For mobilisation of Operational and Scientific Monitoring (OSM) service, send the OSM Mobilisation Form to OSRL as soon as practicable. The mobilisation form must be signed by a nominated callout authority from Woodside i.e. <b>CIMT IC/ CIMT Deputy IC/ CMT Leader</b> . OSRL can advise the names on the call out authority list, if required.	[11]	
As soon as practicable if extra personnel are required for incident support	CIMT IC or Delegate	Marine Spill Response Corporation (MSRC)	MSRC Response Manager	[12]	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	Hydrocarbon	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	Marine Diesel Oil (MDO)					
Monitor and evaluate – tracking buoy	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	<b>WITHIN 24 HOURS:</b>  Tracking buoy deployed within 2 hours.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk of The Operational Monitoring Operational Plan.  Deploy tracking buoy in accordance with <a href="#">Link</a> .
Monitor and evaluate – predictive modelling	Yes	ALL	Undertake initial modelling using <a href="#">OceansMap</a> and weathering fate analysis using Automated Data Inquiry for Oil Spills (ADIOS) or refer to the hydrocarbon information in <a href="#">APPENDIX A</a> – Credible spill scenarios and hydrocarbon information.	Situation or Environment	<b>WITHIN 24 HOURS:</b>  Initial modelling within 6 hours using the Rapid Assessment Tool.	Predictive Modelling of Hydrocarbons to Assess Resources at Risk in The Operational Monitoring Operational Plan. <i>Planning to download immediately and follow steps</i>
	Yes	ALL	Send Oil Spill Trajectory Modelling (OSTM) form ( <a href="#">Appendix B, Form 7</a> ) to RPS Response ([13]).	Situation	<b>WITHIN 24 HOURS:</b>  Detailed modelling within 4 hours of RPS Response receiving information from Woodside.	
Monitor and evaluate – aerial surveillance	Yes	ALL	Instruct Aviation Unit Leader to commence aerial observations in daylight hours. Aerial surveillance observer to complete log in <a href="#">Appendix B Form 8</a> .	Logistics – Aviation	<b>WITHIN 24 HOURS:</b>  2 trained aerial observers.  1 aircraft available.  Report made available to the IMT within 2 hours of landing after each sortie.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk in The Operational Monitoring Operational Plan. <i>Planning to download immediately and follow steps</i>
Monitor and evaluate – satellite tracking	Yes	ALL	The Situation Unit Leader to action satellite imagery services. This may be obtained via: <ul style="list-style-type: none"><li>• AMOSC Duty Manager: [10]</li><li>• OSRL Duty Manager: [11]</li><li>• KSAT: [14]</li><li>• Others identified by CIMT</li></ul>	Situation	<b>WITHIN 24 HOURS:</b>  Service provider will confirm availability of an initial acquisition within 2 hours.  Data received to be uploaded into Woodside Common Operating Picture.	
Monitor and evaluate – pre-emptive assessment of receptors at risk	Yes	ALL	Consider the need to mobilise resources to undertake pre-emptive assessment of sensitive receptors at risk.	Planning or Environment	10 days prior to any impact predicted by monitor and evaluate, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 2 specialists from resource pool in establishing the status of sensitive receptors	Pre-emptive Assessment of Sensitive Receptors in The Operational Monitoring Operational Plan. <i>Planning to download immediately and follow steps</i>
Operational monitoring – shoreline assessment	Potentially	ALL	Consider the need to mobilise resources to undertake shoreline assessment surveys.	Planning or Environment	10 days prior to any impact predicted by monitor and evaluate, and in agreement with WA DoT (for Level 2/3 incidents), deployment of 1 specialist(s) in Shoreline Contamination Assessment Techniques (SCAT) from resource pool for each of the RPAs with predicted impacts	Mobilise OSM service via OSRL: [11]  Refer to OSM Bridging Implementation Plan – Part B for additional implementation information: <a href="#">Link</a>  Refer to <a href="#">Joint Industry Operational And Scientific Monitoring Plan Framework</a> for activation criteria and additional supporting information.
Operational and Scientific Monitoring	Yes	ALL	Consider the need to mobilise OSM resources via third party service provider.	Environment	<b>WITHIN 24 HOURS:</b>  Notify service provider of spill event and mobilise required programs depending upon nature of spill event	
Surface dispersant	No	N/A	This response strategy is not recommended for a spill of MDO.			
Containment and recovery	No	N/A	This response strategy is not recommended for a spill of MDO.			
Mechanical dispersion	No	N/A	This response strategy is not recommended for a spill of MDO.			
In-situ burning	No	N/A	This response strategy is not recommended for a spill of MDO.			
Shoreline protection and deflection	No	N/A	Modelling does not predict any shoreline contact at response thresholds.			

Technique	Hydrocarbon	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	Marine Diesel Oil (MDO)					
Shoreline clean-up	No	N/A	Modelling does not predict any shoreline contact at response thresholds.			
Oiled wildlife response	Yes	ALL	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.  Mobilise AMOSC Oiled Wildlife Containers.  Consider whether additional equipment is required from local suppliers.	Logistics and Planning		Oiled Wildlife Response Operational Plan

### 3. RESPONSE PROTECTION AREAS

**Action: Provide relevant Control Agency with applicable Tactical Response Plans for any Response Protection Areas (RPAs) identified during monitor and evaluate techniques.**

Hydrocarbon spill modelling results predict that no sensitive receptors have the potential to be contacted by floating hydrocarbons within 48 hours of a spill at response thresholds, and for the duration of the modelling spill event.

Tactical Response plans can be accessed via this [link](#) if required. These 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 the Angel Subsea Infrastructure Removal Operational Areas.

Consideration should be given to other stakeholders (including mariners) in the vicinity of the spill location. **Table 3-2** indicate the assets within the vicinity of the Angel Subsea Infrastructure Removal Operational Area.

**Table 3-1: Assets in the vicinity of the Angel Subsea Infrastructure Removal Operational Areas**

Asset	Distance and Direction from Angel Subsea Infrastructure Removal Operational Area	Operator
Angel Platform	Within operational area	Woodside
Okha FPSO	19.1 km southwest	Woodside
North Rankin Complex	49.5 km west-southwest	Woodside
Reindeer	65.7 km south-southwest	Santos
Goodwyn A Platform	72 km west-southwest	Woodside
Stag Platform	94 km south-southwest	Jadestone
Wheatstone	136.2 km west-southwest	Chevron
Pluto	140.4 km west-southwest	Woodside

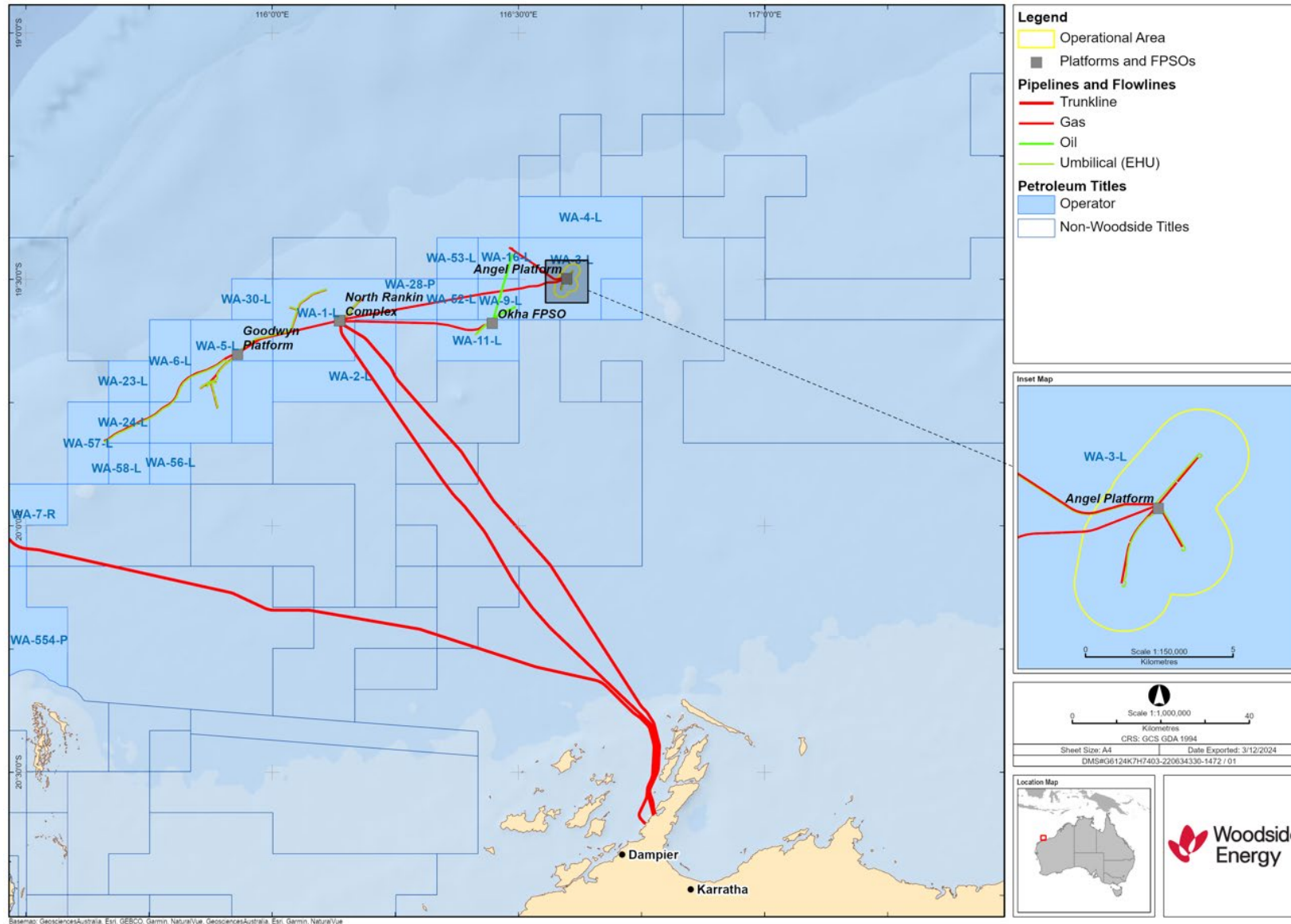


Figure 3-1: Operational area

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Uncontrolled when printed. Refer to electronic version for most up to date information.

## **4. DISPERSANT APPLICATION**

Dispersant is not considered an appropriate response strategy for this activity as described in the Angel Subsea Infrastructure Removal Environment Plan Appendix D (Woodside's Oil Spill Preparedness and Response Mitigation Assessment).



## APPENDIX A – CREDIBLE SPILL SCENARIOS AND HYDROCARBON INFORMATION

Table A - 1: Credible spill scenarios and hydrocarbon information

Scenario	Product	Density (g/cm <sup>3</sup> )	Volume	Residue	Weathering rate		Suggested ADIOS2 Analogue <sup>2</sup>
<b>CS-01</b> <i>Instantaneous release after a vessel collision at the Angel-3 wellhead</i>	MDO	0.829 at 25 °C	500 m <sup>3</sup>	5% (25 m <sup>3</sup> )	12 hours (BP < 180 °C)	6%	Diesel Fuel Oil (Southern USA 1) API of 37.2
					24 hours (180 °C < BP < 265 °C)	34.6%	
					Several days (265 °C < BP < 380 °C)	54.4%	
					24 hours (180 °C < BP < 265 °C)	34.6%	
					Several days (265 °C < BP < 380 °C)	54.4%	

<sup>2</sup> Initial screening of possible ADIOS2 analogues considered hydrocarbons with similar APIs. Suggested selection is based on the closest distillation cut to the Woodside hydrocarbon. Only hydrocarbons with >380°C distillation cuts were included in selection process.

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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	<a href="#">Link</a>
2	NOPSEMA Incident Report Form	[2]
3	Harmful Substances Report (POLREP – AMSA)	[9]
4	AMOSOC Service Contract	[10]
5	Marine Pollution Report (POLREP – DoT)	[5]
6a	OSRL Initial Notification Form	[11]
6b	OSRL Mobilisation Activation Form	[11]
6c	OSRL Operational and Scientific Monitoring Service Mobilisation Form	[11]
7	RPS Response Oil Spill Trajectory Modelling Request	[13]
8	Aerial Surveillance Observer Log	<a href="#">Link</a>
9	Tracking buoy deployment instructions	<a href="#">Link</a>

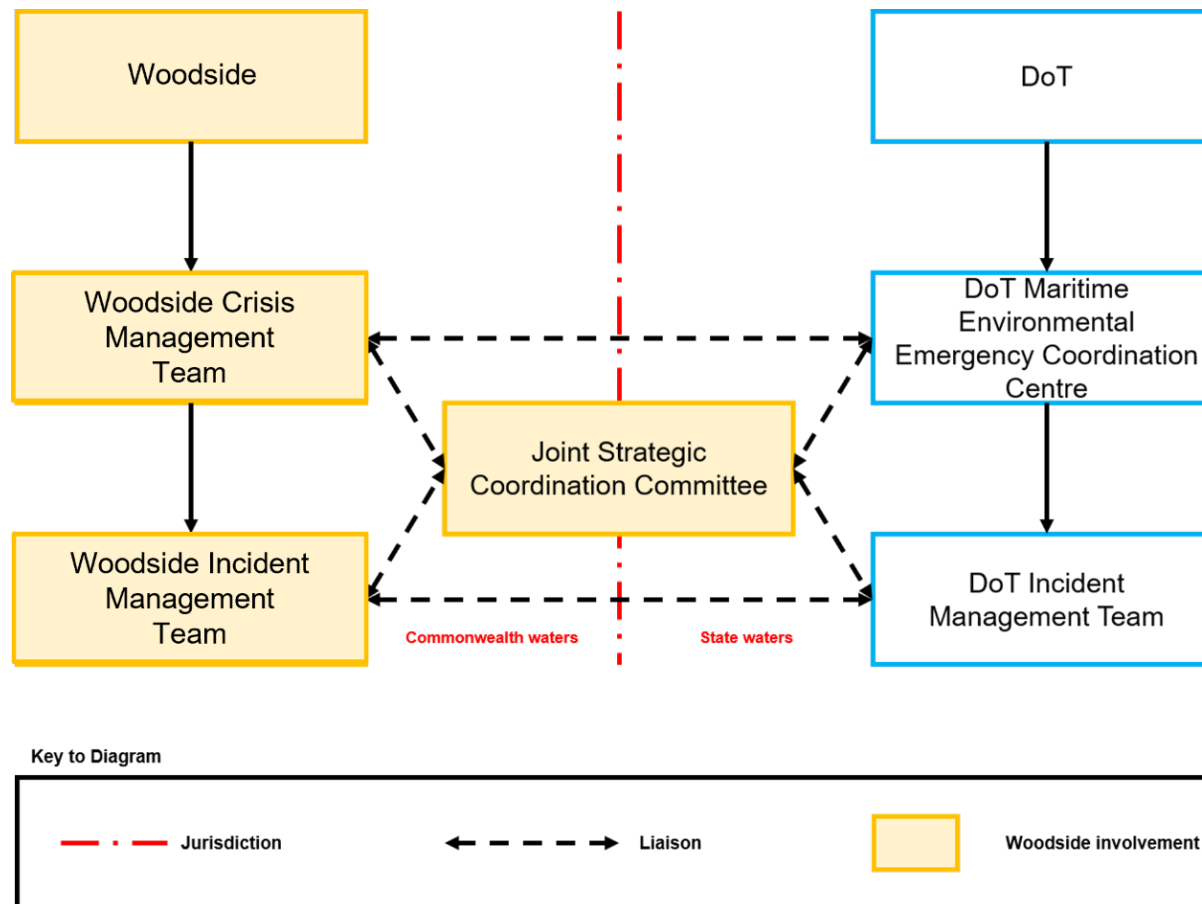
**FORM 1 – RECORD OF INITIAL VERBAL NOTIFICATION TO NOPSEMA**

<b>NOPSEMA phone: [2]</b>		
Date of call		
Time of call		
Call made by		
Call made to		
<b>Information to be provided to NOPSEMA:</b>		
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		
<b>After the initial call is made to NOPSEMA, please send this record as soon as practicable to:</b>		
NOPSEMA	[2]	
NOPTA	[3]	
DEMIRS	[4]	

## APPENDIX C – SPILL ASSESSMENT QUESTIONS

<b>What has happened?</b>		
Date/time		
Spill source		
Spill cause		
Safety situation		
<b>What is it?</b>		
Oil type and name		
Oil properties	Specific gravity	
	Viscosity	
	Pour point	
	Asphaltenes	
	Wax content	
	Boiling point	
<b>Where is it?</b>		
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		
<b>How big is it?</b>		
Area		
Release type	<input type="checkbox"/> Instantaneous	Estimated volume:
	<input type="checkbox"/> Continuous release	Estimated release rate:
<b>Where it is going?</b>		
Metocean conditions		
Currents and tides		
<b>What is in the way?</b>		
Resources at risk		
Time until resource contact		
<b>What's happening to it?</b>		
Weathering processes		
Response actions underway		

## APPENDIX D – COORDINATION STRUCTURE FOR A CONCURRENT HYDROCARBON SPILL IN BOTH COMMONWEALTH AND STATE WATERS/ShORELINES<sup>3</sup>

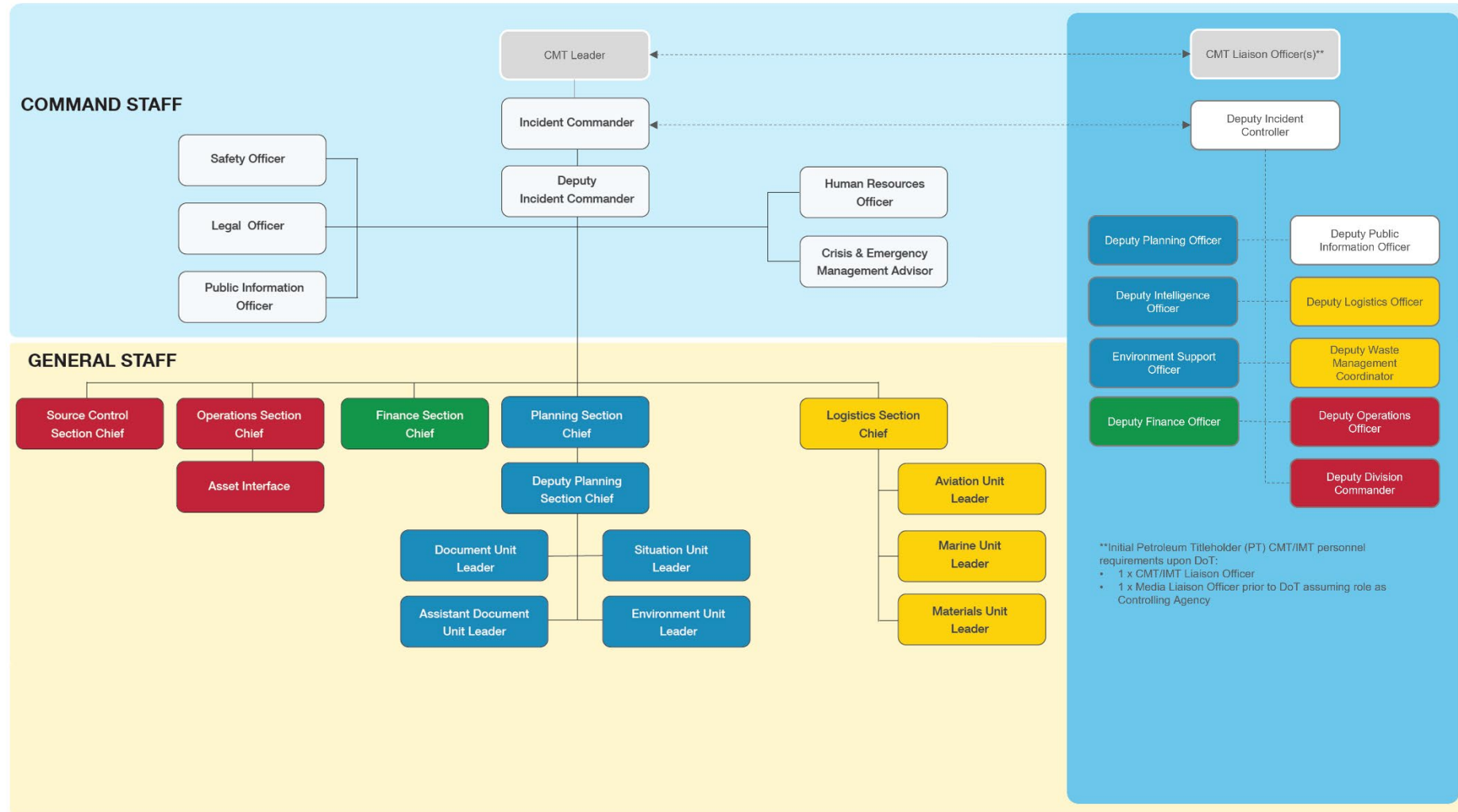


The Control Agency for a hydrocarbon spill in Commonwealth waters resulting from an offshore petroleum activity is Woodside (the Petroleum Titleholder). The Control Agency/ Hazard Management Agency (HMA) for a hydrocarbon spill in State waters/shorelines resulting from an offshore petroleum activity is DoT. DoT will appoint an Incident Controller and form a separate IMT to only manage the spill within State waters/shorelines.

<sup>3</sup> Adapted from DoT Offshore Petroleum Industry Guidance Note, Marine Oil Pollution: Response and Consultation Arrangements July 2020. Note: For full structure up to Commonwealth Cabinet/Minister refer to Marine Oil Pollution: Response and Consultation Arrangements Section 6.5, Figure 4.

## APPENDIX E – WOODSIDE INCIDENT MANAGEMENT STRUCTURE

Woodside Incident Management Structure for Hydrocarbon Spill (including Woodside Liaison Officers Command Structure within DoT IMT if required) is shown below. Woodside's CIMT would operate from the Emergency Operations Centre (EOC) at the Woodside headquarters in Perth.



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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. In the event the PPA is the Control Agency within the Dampier Port Limits, Woodside will make available similar roles as requested.

It is an expectation that Woodside's nominated CMT Liaison Officer and the Deputy Incident Controller attend the DoT Fremantle Incident Control Centre (ICC) as soon as possible after the formal request has been made by the State Marine Pollution Coordinator (SMPC), and that the remaining initial cohort will attend no later than 8 am on the day following the request being formally made to Woodside by the SMPC. 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 <sup>4</sup>	Key Duties	#
DoT Maritime Environmental Emergency Coordination Centre (MEECC)	CMT Liaison Officer	CIMT Liaison	<ul style="list-style-type: none"> <li>Provide a direct liaison between the CMT and the MEECC.</li> <li>Facilitate effective communications and coordination between the CIMT Leader and State Marine Pollution Coordinator (SMPC).</li> <li>Offer advice to SMPC on matters pertaining to PT crisis management policies and procedures.</li> </ul>	1
DoT IMT Incident Control	Deputy Incident Controller	Deputy Incident Commander (Deputy IC)	<ul style="list-style-type: none"> <li>Provide a direct liaison between the PT IMT and DoT IMT.</li> <li>Facilitate effective communications and coordination between the PT IC and the DoT IC.</li> <li>Offer advice to the DoT IC on matters pertaining to PT incident response policies and procedures.</li> <li>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.</li> </ul>	1
DoT IMT Intelligence	Deputy Intelligence Officer	Situation Unit Leader (Intelligence)	<ul style="list-style-type: none"> <li>As part of the Intelligence Team, assist the Intelligence Officer in the performance of their duties in relation to situation and awareness.</li> <li>Facilitate the provision of relevant modelling and predications from the PT IMT.</li> <li>Assist in the interpretation of modelling and predictions originating from the PT IMT.</li> <li>Facilitate the provision of relevant situation and awareness information originating from the DoT IMT to the PT IMT.</li> <li>Facilitate the provision of relevant mapping from the PT IMT.</li> <li>Assist in the interpretation of mapping originating from the PT IMT.</li> <li>Facilitate the provision of relevant mapping originating from the DoT IMT to the PT IMT.</li> </ul>	1
DoT IMT Intelligence – Environment	Environment Support Officer	Deputy Environment Unit Leader	<ul style="list-style-type: none"> <li>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.</li> <li>Assist in the interpretation of the PT OPEP and relevant TRP plans.</li> </ul>	1

<sup>4</sup> 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 [10].

Area	Role	Woodside personnel <sup>4</sup>	Key Duties	#
			<ul style="list-style-type: none"> <li>Facilitate in requesting, obtaining and interpreting environmental monitoring data originating from the PT IMT.</li> <li>Facilitate the provision of relevant environmental information and advice originating from the DoT IMT to the PT IMT.</li> </ul>	
DoT IMT Planning-Plans/Resources	Deputy Planning Officer	Deputy Planning Section Chief	<ul style="list-style-type: none"> <li>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.</li> <li>Facilitate the provision of relevant IAP and sub plans from the PT IMT.</li> <li>Assist in the interpretation of the PT OPEP from the PT.</li> <li>Assist in the interpretation of the PT IAP and sub plans from the PT IMT.</li> <li>Facilitate the provision of relevant IAP and sub plans originating from the DoT IMT to the PT IMT.</li> <li>Assist in the interpretation of the PT existing resource plans.</li> <li>Facilitate the provision of relevant components of the resource sub plan originating from the DoT IMT to the PT IMT.</li> </ul> <p><b>(Note this individual must have intimate knowledge of the relevant PT OPEP and planning processes)</b></p>	1
DoT IMT Public Information-Media/Community Engagement	Deputy Public Information Officer	Deputy Public Information Officer	<ul style="list-style-type: none"> <li>As part of the Public Information Team, provide a direct liaison between the PT Media team and DoT IMT Media team.</li> <li>Facilitate effective communications and coordination between the PT and DoT media teams.</li> <li>Assist in the release of joint media statements and conduct of joint media briefings.</li> <li>Assist in the release of joint information and warnings through the DoT Information and Warnings team.</li> <li>Offer advice to the DoT Media Coordinator on matters pertaining to PT media policies and procedures.</li> <li>Facilitate effective communications and coordination between the PT and DoT Community Liaison teams.</li> <li>Assist in the conduct of joint community briefings and events.</li> <li>Offer advice to the DoT Community Liaison Coordinator on matters pertaining to the PT community liaison policies and procedures.</li> <li>Facilitate the effective transfer of relevant information obtained from through the Contact Centre to the PT IMT.</li> </ul>	1
DoT IMT Logistics	Deputy Logistic Officer	Deputy Logistics Section Chief	<ul style="list-style-type: none"> <li>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.</li> <li>Facilitate the acquisition of appropriate supplies through the PTs existing OSRL, AMOSC and private contract arrangements.</li> <li>Collects Request Forms from DoT to action via PT IMT.</li> </ul> <p><b>(Note this individual must have intimate knowledge of the relevant PT logistics processes and contracts)</b></p>	1

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Area	Role	Woodside personnel <sup>4</sup>	Key Duties	#
DoT IMT Finance-Accounts/ Financial Monitoring	Deputy Finance Officer	Deputy Finance Section Chief	<ul style="list-style-type: none"> <li>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.</li> <li>Facilitate the communication of financial monitoring information to the PT to allow them to track the overall cost of the response.</li> <li>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.</li> </ul>	1
DoT IMT Operations	Deputy Operations Officer	Deputy Operations Section Chief	<ul style="list-style-type: none"> <li>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.</li> <li>Facilitate effective communications and coordination between the PT Operations Section and the DoT Operations Section.</li> <li>Offer advice to the DoT Operations Officer on matters pertaining to PT incident response procedures and requirements.</li> <li>Identify efficiencies and assist to resolve potential conflicts around resource allocation and simultaneous operations of PT and DoT response efforts.</li> </ul>	1
DoT IMT Operations – Waste Management	Deputy Waste Management Coordinator	Deputy Waste Coordinator (Materials)	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Collects Request Forms from DoT to action via PT IMT.</li> </ul>	1
DoT FOB Operations Command	Deputy Division Commander	FOB Deputy Incident Commander	<ul style="list-style-type: none"> <li>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.</li> <li>Provide a direct liaison between the PT FOB and DoT FOB.</li> <li>Facilitate effective communications and coordination between the PT Division Commander and the DoT Division Commander.</li> <li>Offer advice to the DoT Division Commander on matters pertaining to PT incident response policies and procedures.</li> <li>Assist the Safety Coordinator deployed in the FOB in the performance of their duties, particularly as they relate to PT employees or contractors.</li> <li>Offer advice to the Safety Coordinator deployed in the FOB on matters pertaining to PT safety policies and procedures.</li> </ul>	1
Total				11

## 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	DoT Liaison 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"> <li>Facilitate effective communications between DoT's SMPC/ Incident Controller and the Petroleum Titleholder's appointed CMT Leader / Incident Controller.</li> <li>Provide enhanced situational awareness to DoT of the incident and the potential impact on State waters.</li> <li>Assist in the provision of support from DoT to the Petroleum Titleholder.</li> <li>Facilitate the provision technical advice from DoT to the Petroleum Titleholder Incident Controller as required.</li> </ul>	1
Woodside CIMT Public Information – Media	DoT Media Liaison Officer	DoT	<ul style="list-style-type: none"> <li>Provide a direct liaison between the PT Media team and DoT IMT Media team.</li> <li>Facilitate effective communications and coordination between the PT and DoT media teams.</li> <li>Assist in the release of joint media statements and conduct of joint media briefings.</li> <li>Assist in the release of joint information and warnings through the DoT Information &amp; Warnings team.</li> <li>Offer advice to the PT Media Coordinator on matters pertaining to DoT and wider Government media policies and procedures.</li> </ul>	1
Total DoT Personnel Initial Requirement to Woodside				2

## **APPENDIX I      PROGRAM OF ONGOING ENGAGEMENT WITH TRADITIONAL CUSTODIANS**

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## **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](http://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.

**APPENDIX J     DEPARTMENT OF PLANNING, LAND AND  
HERITAGE ABORIGINAL ENQUIRY SYSTEM RESULTS**

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### Search Criteria

No Aboriginal Cultural Heritage (ACH) Register in Shapefile - AngelSSInfra\_Removal\_ConsultationEMBA

### Disclaimer

Aboriginal heritage holds significant value to Aboriginal people for their social, spiritual, historical, scientific, or aesthetic importance within Aboriginal traditions, and provides an essential link for Aboriginal people to their past, present and future. In Western Australia Aboriginal heritage is protected under the *Aboriginal Heritage Act 1972*.

All Aboriginal cultural heritage in Western Australia is protected, whether or not the ACH has been reported or exists on the Register.

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 provide the details to the Department via <https://achknowledge.dplh.wa.gov.au/ach-enquiry-form> and we will make every effort to rectify it as soon as possible.

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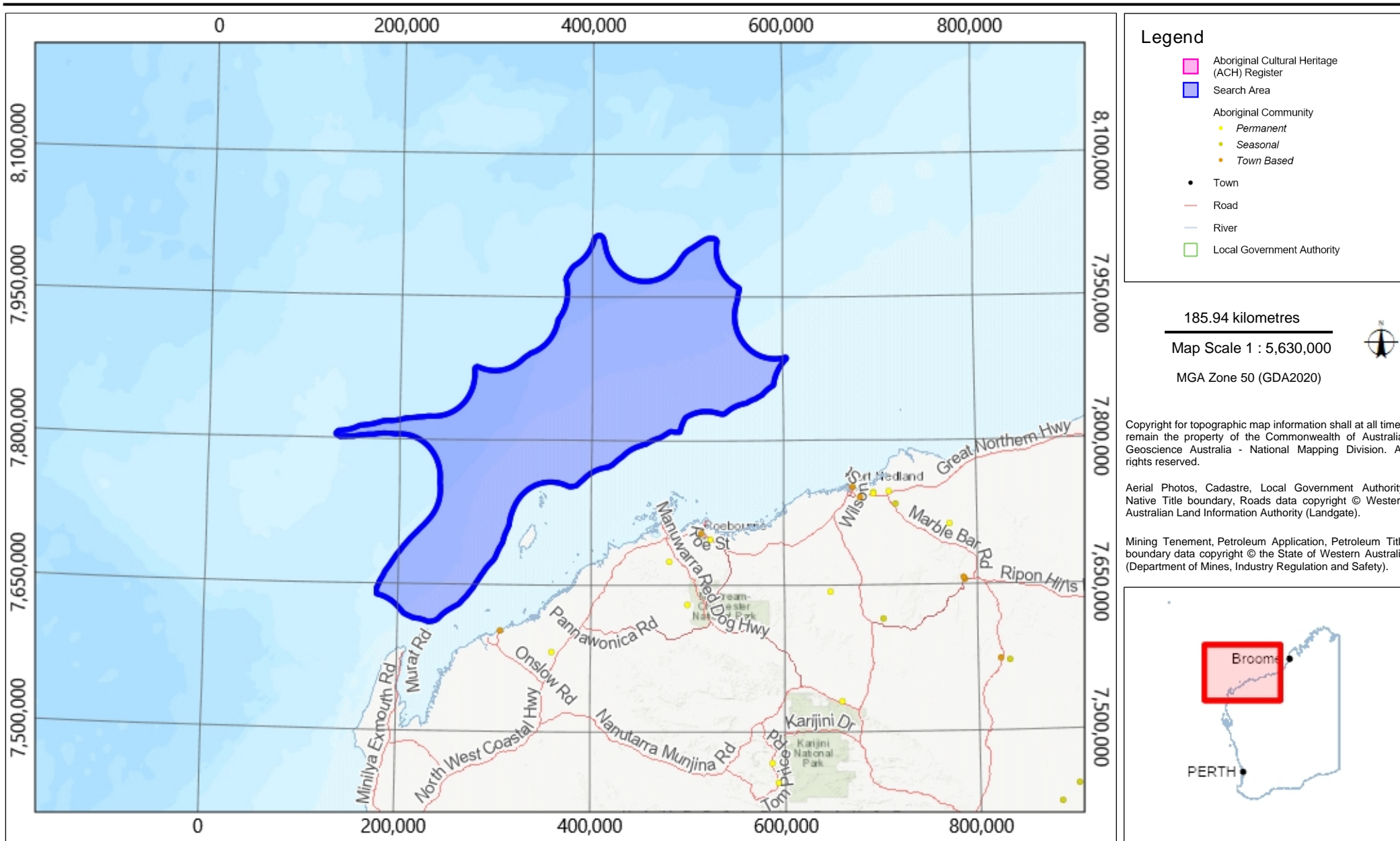
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# Aboriginal Cultural Heritage Inquiry System

## Map of Aboriginal Cultural Heritage (ACH) Register

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# Aboriginal Cultural Heritage Inquiry System

## Map of Aboriginal Cultural Heritage (ACH) Register

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